Generalized Clausal Modifiers in Thai Noun Phrases

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Abstract. The Thai particle thii introduces relative clauses and noun-complement clauses, but does not introduce clausal complements of verbs. This paper provides a unified analysis for these two noun phrase-internal clauses as modifiers, proposing that thii is a complementizer which is interpreted as a lambda-operator that derives CP-sized properties. This analysis is extended to the use of thii in factive complements of verbs, contrastive clefts, and infinitives. Arguments are presented against the analysis of thii by den Dikken and Singhapreecha (2004, Syntax 7.1) as a LINKER, a reflex of DP-internal predicate inversion.

Keywords: noun phrase – relative clause – noun-complement clause – complementizer – Thai

1. Introduction

Thai is one of several Asian languages, including Mandarin Chinese (e.g. Simpson 2003; Tang 1990), Korean (Sohn 2001, p. 309) and Khmer (Comrie and Horie 1995), where relative clauses and noun-complement clauses are marked with the same particle. The Thai particle, thii, is shown below introducing a relative clause (1), and then a noun-complement clause (2):

(1) [NP nakrian [RC thii khruu tii (miawaammii)] son maaak]
   student THII teacher hit ec yesterday naughty very
   ‘The student that the teacher hit (yesterday) is very naughty.’

(2) chan maj choop [NP khwaam.khit [NCC thii waa khruu khuan tii nakrian]]
   I.PSG NEG like idea THII COMP teacher should hit student
   ‘I don’t like the idea that teachers should hit students.’

In both environments, thii is obligatory.

The particle thii is historically derived from a noun meaning ‘place’ with an intermediate stage in its development as a preposition (Kullavanijaya 2008); all of these uses still exist in modern Thai. Early accounts of thii in Thai relative clauses identify it as a relative pronoun (Hass 1964, p. 243, Warotamasikkhadit 1972, p. 48). However, thii does not resemble any Thai pronoun, given its locative origin. Others, such as Ekniyom (1982), conclude that thii is a complementizer.

At first pass, the claim that thii is a complementizer in (1) and (2) seems sufficient, given that it proceeds clauses in both examples. Yet in noun complement clauses, thii is followed by another particle, waa, historically related to a verb meaning ‘to say’ (e.g. Thepkanjana 1986, p. 222-225). This particle is glossed COMP because it also introduces finite clausal complements of verbs, from which thii is absent:

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So, if wāa is a complementizer in Thai, is thīi also a complementizer when they occur together? Why does only wāa occur in verbal complements? And why are both wāa and thīi required in noun complement clauses? This paper addresses these questions, providing a unified syntactic and semantic account of the particles thīi and wāa, with special attention to the former.

Relative clauses and so-called noun-complement clauses are often analyzed as having different syntactic relationships with the head noun: relative clauses are adjuncts, while noun-complement clauses are complements, sisters to N0. This claim has been challenged. For example, Stowell (1981, p. 203) argues that noun-complement clauses are appositive modifiers, rather than nominal complements (see also Grimshaw 1990 and Moulton 2009, ch. 2). Following these proposals, in this paper I propose a unified analysis of relative clauses and noun-complement clauses as modifiers in Thai (making the term ‘noun-complement clause’ a misnomer). The complementizer thīi plays a central role in this analysis. I argue that in every environment that it occurs before a clause, it serves as a lambda operator, abstracting a predicate over a variable position within the clause.

The paper begins by examining the structure of relative clauses in Thai. An analysis of thīi as a fused relative operator and complementizer is presented.1 Locality restrictions and reconstruction facts support a head-raising analysis of relative clauses in Thai, which I argue is followed by reprojection of the NP above CP (Bhatt 2002; Aoun and Li 2003):

I claim that the semantic function of thīi in relative clause is to bind the CP-internal variable, creating a property (a function of type \( \langle e, t \rangle \)) which corresponds in the case of (4) to just that set of individuals that

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1While putative relative complementizers have been observed in many languages which are geographically close to Thai, including Mandarin Chinese (Li and Thompson 1981, p. 579-585) and Vietnamese (Nguyen 2004, p. 59-60), they also occur in the isolating Kwa languages of West Africa, including Yoruba (Bamgbóé 1975), Akan (Saah 2010), and Gungbe (Aboh 2005). They are also found in Bulgarian (Krapova 2010), Swiss German (van Riemsdijk 1989, 2003), Irish (McCloskey 1979, 2001), and Scottish Gaelic (Adger and Ramchand 2005).
the teacher hit yesterday. This analysis also accounts for a previously unexplained generalization made by Kuno and Wongkhomthong (1981b) that "thi" can only be omitted in subject-relative clauses.

The analysis of "thi" in noun-complement clauses is the same: it combines with a clause and returns a property. I take "wa" to be a complementizer which allows the CP to serve as an nominalized (individual-typed) proposition. "Thi" binds a variable corresponding to this proposition, creating a singleton property which defines that proposition. Syntactically, the two complementizers slot into the two different C positions in the extended CP of Rizzi (1997): Force for "thi", and Fin for "wa":

The Fin position of "wa" is supported by its restriction to finite clauses, while "thi" occurs in both finite and infinitival clauses. This proposal accounts both for the absence of "thi" and the presence of "wa" in verbal complements, as nominalized clauses are verbal arguments. Last, this analysis accounts for the absence of "wa" in relative clauses, which must have their arguments accessible to relativization.

Thus, the central claim of this paper is that "thi" occurs before relative clauses and noun-complement clauses because both must be interpreted as one-place predicates, or properties, of either individuals or propositions. This interpretation is necessary for these clauses to serve as nominal modifiers.2 This analysis is extended to the distribution of "thi" in other clausal environments, such as in clefts and infinitive clauses. While clefts are clearly reducible to relative clauses, I argue that infinitives also serve as clausal properties, unifying the semantic proposal of Chierchia (1984) with the standard syntactic analysis of infinitives as CPs. To the extent that this analysis is successful, it provides evidence that the mapping between syntax and semantics in the Thai complementizer system is direct and transparent.

A different approach to "thi" is pursued by den Dikken and Singhapreecha (2004), who propose that "thi" functions as a LINKER, a marker of DP-internal predicate inversion. I examine this proposal closely and argue that their analysis does not generalize to the full distribution of the particle "thi". The LINKER analysis is also based on problematic assumptions about Thai classifiers, which play a crucial role in the predicate inversion proposal.

The structure of the paper is as follows. Section 2 presents the analysis of "thi" in relative clauses, which is extended to noun-complement clauses in section 3. Section 4 examines the distribution of "thi" in factive complements of verbs, contrastive clefts, and infinitives, arguing that the analysis presented in the earlier sections can be extended to those cases as well. Arguments against the proposal by den Dikken and Singhapreecha (2004) are presented in section 5.

2. **Thi** as a Relative Complementizer

The example below illustrates a typical example of "thi" in a relative clause (RC):

2A similar structural claim in an earlier theory was made by Ekniyom (1982, p. 60-61).
‘a/the book that Nit bought’

Semantically, RCs describe a property, which can equivalently be thought of as a set or a one-place predicate. In (6), for example, the RC describes the set of items which Nit bought, or a predicate which is true only for those things that Nit bought. In order to derive this property-based meaning for a clause, RCs are assumed to include a relative operator, which binds a variable corresponding to the gap in the RC:

\[(7) \quad [\text{CP Op}_i \ldots [\text{TP} \ldots x_i \ldots]]\]

Relative operators thus combine with clauses and return a property. This ‘predic ativizing’ function of a relative operator — often called Predicate Abstraction (e.g. Heim and Kratzer 1998, p. 96) — is uncontroversial, going back at least to Quine (1960). Once the RC denotes a property, the RC is combined with the head noun, which standardly also denotes a property, by Predicate Modification (e.g. Heim and Kratzer 1998, p. 65), essentially set intersection.

More controversial than the interpretation of RCs is the question of how the relationship between the RC operator and the gap is established, and what the syntactic relationship is between the RC and the head noun. Two kinds of data have been brought to bear on the proper analysis of RCs. The first kind of evidence is the existence of locality effects typical of well-known cases of Ā-movement. These include, for example, island restrictions and crossover effects. A second kind of evidence bearing on the proper analysis of RCs comes from reconstruction phenomena, in which the relative head is interpreted as if it were inside of the RC. Such reconstruction effects have been taken as evidence for the head-raising analysis of RCs, in which the relative head is base-generated inside the RC and moved to a RC-external position.3

The following two sections provide evidence for movement and reconstruction of the head noun in Thai RCs, which we will take as evidence that the head-raising analysis of RCs is correct for Thai. Section 2.3 articulates the analysis of thîi as a relative complementizer in the context of this analysis. Section 2.4 examines gapless RCs and free relatives and argues that they can be accommodated in the proposed analysis. Section 2.5 shows that the conditions on the omission of thîi in subject RCs follows from its analysis as a relative complementizer.

2.1 Evidence for movement

In this section two kinds of evidence are provided for deriving Thai RCs with movement. First, Thai RC formation is sensitive to the island constraints on movement discovered by Ross (1967). Second, relativization in Thai leads to weak crossover violations (Postal 1971; Wasow 1979). Both of these properties are characteristic of Ā-movement.4

To begin, Thai relativization of both subjects and objects is sensitive to standard locality constraints on...
long-distance dependencies. Two examples are provided below. First, (8) illustrates that relativization out of a complex NP is unacceptable: the relative gap is located in a RC within a noun phrase which is an argument of the main RC:5

(8)  a. ??wan.níi chán hén [NP màai [RC thíi Nít rúucak [NP dèk j [RC thíi _ j kát _ j ]]]]
    today 1.PSG see 1.sg  dog  THÍI Nít  know  child  THÍI ec  bite ec
    ‘??Today I saw the dog that Nít knows the child that bit.’
    b. ??wan.níi chán hén [NP màai [RC thíi Nít rúucak [NP dèk j [RC thíi _ j jit _ j ]]]]
    today 1.PSG see 1.sg  dog  THÍI Nít  know  child  THÍI ec  shoot ec
    ‘??Today I saw the dog that Nít knows the child that shot.’

