

## Chapter 2

### Empty Categories in Thai

In this chapter, we focus our attention on zero pronouns in Thai and we argue that these zero pronouns fall into two types: syntactic anaphors and discourse anaphors. The first type are those which can be resolved at the sentence level while the latter type are those which must be resolved at the discourse level. The present study will focus on the latter type.

#### **2.1 Empty categories in Government and Binding Theory**

This section begins with an overview of zero pronouns, i.e. empty categories in Government and Binding Theory. Principles that relate to the process of identifying antecedents for empty categories are discussed in the following order: binding theory, bounding theory, and control theory. Each principle applies to different types of empty category.

##### **2.1.1 Empty categories**

In Government and Binding Theory, an empty category (EC) is considered a gap in s-structure. A sentence contains an EC whenever it does not have a lexical item in a position that is assigned a theta-role. ECs are categorized into four types: wh-trace,

NP-trace, pro, and PRO, with respect to pronominal and anaphor<sup>6</sup> features as follows (Haegeman 1994:453):

	-anaphor	+anaphor
-pronominal	wh-trace	NP-trace
+pronominal	pro	PRO

Table 1: Inventory of empty categories

A trace is normally analyzed as a result of move-alpha.<sup>7</sup> A wh-trace is left when an argument is moved from an A-position<sup>8</sup> to an A'-position, while an NP-trace is left when an NP is moved from one A-position to another A-position. Examples of wh-traces and NP traces are shown in (9):

- (9) a. wh-trace: Whom<sub>i</sub> will Lord Emsworth invite t<sub>i</sub>?  
           (Haegeman 1994:372)  
       b. NP-trace: John<sub>i</sub> seems t<sub>i</sub> to have lost.  
           (Haegeman 1994:410)

In (9a), *whom* is moved to the specifier of CP, which is an A'-position, while in (9b), *John* is moved to the subject position, which is an A-position. When an argument is moved, a chain of movement is created. A trace and its antecedent are coindexed within the chain by the movement.

<sup>6</sup> These features are also used to categorize overt NPs into anaphors (+anaphor, -pronominal), pronominals (-anaphor,+pronominal), and names or r-expressions (-anaphor, -pronominal).

<sup>7</sup> Move-alpha is a syntactic process that moves a constituent. The movement is restricted by other principles, such as the subadjacency principle.

<sup>8</sup> A-positions refer to argument positions. On the other hand, A'-positions refer to non A-positions.

The other two empty categories, PRO and pro, are not related to move-alpha. They are base generated. PRO occurs in an ungoverned position, such as the subject of infinitive clause in English. PRO can be either A-bound or A-free. PRO in example (10a) is bound to *Poirot* (or controlled by *Poirot*) while PRO in example (10b) is free.

- (10) a. *Poirot*<sub>i</sub> is considering whether *PRO*<sub>i</sub> to abandon the investigation  
 b. *PRO*<sub>arb</sub> to abandon the investigation would be regrettable.  
 (Haegeman 1994:263)

In a governed position where it can receive a case, an empty category that is not a trace is considered a pro. 'Pro' is commonly used in some languages like Italian, Spanish, etc. Below is an example of 'pro' in Italian.

- (11) Italian: Giacomo ha detto che *pro* ha parlato  
 Giacomo has said that has spoken  
 (Haegeman 1994:451)

### 2.1.2 Binding theory

Binding theory (Chomsky 1982,1986) is a sub-theory that explains anaphoric relations between NPs in a sentence. The three principles of binding theory are:

- (12)  
 Principle-A: An anaphor (+anaphor) is bound<sup>9</sup> in its governing category.<sup>10</sup>  
 Principle-B: A pronominal (+pronominal) is free in its governing category.  
 Principle-C: An R-expression (-anaphor, -pronominal) is free.

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<sup>9</sup> A binds B if A c-command B, and they are coindexed. Binding theory refers to only A-binding. It means that A and B must be in an A-position.

<sup>10</sup> 'A governing category [of a] is a maximal projection containing both a subject and a lexical category governing a' (Chomsky 1986: 169)

The coindexing in sentences (13a-e) can be explained by these principles. In (13a), since *himself* is +anaphor, it must be bound in its governing category. Thus, *himself* must have the same index as *John*. On the other hand, in (13b), since *him* is +pronominal, it must be free. Thus, it cannot be bound to *John* and will have a different index from *John*. In (13c), principle-B prohibits *him* to be coindexed with *Peter*, but does not exclude the coindexing between *him* and *John* since *John* is not in the governing category of *him*. In (13d), *himself* is not bound within its governing category which is the embedded sentence. Thus, this sentence is ungrammatical because it violates principle-A. In (13e), *John* is not bound to *he* because principle-C prohibits *John*, which is an R-expression, to be bound in any category.

- (13) a. John<sub>1</sub> likes himself<sub>1</sub>  
       b. John<sub>1</sub> likes him<sub>\*1,2</sub>  
       c. John<sub>1</sub> believes that Peter<sub>2</sub> likes him<sub>1,3</sub>  
       d. \*John<sub>1</sub> believes that Mary<sub>2</sub> likes himself<sub>1</sub>  
       e. He<sub>1</sub> thinks that John<sub>\*1,2</sub> is lazy.

The binding theory applies not only to overt NPs but also to covert NPs, or ECs. Thus, we can conclude the following facts about ECs:

- As a result of being +anaphor, an NP-trace must observe principle-A. Thus, it is bound in the governing category.

- As a result of being +pronominal, a ‘pro’ observes principle-B. It is free in the governing category.

- Since a variable is both -pronominal and -anaphor, it observes principle-C.

Thus, it is free in all governing categories.<sup>11</sup>

- Since PRO is both +anaphor and +pronominal, it should observe both principle-A and principle-B. But it is impossible for PRO to be free and bound in the governing category simultaneously. However, the contradiction does not really occur because PRO is ungoverned (Chomsky 1986) and therefore does not have any governing category.

In sum, the binding theory provides for coindexation between NP-traces and their antecedents but it does not directly explain the coindexation of other ECs.

### 2.1.3 Bounding theory

While binding theory explains coindexation between arguments in A position (A-binding), bounding theory deals with A'-binding, in which an argument in A-position is bound to an argument in A'-position. Bounding theory relates to only one type of ECs, a wh-trace (a variable). It explains coindexation between variables and their antecedents, and the sequence of wh-movements.

- (14) a. Who<sub>1</sub> do you think [ John likes t<sub>1</sub> ]?  
 b. That report which<sub>1</sub> I filed e<sub>1</sub> without PRO reading e<sub>1</sub>  
 (Lasnik and Uriagereka 1988:78)

<sup>11</sup> A variable is A free, but it is A'-bound. See a more detailed description under the bounding theory section.

Coindexation between *who* and wh-trace in (14a) is an example of A'-binding resulting from wh-movements. In (14a), A'-binding is generated by application of wh-movement. To observe the subjacency principle<sup>12</sup>, *who* is moved to the specifier of the embedded clause first, then to the specifier of the main