Example (9) illustrates that relativization cannot apply across an adjunct island. The relative gap is located inside of an adjunct clause inside a RC:

(9)  a. ??wan.níi chán hén [NP màai [RC thíi Nít glúmcaj [CP_phr__ j kát Nój ]]]
    today 1.PSG see 1.sg  dog  THÍI Nít  worried  because  ec  bite Noy
    ‘*Today I saw the dog that Nít is worried because bit Noy.’
    b. ??wan.níi chán hén [NP màai [RC thíi Nít glúmcaj [CP_phr__ j Nój jit _ j ]]]
    today 1.PSG see 1.sg  dog  THÍI Nít  worried  because  Noy  shoot ec
    ‘*Today I saw the dog that Nít is worried because Noy shot.’

The (a) versus (b) examples for both (8) and (9) demonstrate that it does not matter whether the relativization site is in the subject or object position of the island. In either case, the resulting sentence is ungrammatical.5

Further evidence for movement comes from the presence of weak crossover effects in Thai. Crossover effects, described in detail for English by Postal (1971) and Wasow (1979), arise whenever a new variable binding configuration is established by a putative instance of A-movement. The presence of weak crossover can be shown with an overt pronoun, as in (10-a), but such sentences are somewhat unnatural in Thai independently due to its preference to have bound pronouns be null. When the bound pronoun is null, as in (10-b), the result is still degraded:

(10)  a. ??chán chǎɔp [NP dèk i [RC thíi [NP mèː khâw j ] rák _ j ]]
    1.PSG like 1.sg  child  THÍI  mother 3p  loves  ec
    b. ??chán chǎɔp [NP dèk i [RC thíi [NP mèː khâw j ] rák _ j ]]
    1.PSG like 1.sg  child  THÍI  mother 3p  loves  ec

5A similar, but much more complex, example is claimed by Hoonchamlong (1991) to be grammatical (ch. 3, ex. 111). However, the survey discussed in (fn. 4) revealed her sentence to be unacceptable.

A second survey (n=19) tested the grammaticality of the sentences in (6) and (7) as well as variants with a) resumption and b) a classifier intervening between the noun and RC, an instance of the classifier-modifier construction (see section 5). The mean scores for these sentences were lower than a complex but grammatical test sentence, generally by about 1.5 points on a five-point Likert scale, with statistical significance at α=0.01. This corroborated the intuitions of several native speaker linguists I consulted with who did not accept these sentences.

However, several respondents did give the island violations high marks; 5/5 scores were not uncommon. There are two possible explanations for this variability in judgments. The first explanation is poor design. Many speakers may not have understood the nature of the grammaticality judgment task, and because the sentences were still interpretable, they still opted to give them high marks. The second explanation for the discrepancy among respondents is that there was a split among Thai speakers in whether they generate RCs by movement as opposed to base generation of a null anaphor in the gap position. The analysis I present below can accommodate both dialects, and my conclusions about the Thai complementizer system are largely independent of which option is chosen.

6The surveys discussed above revealed that resumption is dispreferred to a gap in RCs, contra the claims of Hoonchamlong (1991) who claims that resumption is freely available. In islands, resumption has a weak ameliorative effect, but does not lead to complete grammaticality (cf. Heestand et al. 2011, for English). Subject resumption generally leads to greater amelioration than object resumption (perhaps for subjects versus * or ?? for objects), reflecting a general tendency for Thai speakers to prefer subject resumption to object resumption.
‘I like the child, who his mother loves.’

b. ??chan  çınap [NP dêkI [RC tëj [NP mëv proI râk ]]]
    1PSG like  child  THII mother  loves ec

‘I like the child, who his mother loves.’

The existence of of weak crossover corroborates the evidence for movement provided by the existence of locality effects.7

2.2 Evidence for reconstruction

In this section I establish the existence of several instances of reconstruction in Thai RCs. I follow Chomsky (1993) in interpreting instances of reconstruction as evidence for a copy of the head noun inside the RC. This evidence forces an analysis of RCs where a copy of the relative head is located in the gap position, rather than, say, a trace of the relative operator. In analyses of English RCs, such evidence has provided support for the head-raising or matching analysis of RCs (Bhatt 2002; Bianchi 1999; Hulsey and Sauerland 2006, a.o.).

I consider three kinds of evidence for reconstruction. First, I examine idiom chunks, where the idiomatic interpretation of a head noun is retained despite relativization. Second, I consider the interpretation of RC-external quantifiers, which I show can be interpreted with scope inside of the RC. The third kind of reconstruction involves deictic modifiers, whose presence gives rise to interpretations indicating that they can be interpreted inside the RC (Bhatt 2002).8

The first test for reconstruction comes from idioms. In Thai there is a common idiom — familiar to speakers of English — about nuts and trees that carries the meaning that children are often similar to their parents:

(11) lûuk máaj lôn møj klaj tôn
    nut  fall  NEG  far  tree
i. ‘The nut doesn’t fall far from the tree.’
ii. ‘Children aren’t that different from their parents.’

The idiomatic meaning is retained when the subject of this expression is relativized:

(12) a. lûuk máaj [RC tëj lôn klaj tôn ] nàn háa yâak
    nut  THII fall  far  tree  TOPIC  find  difficult

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7Ideally, further evidence for movement could be found from strong crossover effects. Yet these effects are difficult to establish for Thai because it is both a subject and object pro-drop language (Hoonchamlong 1991; Huang 1984) and marginally allows resumption. As a result, when a RC contains two coindexed pronouns or gaps not in a A-binding configuration in Thai, the first pronoun can always be interpreted as a resumptive pronoun while a later gap could always be seen as an instance of topic-drop. Because of this, the claim by Hoonchamlong (1991, p. 202) that Thai lacks strong crossover effects should be taken with a grain of salt. See McCloskey (2006) on similar difficulties in finding evidence for strong crossover effects in languages that allow resumption. The problem does not arise with weak crossover: a possessive pronoun does not license topic drop, so the gap must be the tail of the A-chain. See section 2.3 for a possible analysis of resumption.

8I do not report reconstruction effects related to binding and anaphora, as the judgments I have received from speakers have shown substantial variation. Complications include the fact that the general-purpose reflexive anaphor in Thai, tua-eeN, also has logophoric uses, and can appear in subject position (Haddad 2007; Hoonchamlong 1991). The easy availability of the logophoric use makes it difficult to force anaphoric interpretations involving reconstruction into a RC. Regarding quantificational binding of variables, variable binding in pro-drop languages such as Thai has been observed to be sensitive to whether pronouns are overt. Given the already complicated data regarding resumption (see fn. 6), here too we find multiple difficult theoretical questions which cross purposes. A further is the fact that Thai allows copies of R-expressions to serve as bound variables (Larson 2006; Lasnik 1989; Lee 2003).
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i. ‘Nuts that fall far from the tree are hard to find.’
ii. ‘Children that are different from their parents are hard to find.’

b. lùukmâaj, [RC thîi __ lôuj màj klaj ton ] thâm-hâj phâo-nêr sâbaaj-caj
   nut THĪI fall NEG far tree CAUS parents content
   ‘Children that aren’t different from their parents put their parents at ease.’

In (12-a), both an idiomatic meaning and a non-idiomatic meaning are available, because the predicate hâa yâak is compatible with both. In (12-b), on the other hand, only the idiomatic reading is available due to the semantic properties of the matrix predicate.

The availability of the idiomatic interpretation for lùukmâaj ‘nuts’ as ‘children’ in (12) indicates that there is a copy of a relative head inside of the RC. The ability of this element to receive either an idiomatic interpretation or the non-idiomatic interpretation indicates that it can be interpreted either inside or outside of the RC.

A second argument for reconstruction comes from examples where the relative head is quantificational and can take scope inside of the RC:

(13) Nit yâak phôp [ phrä’ sâam rûup], [RC thîi nakhir thük khon rûu câk ]
   Nit wants meet monk three CLF THĪI student every CLF know of
   ‘Nit wants to meet three monks that every student knows.’ (3 ➔ every, every ➔ 3)

The two relevant readings are 1) there are three monks who are very famous, and are thus known by every student (3 ➔ every) and 2) every student knows of three different monks, perhaps ones from their hometown (every ➔ 3). The ambiguity of (13) demonstrates that the noun-number-classifier constituent can be interpreted RC-internally.9

The final argument for reconstruction can be made based on the scopal properties of certain adjectival modifiers, following Bhatt (2002):

(14) [ bòtkhwaam chabâb sûthâaj], [RC thîi nit phûut wâa chômksi khîian ] câi On Phases.
    paper CLF last THĪI Nit say COMP Chomsky write name
    ‘The last paper that Nit said that Chomsky wrote is “On Phases.”’

This sentence can have two interpretations based on the scope of sûthâaj ‘last.’ The first is that Nit named several papers that Chomsky has written, and that the last paper that she named was ‘On Phases.’ The second interpretation is that Nit made an explicit claim about the papers that Chomsky has written, namely, that the most recent or final paper that he wrote was ‘On Phases.’

These two readings can be characterized as a ‘high’ and a ‘low’ reading depending on which embedded clause sûthâaj ‘last’ is interpreted in. Bhatt (2002) argues that analogous English examples necessitate a head-raising analysis of RCs due to the interpretational requirements of ‘last.’ Thus, the evidence in (14) corroborates the evidence from idioms and quantifiers that RCs can be derived by movement of the head noun from a CP-internal position in Thai.

2.3 Deriving relative clauses with thîi

This section lays out a detailed analysis of RCs in Thai. I base the analysis of thîi on analogy with analyses of wh-in-situ in Thai and Chinese. I then extend the analysis to account for the movement and reconstruction effects presented in the previous sections.

9 An alternative account would involve Quantifier Raising (QR) out of the RC. But as QR is generally clause-bound (e.g. Reinhart 1997), an analysis involving reconstruction is to be preferred if independently supported.

I take relative complementizers in Thai to be the RC equivalents of the Q-operator which occurs in questions. These relative complementizers bear a [+pred] (Rizzi 1990) or [A] feature (Adger and Ramchand 2005) (cf. Cheng and Sybesma 2006 for Mandarin), interpreted as Predicate Abstraction (see below).10 Following Adger and Ramchand (2005), \textit{thi}i is also postulated to bear a [ID:dep] feature which establishes a coindexation relationship with an unvalued, [ID: ] feature borne on a goal via the Agree mechanism of Chomsky (2000, 2001). The bearer of [ID: ] is the tail of the \textit{A}-chain created by relativization. In my analysis, [ID: ] can occur on both pronouns (15-a) and lexical noun phrases (15-b); Adger and Ramchand only allow the former.

(15) a. $[\text{CP} \text{ thi}i_{[A, \text{ID:dep}]} \text{ pro}_{[\text{ID: ] }} \text{ ...}]$

b. $[\text{CP} \text{ thi}i_{[A, \text{ID:dep}, \text{EPP}]} \text{ NP}_{[\text{ID: ] }} \text{ ...}]$

c. $[\text{CP} \text{ NP}_{[\text{ID:dep}]} \text{ [C' thi}i_{[A, \text{ID:dep}, \text{EPP}]} \text{ ...⟨NP⟩ ...]}\]$

The analysis involving a CP-internal pronoun in (15-a) can be adopted in cases not requiring reconstruction or including a resumptive pronoun. The structures (15-b-c) represent a head-raising derivation, needed to account for instances of reconstruction. In such cases, \textit{thi}i would probe its complement, valuing the [ID: ] feature, and triggering movement of the NP to its specifier position by virtue of an EPP feature on \textit{thi}i.

The unvalued [ID: ] feature must also occur on lower C (and \(v\)) heads in cases of long-distance relativization in order to derive long-distance dependencies past a single phase. Complementizers introducing finite embedded clauses within the RC are not realized as \textit{thi}i in Thai, but as the general complementizer \textit{wāa} (e.g. (14)).11 This indicates that \textit{thi}i is only the exponent of the [A] feature in Thai, rather than [ID] probes, which can also occur on \textit{wāa}. Evidence that \textit{wāa} can realize [ID:dep] comes from the ability of \textit{wāa} to introduce embedded \textit{wh}-questions (cf. Ruangjaroon 2005).

Adger and Ramchand (2005) argue that locality constraints follow from the inability of Agree to probe into a completed phase, rather than movement itself. Thus, the search operation triggered by the unvalued [ID: ] feature on the relativized NP or pronoun is sufficient to account for the locality restrictions observed on relativization in section 2.1. If so, once all instances of [ID: ] are valued, a process which would proceed phase-by-phase, the derivation of the RC would be complete, and the RC could be merged with an external NP. This would complete the derivation of RCs with a base-generated pronoun, as in (15-a).

In the head-raising analysis, a movement-triggering EPP feature must occur on \textit{thi}i as well as on intermediate C-heads in cases of long-distance relativization (16-a):

(16) a. $[\text{CP} \text{ [C' thi}i_{[A, \text{ID:dep}, \text{EPP}]} \text{ ... [CP wāa}_{[\text{ID:}, \text{EPP}]} \text{ ...⟨NP⟩ ...]}\]$

b. $[\text{CP} \text{ NP}_{[\text{ID:dep}]} \text{ [C' thi}i_{[A, \text{ID:dep}, \text{EPP}]} \text{ ... [CP ⟨NP⟩ [C' wāa}_{[\text{ID:dep}, \text{EPP}]} \text{ ...⟨NP⟩ ...]}\]$

After the NP moves, the CP must merge with the noun phrase as a whole. While one could assume that the relative CP merges with a null D\(^0\), as in Kayne (1994), an alternative would be to follow Bhatt (2002),

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10 Huang (2006) presents a novel analysis for Chinese \textit{de} based on the idea that \textit{de} derives an \(\langle e\rangle\)-typed clause in order to match the type of the head noun, which is assumed to be a kind, also of type \(\langle e\rangle\), following Chierchia (1998). This remains a viable alternative for Thai, given the substantial similarities in the nominal syntax of the two languages, but several aspects of the current proposal would need to be rethought.

11 This fact distinguishes Thai from languages such as Irish, where embedded complementizers can be identical to the relative complementizer in the top clause (McCloskey 2002).
Aoun and Li (2003), and others, in allowing NP to reproject above CP:

(17)  
\[
\begin{array}{c}
\text{NP} \\
\text{NP} \quad \text{CP} \\
\langle \text{NP} \rangle \\
\text{C} \\
\text{thīi} \\
\text{TP} \\
\end{array}
\]

The [A] feature on thīi triggers Predicate Abstraction, the semantic rule for RC formation. Predicate Abstraction creates a one-place predicate abstracted over a variable in the base position of the head NP (18-b). The head-raising analysis directly accounts for the reconstruction facts under the assumption that any copy of an Ā-chain can be interpreted. Whether the higher or lower copy of the head NP is interpreted determines whether reconstruction applies; the other copy is deleted. If the head NP is interpreted internal to the CP, as is required by the cases of reconstruction above, it is interpreted by Trace Conversion (Fox 2002), which allows for reconstruction by virtue of the fact that the lexical content of the head NP is retained with the lower copy (18-c). If the RC-external copy of the head NP is interpreted, then the RC-internal copy is deleted, replaced by a simple variable. The abstracted predicate then combines with the RC-external head, a property, by Predicate Modification, essentially set intersection (18-d).  

\begin{align*}
(18) \quad & a. \text{nāṃśīi}_\text{[CP thīi[Λ,EPP,\text{ID}:\text{dep}]}_\text{[CP thīi[Λ,EPP,\text{ID}:\text{dep}]}]}_\text{[ID:]} \text{ maa ]} \\
& \text{book THII Nit buy book ASP} \\
& \text{‘a/the book that Nit bought’} \\
& b. = \{\text{NP} \langle \text{book} \rangle \{\text{CP } \lambda x(\langle e \rangle .\text{Nit bought } \langle \text{book}_x \rangle ) \} \} \quad \text{Predicate Abstraction} \\
& c. = \lambda x.\text{bought(Nit, } \langle y[\text{book}(y) \land y = x] \rangle) \quad \text{Reconstruction via Trace Conversion} \\
& d. = \lambda x.\text{book}(x) \land \text{bought(Nit, x)} \quad \text{No reconstruction, Predicate Modification}
\end{align*}

Regardless of which copy of the head NP is interpreted, the role of thīi is clear: it establishes a dependency with the RC internal gap, and it abstracts a predicate over that gap.  

2.4 Gapless and headless relatives

Thai allows so-called gapless RCs, like other languages including Swiss German (van Riemsdijk 2003), Chinese (Cheng and Sybesma 2006), and Japanese (Kuno 1973):

(19)  
\[
\begin{array}{c}
\text{NP chūt khràŋkřw [RC thīi } \text{kháw tham křw hāaj } \text{paj sōŋ baj ] } \text{pen khọŋkhwǎn} \\
\text{set crystal THII 3P CAUS disappear PRF two CLF BE gift} \\
\text{tèŋŋaan kháw} \\
\text{wedding 3P}
\end{array}
\]

\text{12}Object quantifiers that are reconstructed into a RC (e.g. (13)) must be interpreted in a Quantifier-Raised position within the RC, QR can feed relativization as both operations are cases of Ā-movement.

\text{13}Several issues have been glossed over in this discussion relating to the inner mechanisms of Trace Conversion and the interpretation of bare nouns in Thai, which Piriyawiboon (2010, ch. 3) and Jenks (2011, ch. 3) argue are interpreted as kinds. If properties and kinds are freely accessible via the ‘nom’ and ‘pred’ type-shifting operators, the proposal above is compatible with a kind-based analysis of Thai nouns (Chierchia 1984, 1998; Partee 1987).
While they have been called ‘gapless’, Hoonchamlong (1991) argues that RCs contain a null ‘ProPP’ gap in these cases. In (19) the ProPP would be the null equivalent of ‘from it’, ‘it’ coindexed with the relative head. Similarly, van Riemsdijk (2003) observes that gapless RCs involve association of the head noun with an adjunct in the RC.\footnote{It is interesting that languages that allow gapless RCs are consistently those languages where the relative operator is invariant regardless of the category or case properties of the gap. This generalization is trivially true for Japanese, which lacks a relative operator altogether, but does non-trivially hold for Chinese and Thai, as we have seen, as well as Swiss German, which uses wo ‘where’ regardless of the category of the head. That Swiss German and Thai use transparently locative operators makes the postulation of a null ProPP or PP gap all the more plausible in such cases.}

The analysis of RCs in the previous section can also be extended to headless, or free, RCs (Ekniyom 1982, p. 62-65; Hoonchamlong 1991, p. 179-180):

(20) a. thīi khun hếñ _ khii ĭńk ‘Sears’
  THII you see ec SPEC building
  ‘What you see in front of you is the Sears Tower.’

b. chán māj chīa thīi khun bōok _
  1P.SG NEG believe THII 2p tell ec
  ‘I don’t believe what you said’ (Hoonchamlong 1991, p. 179-180)

However, thīi in these examples can be preceded by dummy nouns:

(21) a. s̀ıṁ thīi khun hėñ _ khii ĭńk ‘Sears’
  thing THII you see ec SPEC building
  ‘What you see in front of you is the Sears Tower.’

b. chán māj chīa s̀ıṁ thīi khun bōok _
  1P.SG NEG believe thing THII 2p tell ec
  ‘I don’t believe what you said’ (Hoonchamlong 1991, p. 180-181)

Thus, it is not implausible that the free relatives in (20) are headed by a null element as well, and that these are, in fact, headed RCs (cf. Groos and van Riemsdijk 1981).

2.5 The optionality of thīi in subject RCs

In an early study of RCs in Thai, Kuno and Wongkhomthong (1981b, KW) discovered that thīi is obligatory in Thai RCs with the exception of subject relatives:

(22) a. khon [RC thīi] s̀īi nā̄nści lèm nīi ]
  person THII ec buy book CLF this
  ‘people who bought this book’ (KW, p. 198)

b. s̀īi [(RC *thīi) khon s̀īi _ ]
  thing THII person buy ec
  ‘things that people buy’ (KW, p. 205)

As pointed out by KW, this situation is the exact opposite of the one found in English, where complementizers are only obligatory in subject RCs.

In addition to being restricted to subject position, the interpretation of RCs without thīi is different from RCs with thīi. The following contrast illustrates the difference:

‘The crystal set that he lost two glasses is his wedding present.’ (Hoonchamlong 1991, p. 181)
The RC modifying the object in (23-a) can either refer to the generic class of smokers or people who are smoking in a particular situation. That is, the sentence can either mean that I don’t like smokers in general, or that I don’t like a particular person or group of people who happen to be smoking at the next table. When thɨi is absent, as in (23-b), only the generic meaning is available.

This same contrast explains the unacceptability of the following example without thɨi:

(24) phˊom máy chıop [np khon *(thɨi) s`ub burii nay khan`a? thɨi aacaan kamlaaj s`oon ]
1p.sgm nég like person thɨi smoke cigarettes in moment that teacher proq teach
‘I don’t like people who smoke while teachers are teaching.’ (KW, p. 221)

The group denoted by the RC is not a well established kind, like smokers, but is restricted to smokers in a particular situation. Because the property denoted by the RC does not refer to the general property of being a smoker, thɨi must introduce it.

In summary, two properties related to the omission of thɨi should follow from any analysis. First, thɨi is only optional with subject RCs, and second, thɨi-less subject RCs must be interpreted generically. If RCs without thɨi as bare vP participles adjoined to NP:

As (25-b) illustrates, thɨi can be absent in subject relatives because the type of vP is already the same as the type of RCs, as the subject position is unsaturated. These participles can be directly composed with the head noun by Predicate Modification, without any need for the relative operator associated with thɨi. Because it is a C0, when thɨi is present, the TP projection requiring subjects would be present as well. This subject position would then need to be abstracted over by thɨi in subject relatives. The generic interpretation of RCs without thɨi also suggests that they lack the tense semantics associated with the TP projection. Thus, the optionality of thɨi in subject RCs follows directly from the proposal that it is a relative complementizer.

3. Noun Complement Clauses as Propositional Modifiers

The proposal that thɨi is an operator, while natural for RCs, makes its presence in noun-complement clauses (NCCs) a puzzle. This is because the nominal associate of the NCC is not obviously associated with a gap in the NCC, and NCCs themselves are traditionally analyzed not as modifiers, but nominal complements. A further puzzle is the fact that thɨi co-occurs with the complementizer wāa in NCCs, as we saw in example (2). In this section I argue that despite the lack of a gap, NCCs should be analyzed both as clausal predicates and modifiers, making the presence of thɨi therein unsurprising.
First, section 3.1 presents arguments that Thai NCCs do not have the syntax of complements. Section 3.2 focuses on the contribution of the complementizer ฺwaa, arguing that it functions to derive argumental propositions, of type ⟨e⟩, from propositions, following Chierchia (1984) and Potts (2002). Following this observation, section 3.3 demonstrates that the propositionals that occur with NCCs, such as ‘idea’ and ‘rumor,’ are properties of propositions. Section 3.4 presents the analysis of NCCs in Thai as clausal modifiers. Section 3.5 addresses an asymmetry between NCCs and RCs, unexpected under the present analysis, and suggests that it follows from the specificalional nature of NCCs.

3.1 Noun-complement clauses are not complements
This section presents evidence that NCCs with ฑี are not syntactic complements of the noun they are associated with. There are three arguments. First, the order of relatives and NCCs relative to the noun is restricted, but not in the way that we would expect if NCCs were complements: NCCs must follow RCs. Second, a classifier, which is a functional projection of the noun, can intervene between the head noun and NCCs. Third, instances of genuine clausal complementation within the noun phrase, such as complements of event nominals, occur without ฑี. All of these facts are compatible with an analysis of NCCs as clausal modifiers, which is presented in section 3.4.

I begin with a puzzle. While RCs can precede NCCs as in (26-a), occurring directly adjacent to the noun, NCCs cannot precede RCs (26-b):

(26) a. ชัน มัจจุฬา [NP ข่าวยิ่ง [RC ฑี ชัน ด้วย-ยิ่ง มี-ข้าว-นิ่ม ] [NCC ฑี วา่า ข้าว ค่ำ? จ้าง บ้าน ] โม่ง 3p โปร่ง ขาวบ้าน 'I don’t believe the rumor that I heard this morning that he’ll move.'

b. *ชัน มัจจุฬา [NP ข่าวยิ่ง [NCC ฑี เว่า ข้าว ค่ำ? จ้าง บ้าน ] [RC ฑี ชัน ด้วย-ยิ่ง มี-ข้าว-นิ่ม ]] โม่ง 3p โปร่ง ขาวบ้าน 'I don’t believe the rumor that he’ll move that I heard this morning.'

The requirement that RCs intervene between nouns and NCCs provides a compelling argument that NCCs are not complements, which form tight constituents with their selecting head in Thai (Jenks 2011, section 2.1). This restriction is somewhat puzzling, however. If both NCCs and RCs are nominal modifiers, why should they not be able to order freely? I return to this question in section 3.5.

15This fact was discovered by an anonymous reviewer; earlier drafts indicated that either order of NCC or relative was allowed. The survey discussed above (fn. 4) confirmed that NCCs must follow relatives in Thai.

16Attentive readers may have noticed both English glosses in (26) are grammatical. The difference may follow from the availability of extraposition in English, but not in Thai, as demonstrated in the following example:

(27) a. ชัน เห็น [NP ดี [CP ฑี ครู นิ่มที่ ] มี-ข้าว-นิ่ม ] โม่ง 3p โปร่ง ขาวบ้าน 'I saw the child that the teacher hit this morning.'


This suggests that the NCC-RC order in English may be due to the availability of extraposition for the RC, a topic I leave for future research. Another puzzle is that in Mandarin Chinese, in which RCs and complement clauses appear on the left, complement clauses must occur closer to the noun that the RC (Simpson 2003). This is a puzzle both for the analysis here and the proposal in section 3.5.
A further argument that NCCs are not complements comes from the ability for bare (non-quantified) classifiers to intervene between the head noun and the NCC, an instance of what Jenks (2011, ch. 5) terms the Classifier-Modifier Construction. Prepositional phrases, relative clauses, and adjectives can also occur after a bare classifier in this construction. Below, the classifier ɾiɛŋ ‘story, matter,’ occurs in this position:

(28) chǎn mǎj chîo [NP kʰəaw-liii ɾiɛŋ [CP thii wâa kʰəaw cài jàaj bâan ]]
1P.SG NEG believe rumor CLF\textsuperscript{prop} THII COMP 3P PROSP move house
‘I don’t believe the rumor that he’s going to move’

Because classifiers are usually analyzed as functional projections of the noun in Thai (e.g. Jenks 2011; Piriyawiboon 2010; Simpson 2005; Visonyanggoon 2000), the ability of this projection to intervene between the noun and an NCC is at odds with the idea that the NCC is the sister of N\textsuperscript{0}.

A third argument that NCCs are adjuncts comes from facts related to different kinds of nominalizing morphology in Thai. While in earlier examples I translated the noun kʰwaam-kʰiit as ‘idea,’ its literal meaning is ‘thought,’ as it is derived from the verb kʰiit ‘think’ via the derivational prefix kʰwaam ‘sense, essence.’ The distribution of kʰwaam is restricted, as it only combines with adjectives and stative verbs, deriving abstract nouns. Another nominalizing morpheme in Thai is kaaan. This prefix, also a noun meaning ‘fact, matter,’ combines with verbs referring to activities and derives event nominalizations.\textsuperscript{17} Hass (1964, p. 29) observes that nominalizations resulting from kaaan have essentially the same flavor as English-ing gerunds do. When transitive verbs are nominalized by kaaan, their objects occur directly after them, unmarked:

(29) [DP kaaan-kʰiian côte-màaj ] nàa-òia
KAAN-write letters boring
‘Writing letters is boring.’

Returning to our discussion of NCCs, verbs like kʰiit ‘think’ can occur with both kinds of nominalization, though only nominalizations formed with kʰwaam require thii:

(30) a. kʰwaam-kʰiit [CP *(thii) wâa khruu khuu tii nákrian ]
KHAAM-think THII COMP teacher should hit student
‘the idea/thought that teachers should hit students’
b. kaaan-kʰiit [CP (*thii) wâa khruu khuu tii nákrian ]
KAAN-think THII COMP teacher should hit student
‘thinking that teachers should hit students’

Thus, while the clause accompanying kʰwaam-kʰiit is a typical NCC introduced by thii-wâa, the complement of the kaaan-nominalization resembles a verb-complement clause (cf. (3)). This follows the general pattern observed for kaaan-nominalizations observed in (29), in that the form of the complement does not change if the verb is nominalized. It is clear, then, that clauses introduced by thii differ in some crucial way from true clausal complements.

Adopting a Distributed Morphology analysis of nominalizing morphemes as categorical n heads (Arad 2003; Embick and Marantz 2008), we can account for the difference between kʰwaam and kaaan by proposing they combine with different kinds of elements. While kʰwaam combines directly with a root, kaaan combines with the verb kʰiit after it has taken its CP complement:

\textsuperscript{17}For more on the distribution of two prefixes, see Prasithrathsint (1996, 2006).
This analysis captures the semantic generalization that *kaan* nominalizations include an event while *khwaam* nominalizations do not, supplemented by the assumption that only non-stative verbs introduce events (Kratzer 1995).

In summary, the requirement that NCCs follow RCs, the ability of classifiers to intervene between between nouns and NCCs, the distinct behavior of *kaan* and *khwaam* nominalizations, and the morphological similarity between RCs and NCCs, all support the view that NCCs are not complements of the nouns they occur with, but adjuncts.

### 3.2 Propositional arguments

As indicated in the previous section, the complementizer *wàa* usually introduces finite clausal complements of verbs (see section 4.1 for a discussion of some exceptions):

(32) chàn khít [CP *(wàa) Waan cà? jàaj bàan ]

1P.SG think COMP Waan PROSP move house

‘I think that Waan is going to move.’

Why is *wàa* necessary here? As a starting point, I take *wàa* to be [+Fin], the head of the FinP of Rizzi (1997). This proposal alone is insufficient, failing to account for the absence of *wàa* in finite RCs, for example.

Chierchia (1984) proposes that complementizers are nominalization operators for propositions. Potts (2002) implements this idea via the NOM/∩ type shift of Chierchia (1984), specially defined for propositions:

(33) If \( p \in D_{(s,t)} \), then \( \cap^p(p) = \{ t^p : \forall w \in p : w \leq x^p \} \) and \( \cap^p(p) \in D_{(e)} \). (Potts 2002, p. 57)

The conditional clause on the left in (33) restricts the specialized propositional NOM function to the domain of propositions. The output of NOM is of type \( \langle e \rangle \), as we see in the right hand side of the definition. Thus, the overall effect of this operator is to convert a proposition, a function from worlds to truth values, into the maximal set of worlds in which the proposition is true. The \( t \) operator is a definiteness operator, a kind of choice function which binds the sorted variable \( x^p \), defined for propositions, and selects the maximum plurality from the set denoted by the proposition. The middle part of the equation ensures maximality: if a world is in \( p \), then that world is a subpart \( (\leq) \) of \( x^p \). The subpart operation is as defined by Link (1983).

If *wàa* is the morphological realization of the \( \cap \)-operator for clauses, it is clear why *wàa* is necessary for CP to function as an argument:
Generalized clausal modifiers

(34) a. VP
   V  kh´ıt
   C  wˆaa
   TP  Waan c` aP j´aaj bˆaan

b. \( \lambda y[\text{think}(y,[\text{WAAN-WILL-MOVE}])] \)

The bracketed proposition \([\text{WAAN-WILL-MOVE}]\) represents a propositional individual which serves as the internal argument of the verb \( \text{kh´ıt} \) “think.” This analysis can be seen as a semantic implementation of Szabolcsi (1994)’s claim that complementizers are the clausal correlate of D, as both C and D serve as subordinators that allow these categories to function as arguments.18

To summarize, \( wˆaa \) serves two functions in this analysis: finiteness marking and argument formation. If \( wˆaa \) is an argument-forming operator, it provides the first part of the explanation for why \( wˆaa \) is absent in RCs: RCs are not arguments. The following section presents evidence that NCCs are not nominal arguments either, leading to an account for why \( \text{th´ıi} \) must be present in NCCs.

3.3 Propositional properties

Stowell (1981, pp. 197-203) argues, based on semantic observations, that NCCs are not internal arguments of propositional nouns such as “thought” and “rumor.” He observes that these nouns denote properties which hold of propositions.19 The status of these nouns as properties is shown in that they occur as predicates in copular sentences such as (35-a), while NCCs occur in specificational/equative copular sentences, as in (35-b) (Higgins 1973; Potts 2002; Stowell 1981):

(35) a. That he’s going to move is (just) a rumor.
   b. The rumor is that he’s going to move.

Simple evidence that (35-a) is predicational while (35-b) is specificational in English is the distribution of articles: the predicate nominal in (35-a) is indefinite.\(^{20}\) We can conclude that propositional nouns such as \( \text{rumor} \) can be interpreted as type \( \langle e,t \rangle \), as properties of propositions.

In Thai the distinction between predicational versus specificational/equative copular sentences is quite clear, as they are distinguished by different lexical copula (Kuno and Wongkhomthong 1981a). In (36) the nominal \( \text{kh`aaw-lii} \) ‘rumor’ functions as a predicative noun.

(36) \[ \text{TH´I} \ [ \text{CP w´aa kh´aw c´a\? j´aaj b´aan} ] \text{pen} [ \text{NP kh`aaw-lii} ] \]
   \text{BE news-rumor}

‘That he’s going to move is a rumor.’

The copula \( \text{pen} \) in Thai only takes predicative nouns as complements. Therefore, we can conclude that \( \text{kh`aaw-lii} \), and by extension other propositional nouns, are properties which can be predicated of sentential

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18See Chierchia (1984) and Potts (2002) for additional arguments that CPs are sometimes of type \( \langle e \rangle \).
19Grimshaw (1990) argues that nouns such as ‘thought’ are ambiguous between ‘event’ and ‘result’ nominals, and that the former cases do take an internal argument. The arguments below focus on the Thai counterparts of ‘result’ nominals. ‘Rumor’ is a good choice in Thai because it is not deverbal, but all \( \text{khwaam} \) nominalizations should qualify under the analysis in section 3.1.
20Mikkelsen (2005) argues that subject noun phrases in specificational clauses — ‘the rumor’ in (35-b) — are still properties, and that their definiteness is required for information structural reasons.
subjects as in (36).\textsuperscript{21}

In contrast, CPs can occur as bare complements of the specificalional/equative copula *khii*. These complements can optionally be introduced by *wāa* as long as it is followed by a pause, though some speakers find these examples degraded. However, *thīī* can never occur following *khii*, as shown in (39-b).

(39) a. [NP khāaw-lii ] *khii* [CP (*’wāa*) khāaw cā? jāaj bāan ]
   news-rumor EQ COMP 3P PROSP move house
   ‘The rumor is that he’s going to move.’
   b. *[NP khāaw-lii ] *khii* [CP thīī (*wāa*) khāaw cā? jāaj bāan ]
   news-rumor EQ THĪī COMP 3P PROSP move house

I take predicational copula to be transitive predicates which take predicative objects, of type ⟨e, t⟩, and referential subjects, of type ⟨e⟩.\textsuperscript{22} Following the semantic analysis of specificalional clauses in Mikkelsen (2005), I consider specificalional clauses headed by *khii* to be the inverse cases, transitive predicates which take predicative subjects and referential objects.

(40) a. [[pen]] = λP⟨e,t⟩λx⟨e⟩[P(x)]
   b. [[khii]] = λx⟨e⟩λP⟨e,t⟩[P(x)]

Thus, propositional nouns are properties, while CPs without *thīī* are referential. This analysis provides a natural account of the fact that only referential noun phrases can follow *khii* (Kuno and Wongkhomthong 1981a). I follow the spirit of Heycock and Kroch (1998, 1999) in analyzing both predicational and specificalional structures as base-generated, rather than deriving the latter from the former by inversion, though little rests on this assumption here:

\textsuperscript{21}Example (36) demonstrates that sentential subjects must occur with *thīī*. I take this as an indication that the subject in (36-a) is a noun phrase, rather than a CP. The simplest argument for this conclusion is that a ‘dummy’ noun/classifier, *rān* ‘story, matter,’ can be inserted in (36) before *thīī*:

(37) [NP rān thīī [CP wāa khāaw cā? jāaj bāan ] pen [NP khāaw-lii ]]
   matter THĪī COMP 3P PROSP move house BE news-rumor
   ‘That he’s going to move is a rumor.’

The same facts hold for non-copular sentences with sentential subjects:

(38) a. [NP (riān) thīī [CP wāa khāaw cā? jāaj bāan ] (man) jīr māak
   matter THĪī COMP 3P PROSP move house it bad very
   ‘That he’s going to move is terrible.’
   b. *[CP wāa khāaw cā? jāaj bāan ] (man) jīr māak
      COMP 3P PROSP move house it bad very

If *thīī* is absent, the resulting clause headed by *wāa* is ungrammatical (38-b). The straightforward explanation of this fact is that the dummy nominal *riān* can be elided in these contexts, but is always structurally present. This entails that subjects must be noun phrases in Thai, as Alrenga (2005) suggests for English.

\textsuperscript{22}Because nouns may denote kinds in Thai (Piriyawiboon 2010; Jenks 2011), the noun *pen* can be seen as taking a nominal kind as its complement, and shifting it up to a property. See (Jenks 2011, p. 173) for a sketch of this view.
To conclude, CPs headed by *wâa* are argumental, while propositional nouns are properties. Nothing has been said about the requirement that *thîi* occur with NCCs, to which we now turn.

### 3.4 NCCs as modifiers

In section 2 *thîi* was analyzed as a relative complementizer, interpreted as a lambda-operator. Two derivations were considered for RCs, both of which resulted in structures where the CP was effectively adjoined to NP. Evidence that NCCs are not complements was presented in section 3.1, suggesting that the standard analysis of RCs as NP adjuncts can be generalized to NCCs.

A loose end in this analysis is how *thîi* and *wâa* can be accommodated in the phrase structure of NCCs, where both occur. *Rizzi* (1997) proposes that there are two types of C-heads, Force$^0$ and Fin$^0$, and that the latter are structurally higher than the former. Its correlation with finiteness indicates that *wâa* is in the lower Fin$^0$ position, while *thîi* is in Force$^0$, just as Rizzi proposes for relative complementizers:

(42) a. *ch˚ an 1P.SG NEG khwaam-kh˚ thîi wâa khruu khuan tii d˚ ek*  
   'I don’t like the idea that the teacher has hit children.'

b.  

Thus, *thîi* and *wâa* map transparently into Rizzi’s articulated left periphery. Our final puzzle relates to the status of *thîi*, which was argued to bind a CP-internal variable or trace in RCs. As there is no equivalent empty category for *thîi* to bind in NCCs, it is not clear what its function is in such cases.

In the last two sections, however, *wâa* was argued to serve as a nominalizer, and it was further argued that propositional nouns were properties of propositions, of type $\langle e,t \rangle$. We are now in a position to understand why *thîi* is necessary before NCCs: propositional nouns cannot combine directly with a nominalized
proposition, such as those headed by *wāa, as this would produce an expression of type ⟨t⟩:

(43) a. *khwaam-khít wāa khruu khuan tii dèk
    idea COMP teacher should hit child

b. *

Without thīi, the NCC would saturate the propositional noun, resulting in an anomalous noun phrase of type ⟨t⟩. Instead, NCCs and propositional nouns must compose via Predicate Modification, the semantic rule which combined RCs with their head in section 2 (cf. Moulton 2009, p. 28). This is where thīi comes in.

Before RCs, thīi abstracts a property over the trace of the relative head. In NCCs, thīi must produce a property based on the content of the proposition itself. Following Potts (2002, ex. 41), I take these latter cases to require the application of IDENT, which a rule which derives predicates from arguments (Partee 1986). The definition of IDENT is given below:

(44) IDENT(x) = λy[y = x]

This analysis can incorporate Adger and Ramchand’s [I:] features used for RCs. Assume that the two pieces of IDENT are split two pieces: thīi is [I : dep], as before, while wāa itself bears [I : ] which must be valued by Agree. When wāa receives the [I : dep] feature, the Force node must introduce a variable, which is bound by thīi due to its [Λ] feature. It is striking that the effect of this rule is semantically identical to Trace Conversion.

When IDENT applies to the propositional individual, we get the right result, a complex predicate of type ⟨e,t⟩ which can be combined with the propositional noun by Predicate Modification (=PM). Below a partial interpretation of (42) under this analysis is provided:
In the output of this derivation, the NP as a whole has the same type as the propositional noun, type $\langle e,t \rangle$. An alternative implementation would be to simply allow $\text{th} \ddot{i}i$ in NCCs to be interpreted as $\text{IDENT}$ when there is no variable available in its complement.

The benefit of this account is that it explains why $\text{w} \ddot{a}a$ is absent in RCs. Because $\text{w} \ddot{a}a$ semantically ‘seals off’ the clause below it as a reified proposition, the presence of $\text{w} \ddot{a}a$ in RCs would block the ability of $\text{th} \ddot{i}i$ to abstract a predicate over one of the arguments of its complement.\(^{23}\)

### 3.5 The ordering restriction on NCCs and relatives

In section 3.1, NCCs were shown to obligatorily follow RCs in Thai. This is unexpected under the analysis above, as NCCs and RCs are both adjuncts, and both have the same category and interpretation with respect to the head noun. Another related problem is that NCCs and RCs clauses cannot be coordinated, as shown by the following example:

\(^{23}\)An anonymous reviewer has pointed out that the nominalizers $\text{khwaam}$ and $\text{kaan}$, introduced in section 3.1, can function directly as the heads of apparent NCCs, though these cases do not involve the complementizer $\text{waa}$:

\[(46)\]

```plaintext
a. kaan $\text{th} \ddot{i}i$ kh\text{w}aam laa$\ddot{a}$ok tham-h\text{\acute{a}}j phuan $\ddot{n}$\text{\`o}$
\text{KAAN TH} \ddot{i}i 3P \text{quit cause friend confused}$
   \text{‘That he quit confused his friends.’}$

b. khwaam $\text{th} \ddot{i}i$ kh\text{w}aam h\text{\`o}$ tham-h\text{\acute{a}}j phuan $\ddot{n}$\text{\`o}$
\text{KHWAAM TH} \ddot{i}i 3P \text{hungry cause friend confused}$
   \text{‘That he was hungry confused his friends.’}$
```

As $\text{kaan}$ is the nominalizer for events and $\text{khwaam}$ for states, in (46) the two nominalizers occur before eventive and stative clauses, respectively. This indicates that in these cases $\text{th} \ddot{i}i$ might not be abstracting over the proposition or an argument, but rather over the event or state variable inside each clause. Such an analysis is suggested by Cheng and Sybesma (2006) for related facts in Chinese.
The analysis above incorrectly predicts that this coordination should be grammatical because both RCs and NCCs are CPs headed by *thii.*

Another difference between NCCs and RCs is that only the latter can be stacked:

(48) a. *chˇ an maj chˇ op [NP mˇ aa [CP thii dˇ ek tii ] [CP thii hˇ aw mˇ ak]]
   chˇ an maj chˇ op [NP mˇ aa [CP thii dˇ ek tii ] [CP thii hˇ aw mˇ ak]]
   I don’t like dogs that children hit that bark a lot.
   I don’t like dogs that children hit that bark a lot.

   b. *chˇ an maj chˇ op [NP khˇ aaw-liii [NCC thii wˇ aa Nit cˇ a [laa?ok cˇ aak ˇ yaan ]] [NCC
   thii wˇ aa Nit cˇ a [laa?ok cˇ aak ˇ yaan ]]
   thii wˇ aa Nit cˇ a [laa?ok cˇ aak ˇ yaan ]]
   thii comp 3p prosp resign from work
   thii comp 3p prosp resign from work

Again, this is unexpected if NCCs are adjuncts, which generally allow recursion. To summarize, then, NCCs must occur inside of RCs, they cannot be coordinated with RCs, and NCCs cannot iterate, all contrary to the predictions of the analysis above which takes NCCs to be adjuncts.

I propose that these restrictions on NCCs are due to a semantic constraint which states that restrictive modification must be informative. For example, the ability of RCs to iterate is rooted in the recursive definition of Predicate Modification, which takes two properties and returns a complex property. Unlike RCs, however, NCCs are distinct from RCs because they require the application of IDENT, which produces properties which uniquely identify one individual. This accounts for the unacceptability of NCC recursion, which produces truth conditions requiring different propositions to be identical:

(49) a. $\lambda x [\text{dog}(x) \land \text{hit}(\text{child}, x) \land \text{barks}(x)]$
   $\lambda x [\text{dog}(x) \land \text{hit}(\text{child}, x) \land \text{barks}(x)]$

   b. *$\lambda x [\text{idea}(x) \land x = [\text{NIT-WILL-MOVE}] \land x = [\text{NIT-WILL-RESIGN}]]$
   *$\lambda x [\text{idea}(x) \land x = [\text{NIT-WILL-MOVE}] \land x = [\text{NIT-WILL-RESIGN}]]$

The truth conditions in (49-b), resulting from multiple NCCs, infelicitously identifies the relevant “rumor” with two separate propositional individuals, due to multiple applications of IDENT. No such problem is encountered in (49-a), however, as there is no conflict in a dog having both properties denoted by the two RCs.

With this restriction in mind, I attribute the restriction on ordering RCs before NCCs to semantics; RCs combine with nouns before NCCs because restrictive modification must be informative. After the NCC combines with the head noun, the relevant proposition has been identified, further modification is no longer informative. This amounts to an appeal against applying Predicate Modification to a singleton sets. In other words, specification must occur higher in the structure than restriction.24

Evidence that modification must be informative comes from the strangeness of modifying properties that are already unique:

(50) a. #The president that lives in the White House
   #The president that lives in the White House

   b. #My nose that is on my face
   #My nose that is on my face

Both noun phrases above only make sense in contexts with multiple presidents or noses. NCCs do not allow this pragmatic rescuing because the NCC serves to associate the NCC with a particular propositional individual.
In summary, the analysis of \textit{thiï} as an operator introduced in the analysis of RCs can be extended to NCCs, with \textit{thiï} shifting an argumental CP into a property via IDENT. The purpose of \textit{thiï} in both NCCs and RCs is to abstract a predicate from a clause, thereby allowing the clause to be composed with the noun by Predicate Modification.

4. Other Environments for \textit{Thiï}

In this section the analysis proposed for \textit{thiï} in the last two sections is shown to account for the use of \textit{thiï} in three environments which do not obviously resemble RCs and noun complement clauses: verb-complements, contrastive specification clefts, and infinitives.

4.1 Verb complement clauses with \textit{thiï}

Ekniyom (1982) observes that certain verbs can take complements headed either by \textit{thiï} or \textit{wâa}:

\begin{enumerate}
\item a. jàaj khan nán chūa wâa sâamii mây khâaj nŏokcæj kæÆ lœaj woman CLF that believe COMP husband NEG PRF cheat 3P at-all
\end{enumerate}

\‘That woman believes in the notion that her husband never cheats behind her back.’

\begin{enumerate}
\item b. jàaj khan nán chūa thii sâamii mây khâaj nŏokcæj kæÆ lœaj woman CLF that believe THII husband NEG PRF cheat 3P at-all
\end{enumerate}

\‘That woman believes in the fact that her husband never cheats behind her back.’ (Ekniyom 1982, p. 74)

The glosses indicate the different interpretations corresponding to the choice of complementizer: the clause introduced by \textit{thiï} presupposes the truth of the embedded clause while those introduced by \textit{wâa} do not. In their classic analysis of factive clauses, Kiparsky and Kiparsky (1970) conjecture that the difference between factive and non-factive complement clauses should be reduced to the presence of a null nominal head in factives. Adopting a null nominal head to explain factivity in (51-b) is appealing, as \textit{thiï} has been shown to occur more generally in noun phrase internal clausal modifiers.

Supporting evidence for this analysis comes from the fact that the \textit{thiï} complement in (51-b) can be followed by \textit{wâa} and preceded by the noun \textit{râaj ‘story, matter’ with no change in meaning}:

\begin{enumerate}
\item a. jàaj khan nán chūa râaj thiï wâa sâamii mây khâaj nŏokcæj kæÆ lœaj woman CLF that believe matter THII COMP husband NEG PRF cheat 3P at-all
\end{enumerate}

\‘That woman believes in the fact that her husband never cheats behind her back.’

Thus, the factivity of verbal complements introduced by \textit{thiï} can be attributed to their status as concealed NCCs. The trigger for the factive presupposition is the noun \textit{râaj}, whose presence, even if covert, necessitates the inclusion of \textit{thiï}.\textsuperscript{25}

4.2 Contrastive clefts

Ruangjaroon (2005, ch. 4) examines the structure and interpretation of contrastive clefts in Thai:

\textsuperscript{25}Alternatively, Haegeman and Uröåådi (2010) argue that factive clauses are referential clauses which involve the movement of some operator to clause initial position. The Thai facts above could be transparently mapped onto this proposal, if \textit{râaj} was such an operator whose movement was triggered by the presence of \textit{thiï}.
At first glance, thii is functioning as a relative complementizer in these sentences as expected: it is followed by a gap, and this gap is associated with the nominal preceding thii. However, if thii introduces a RC, and everything following thii is part of the RC, these sentences lack a main predicate altogether.

Ruangjaroon convincingly demonstrates that examples such as (53-b) are not cases of overt wh-movement. Ruangjaroon carefully illustrates that the information structural properties of (53) involve contrastive focus. First, (53) is associated with an existential presupposition, that is, it is associated with the presupposition ‘someone broke the plate’. Second, the sentences in (53) are associated with a uniqueness presupposition: there is only one person that broke the plate. Last, the initial noun phrase must be focused in such examples.

In the structure provided by Ruangjaroon, pen functions as a main predicate, while Nik thii or khraj thii is its subject. She claims that thii in these examples functions as a definite marker, given that uniqueness is a property of definiteness. In this analysis, the examples in (52) are seen as simple predicational copular sentences.

There are several problems with this analysis. First, it is not clear why these clauses should be associated with focus on the subject, as the subject of predicational copular clauses are not usually focused. Second, as I take these sentences to be clefts, the absence of a RC is unexpected. The analysis of thii as a definiteness marker introduces more complications. First, the noun phrases *Nik thii and *khraj thii are meaningless in isolation. Neither can thii appear with common nouns, e.g. *maa thii ‘dog’. It is not even clear that thii forms a constituent with the preceding noun in these examples. Last, it is strange that a definite marker would occur with both a proper noun, which is inherently definite, and a wh-expression, an indefinite pronoun.

Rather than pursuing Ruangjaroon’s analysis further, I adopt the proposal of Ekniyom (1982) which retains the analysis of thii as a relative complementizer as well as providing an account for the focus on the subject. Ekniyom proposes that the contrastive clefts in (53) are inverted specificational pseudoclefts, with an initial copula, the specificational khii, deleted.

Ekniyom (1982) provides three arguments for this analysis. First, contrastive clefts can be preceded by the specificational copula khii, though it is often omitted:

\[(54) \text{(khii) phuiuyij khon n}i \text{ gjal}a? \text{ thii ch}uaJ \text{ phajaabaan phom.} \]
\[\text{SPEC woman CLF this FOC THII help take-care I} \]
\[\text{‘It is this lady who took care of me.’ (Ekniyom 1982, p. 141-2)} \]

Note that in Ekniyom’s examples there is an overt focus marker following the initial noun phrase. These markers are also optional; the noun phrases they attach to are interpreted with focus in these examples regardless of whether the focus markers are present.

The second piece of evidence that this construction is an inverted specificational copular sentence is that (54) can be negated. The negated counterpart of khii, which is maj chaj ‘not correct’, occurs sentence-initially:26

\[26\text{The specificational copula khii cannot occur under the scope of negation. See Chiravate (1999) for more on the polarity sensitivity of Thai copula.}\]
Last, the sentences in (54) and (55) can occur as pseudoclefts in a standard SVO order where the copula are also obligatory:

\[(56) \text{ a. } \text{THII help take-care 1P.SG SPEC woman CLF this FOC} \]
\[\quad \text{'(The person) who helped take care of me is this lady.'} \]
\[\text{b. } \text{THII help take-care 1P.SG NEG correct woman CLF this FOC} \]
\[\quad \text{'It is not this lady who helped take care of me.'} \]

(Ekniyom 1982, p. 141)

In these sentences, the subject is a headless RC, which were argued in section 2.4 to involve a deleted head. To account for the optionality of *kh11* when it occurs initially, Ekniyom proposes an optional rule of ‘Initial Identificational Copula Deletion.’

In sum, the surprising distribution of *thiī* in contrastive clefts and the apparent absence of a main predicate can both be explained by Ekniyom’s proposal: these sentences are inverted specificational pseudocleft with a deleted specificational copula. Under this analysis, the analysis of *thiī* as a relative complementizer can be retained.

### 4.3 Infinitives as properties

In addition to occurring in factive complements of verbs and contrastive clefts, *thiī* also occurs before infinitival clauses, both infinitival RCs such as (57-a) and infinitival complements of control verbs such as (57-b):

\[(57) \text{ a. Nit mii nāngsī thiī că? ?āan lēew} \]
\[\quad \text{Nit has book THII PROSP read already} \]
\[\quad \text{‘Nit already has a book to read.’} \]
\[\text{b. Nit jāak thiī că? tham kaanbāan} \]
\[\quad \text{Nit want THII PROSP do homework} \]
\[\quad \text{‘Nit wants to do her homework.’} \]

I will not discuss infinitival relatives such as (57-a) in any detail, as it is clear that the analysis of *thiī* as a relative complementizer can be straightforwardly extended to these examples: the head noun *nāngsī* ‘book’ is identified as the object of the infinitival relative, which is abstracted over by *thiī*. The control complement in (57-b) is more difficult to account for, however, as control complements are clausal arguments, rather than nominal modifiers.

Singhapreecha (2010) proposes an analysis of control complements such as (57-b) inspired by Kayne (2000)’s analysis of the Italian prepositional complementizer *di*. She proposes that *thiī* is base-generated in a projection above the main predicate *jāak* ‘want’ and triggers movement of an IP headed by the prospective/irrealis marker *cā?* to its specifier position. Then, *thiī* moves to a higher projection, Modal(Irrealis)P, where it triggers movement of the remnant VP to its specifier:
This proposal is puzzling for two reasons. First, as thii is not a verbal head marking aspect or modality, it is not clear why it occupies a head position between the verb head and a modal head. Second, it is not clear why the M(Irrealis)P is associated with thii, and is the highest functional head in the matrix clause, given 1) that the clear locus of the irrealis meaning in this sentence is the embedded clause, and 2) the clear reflex of this meaning is the prospective marker cāʔ, which occurs in the embedded clause.

Under the view of thii as a relative complementizer, infinitival complements of control verbs can be analyzed without these complications. Following the analysis of control in Chierchia (1984, ch. 3), control complements can be viewed as nominalized properties. Unlike in Chierchia’s analysis, where control complements are analyzed as simple VPs, we can analyze these complements as full CPs, headed by thii, and with the caseless, subject oriented null category PRO base-generated in subject position:

PRO is bound by thii, resulting in a property. For Chierchia, this property must then be nominalized to derive an individual-typed element which can function as the complement of the control verb. I leave the implementation of this part of the analysis to further work.
In conjunction with the analysis of thii-less relatives in section 2.5, the proposal above can account for the observation by Jenks (2006) that thii is optional in control complements of verbs. This is because control clauses may also occur as ‘reduced’ VP properties with an unsaturated subject argument as in Chierchia’s original proposal.

In conclusion, the analysis of thii as a relative complementizer can be maintained whenever it precedes a clause, whether it is finite or infinitival. In all of these environments, thii derives a clausal predicate, allowing the clause either to semantically combine with the head noun, in RCs and noun-complement clauses, or to satisfy the selectional requirements of a control verb.

5. Against Thii as a Marker of Predicate Inversion

Den Dikken and Singhapreecha (2004, DS) argue for a radically different approach to the syntax of thii. In a comparative study of French and Thai noun phrases, DS examine instances of direct and indirect modification of nouns by adjectives in both languages:

(60) a. une pizza chaude
    a-FEM pizza hot-FEM
    b. une pizza de chaude
      a-FEM pizza DE hot-FEM
      Both: ‘a hot pizza’

(French, DS ex. 2)

(61) a. dék kéeŋ
    child smart
    b. dék thii kéeŋ
       child THII smart
       Both: ‘the/a smart child’

(Thai, cf. DS ex. 3)

DS propose that (61-b) and (60-b) involve predicate inversion (PI), a focus-related A-movement operation. For the examples above, they argue that the particle intervening between the noun and adjective is a LINKER, a syntactic pivot for PI. Another similarity is indicated in the interpretation: both (61-b) and (60-b) can be interpreted with contrastive focus on the adjective (though see below for the optionality of this interpretation for Thai).

While DS acknowledge the occurrence of thii before subject RCs (1) and noun-complement clauses (2), they take this distribution to be an argument for their analysis, especially in light of the presence of waa in NCCs. They argue that both environments involve PI. Yet we have seen that thii is generally obligatory in both of these constructions; it is puzzling why an information-structurally driven operation such as PI would be obligatory. In the two following subsections I will show that the PI-based analysis is also problematic because of its assumptions about Thai noun phrase structure and because of the general distribution of thii. Instead, the occurrence of thii before adjectives as in (61) can be reduced to an instance of a subject RCs.

5.1 Problems with the derivation

Predicate Inversion was proposed to account for specificational copular sentences (Moro 1997), and has been argued to occur within DPs as well (den Dikken 1998). In the constructions for which PI has been proposed, semantic predicates appear in the surface position that subjects usually occupy, a property which serves as a basic diagnostic for PI.

However, in the putative examples of PI in (60-b) and (61-b), the subject (noun) and predicate (adjective) occur in their canonical order. To maintain a PI-based account, DS posit an additional movement operation which applies after PI, reinstating the original order. The arguments for their analysis are based on particular
details of Thai DP syntax, then extended to French. The remainder of this section will argue that the analysis is untenable for Thai.

In the view of DS, PI\(^{27}\) begins when a LINKER, here \(thi\), merges with a small clause (62-b-i).\(^{28}\) The adjectival predicate then moves to the empty specifier position of \(thi\) (62-b-ii):

\[
\text{(62) a. } \text{dèk } thi\text{ kècëj} \\
\text{child THI talented} \\
\text{‘The/a talented child’} \\
\text{b. (i) } [FP thi [SC child talented ]] \\
\text{ (ii) } [FP talentedi [F' thi [SC child ti ]]]
\]

The output of PI is A-\(thi\)-N, which is unattested in Thai.

This analysis thus requires a further step in the derivation reinstating the original order of noun and adjective. To this end, DS claim that in Thai, multiple classifiers can occur within a single noun phrase, and that a classifier can intervene between a noun and an adjective, following Singhapreecha (2001). They provide the following example, though there are some questions about its grammaticality (see below):

\[
\text{(63) } \text{röm } (khan) jàj sàam khan nán} \\
\text{umbrella CLF big three CLF that} \\
\text{‘those three big umbrellas’} \quad \text{(DS, ex. 32)}
\]

DS claim that the classifier is in complementary distribution with \(thi\) in sentences like (62-a) (p. 20). In light of this claim they propose a null classifier is present when predicate inversion applies. Because classifiers are usually analyzed as functional heads in the extended projection of NP, the LINKER moves to Clf\(^0\) by head movement (64-a). This head-movement permits the NP to move to the specifier of the ClfP (64-b), reinstating the original order of subject and predicate:\(^{29}\)

\[
\text{(64) a. } [\text{ClfP thi}_j [FP talentedi [F' ti [SC child ti ]]]] \\
\text{b. } [\text{ClfP childk [Clf thi}_j [FP talentedi [F' ti [SC ti ti ]]]]}
\]

The motivation for each of these steps is different. While itself PI occurs because of focus on the adjective, head movement in (64-a) presumably occurs in order to provide phonological support for the classifier head. As for the uninversion in (64-b), classifiers cannot be interpreted independently of the nouns that project them, and so, DS argue, it is not surprising that the classifier and noun might need to occur locally.

However, there are several problems with the assumptions about the syntax of classifiers and \(thi\) that DS base their proposal on. The first problem is DS’s claim that the classifier and \(thi\) are in complementary distribution, contrary to fact. Examples such as (65-a), where both occur, are quite natural:

\[
\text{(65) a. } \text{dèk } \text{khon thi\text{ kècëj}} \\
\text{child CLF THI talented} \\
\text{‘the child who is talented’} \\
\text{b. } *\text{dèk } \text{khon kècëj } thi
\]

\(^{27}\)DS present the derivation of a more complex DP with two classifiers and an overt demonstrative (pp. 20-21, ex. 35a-c), which has been simplified, \textit{mutatis mutandis}, to focus only on the central component of their proposal.

\(^{28}\)This proposal is repeated in den Dikken (2006, ch. 5), where the small clause also contains a null RELATOR. The same arguments apply to both versions of this proposal.

\(^{29}\)This step involves movement of the remnant small clause in den Dikken 2006 (see fn. 28).
While *thi* can occur with a classifier, the attested word order in (65-a) is not predicted by the derivation in (64). At the same time, the ungrammatical word orders in (65-b-c) are predicted to be grammatical. The ill-formed (65-b) might be expected to result if the overt classifier blocked the head movement of *thi*. On the other hand, if *thi*-Adj is moved and left-adjoined to the classifier, the ungrammatical order in (65-c) would result. Example (65-a) could only result from rightward head-adjunction of *thi* to the classifier, prohibited by DS’s assumption of the Linear Correspondence Axiom (Kayne 1994). On the other hand, if *thi*-Adj is simply seen as a subject RC, its alternation with an adjective are simply alternate realizations of the Classifier-Modifier Construction (Jenks 2011, ch. 5).

Second, the constituency in (64) is problematic. Evidence from coordination suggests that the classifier does not form a surface constituent with *thi*-Adj. When two *thi*-Adj constituents are coordinated, the DP can be interpreted as referring to a single individual or set of individuals with a complex set of properties (66-a). Yet when two Clf-*thi*-Adj sequences are coordinated, the DP must be interpreted as referring to two separate individuals (66-b):

(66) a. d` ek [khon [thii k`eeN] leʔ [thii ruay] children CLF THII talented and THII rich  
The rich and talented child(ren)’
b. d` ek [khon thii k`eeN] leʔ (d` ek) [khon thii ruay] children CLF THII talented and child CLF THII rich  
‘The rich child(ren) and talented child(ren)’

The meaning of the second example is unchanged if the head noun is repeated in the second conjunct. This indicates that conjunction of the classifier corresponds to conjunction of the entire DP. These facts do not follow from the structures in (64), but are compatible with an analysis where *thi* forms a constituent with the adjective, as in the relative complementizer analysis.

Last, there are issues with DS’s assertion that the classifier occurring before the adjective in (63) is optional. This is only partially true. In Thai, classifiers occurring outside of quantificational environments in the Classifier-Modifier Construction (see ex. (28)) give rise to a definite singular interpretation (Jenks 2011; Piriyawiboon 2010):

(67) a. d` ek thi k`eeN  
child THII talented  
‘The/(A) child(ren) who is/are talented who are talented’
b. d` ek khon (thii) k`eeN  
child CLF THII talented  
‘The talented child’

The definite interpretation associated with the CMC only becomes evident without an overt demonstrative or quantifier which mask the effect of the classifier, as in (63). This may be why the classifier appeared optional to DS, whose examples mostly include demonstratives. The correlation between the Classifier-Modifier Construction and a definite singular interpretation for the noun phrase indicates that the classifier is not strictly optional. Jenks (2011, ch. 5) argues that such noun phrases have a completely different structure which does not involve adjunction of the RC to the noun.

A related problem is the more fundamental question about the acceptability of (63). Visonyanggoon
Visonyangoon argues that these sentences are ungrammatical in part because *classifier-adjective* sequences require that the noun phrase be interpreted as singular, as we have just seen, in conflict with the numeral. (68) is different from (63) in that in (68) the adjective is not predicative. Yet Piriyawiboon (2010, p. 107) provides a similar judgment with respect to a predicative adjective. 30

To summarize, there are at least three independent reasons to doubt whether a classifier phrase is always present in *N-thīi*-A constructions. First, classifiers can occur adjacent to thīi in a position that cannot be accounted for by the predicate inversion analysis (65-a). Second, the classifier does not form a constituent with the thīi-A unit (66). And third, an overt classifier before adjectives affects the interpretation and structure of the DP, casting doubt on an analysis which assumes that it might always be present.

5.2 The productivity of thīi

If a way around these structural issues could be found, an independent problem exists in the distribution of thīi. DS contend that thīi is restricted to quantificational environments with contrastive focus on the adjective, as has been observed for the French *N-de-A* construction. I show in this section that the Thai construction is more productive than its French counterpart, both in terms of its interpretation and its syntactic distribution.

Previous literature on the French *N-de-A* construction in (60-b) (Azoulay-Vicente 1985; Hulk and Verheugd 1994) observes that it is restricted to quantificational environments, including indefinites, wh-constructions, and focus constructions. In addition, *N-de-A* is associated with a particular information structural profile, where the adjective is discourse-given but contrastively focused.

In contrast, *N-thīi*-A does not have to occur in a quantificational environment in Thai; it is compatible with non-quantificational noun phrases including definites (69-a) (see also (67-b)) and generics (69-b):

(69) a. nā̤ŋsū phīi nā̀sōncaj lēm nī book THII interesting CLF this ‘this interesting book’
   b. tṓ́p (thīi) sūŋ hāa yāak table THII tall search difficult ‘Tall tables are hard to find.’

Thus, Thai *N-thīi*-A has a more general syntactic distribution than French *N-de-A*. This fact casts doubt on whether the two constructions share the same structure or derivation.

In addition, unlike French *N-de-A*, contrastive focus on the adjective is not a necessary condition for *N-thīi*-A. Consider the following discourse:

(70) a. tṓ́p sū́ŋ tṓ́p tua (thīi) sū́ŋ mā́y
   NAME buy table CLF THII tall YNQ
   ‘Did Oh buy the table that’s tall?’

30 The question remains why examples such as (63) are sometimes judged to be grammatical. Visonyangoon (2000, p. 70-74) demonstrates that while similar constructions are allowed, they involve cases where classifiers are used predicatively, and the class of classifiers which can be so used is limited. It might be that the predicative use of classifiers, especially with adjectives such as ‘big’ in Thai, are grammatical for some speakers.
The question establishes ‘tall table’ in the discourse. The response only differs from the question in the content of the noun, resulting in contrastive focus on ‘chair’. The adjective remains given. Still, N-thi-A is possible in the response. So we cannot conclude that the adjective must be contrastively focused for thi to occur, contrary to the claims of DS.

The ability of N-thi-A to occur in contexts with contrastive focus is on the adjective could be accommodated by the analysis of N-thi-A in Thai as a subject RC. Like many isolating languages, adjectives do not require a copula when they serve as a clausal predicate in Thai:

(71) dêk khon nì kèeŋ (mâak)
child CLF this talented very
‘This child is (very) talented.’

The absence of a copula in N-thi-A is not a problem for its status as a subject relative. As RCs are fully productive, their presence in generic and definite DPs, as well as with or without contrastive focus on the adjective, is expected. Additionally, there is intuitively greater emphasis on the adjective when it is the predicate in a RC compared to an attributive position.

In summary, all of the problems with the proposal of den Dikken and Singhapreecha (2004) discussed in this section, including the distribution of classifiers, the constituency of thi-A, and the productivity of N-thi-A, can be accounted for if thi-A is simply a subject RC. On the other hand, French N-de-A may require a different analysis due to its focus-related interpretation and distributional restrictions. But the problems with the analysis of N-thi-A in terms of predicate inversion undermine the plausibility of such an analysis for French.

6. Summary
This paper presented an analysis of the Thai particle thi as a relative complementizer which was extended to its use in noun-complement clauses, clefts, and infinitives. In all of these environments, the clause introduced by thi was argued to be interpreted as a property. Noun phrase internally, the clause must be interpreted as a property in order to modify its nominal head by Predicate Modification. With infinitival clauses, on the other hand, clausal properties are directly selected by the verb, following Chierchia (1984), making thi necessary.

Three larger questions are raised by this proposal. First, how can variation between the Thai relative complementizer and relativization systems in other languages be accommodated? Second, to what extent can the unified treatment of relative clauses and noun complement clauses be extended to other languages, or perhaps be claimed to be universal? Third, what does the Thai system reveal about the interface between syntax and semantics?

Beginning with the question of variation in relativization systems, in section 2.3, a contrast was observed between Scottish Gaelic and Irish on one hand and Thai on the other. In the former cases, relative complementizers occur both on the relative clause and any embedded clauses out of which relativization occurs. In Thai, thi only occurs in the top clause. I proposed in section 2.3 that the complementizer in Scottish Gaelic and Irish realizes the unvalued [I\[D: \] probe on C, also present in lower clauses in order to ensure successive cyclicity, while thi simply spells out the predicate-forming [A]-feature. This view can account for the fact that the same complementizers are used for relativization and for wh-questions in Irish and Scottish Gaelic (Adger and Ramchand 2005; McCloskey 1979, e.g) while thi is only used in relative clauses.
In Mandarin Chinese, the operator *de* likewise seems to be the pure realization of $[\Lambda]$ (Cheng and Sybesma 2006), while the equivalent of *wâa* is morphologically silent. Japanese and English, on the other hand, only realize C features on Fin, and have no equivalent of the $[\Lambda]$-bearing complementizers of Thai and Gaelic. This may be because *wh/[1D]-features* in these languages are generated on noun phrases themselves in these languages, as has been suggested by Adger and Ramchand (2005) for English and Aoun and Li (1993) and Tsai (1999) for Japanese.

This brings us to the second question, which is the extent to which relative clauses and NCCs might be treated on par in languages besides Thai. As noted in the introduction, Khmer, Chinese, and Korean all introduce relative clauses and NCCs with the same particle. In Mandarin Chinese, however, this “complementizer”, *de*, is also used with modifiers which are not CPs. The wider distribution for *de* indicates that it may not be categorically specified as a complementizer in the same way that *thìi* is in Thai. In Japanese, relative clauses lack a relative complementizer; only NCCs contain the complementizer *to* (Matsumoto 1988), just as *wâa* is only present in noun-complement clauses in Thai. In this same regard, in Gungbe, fact-clauses and relative clauses are introduced by the same complementizer, though they differ in the position of the definiteness marker in the noun phrase (Aboh 2005). These facts together suggest that the unified analysis I proposed for NCCs and relative clauses in Thai could be extended to many other languages.

The last issue raised by this proposal is the nature of the syntax-semantics interface. Because predicate formation is reliably realized as *thìi* in the complementizer system of Thai, syntax in this case is transparently mapped to semantics. The connection between *wâa* and argument formation provides further evidence for this tight connection. However, the discussion above regarding morphological differences in complementizer systems reveals that the connection between syntax and semantics may be obstructed by the morphological irregularities of a given language. This conclusion fits well into one of the general desiderata of contemporary syntactic theory, namely, the reduction of crosslinguistic variation to differences in the functional inventory and its morphological realization across languages.

References


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Generalized clausal modifiers


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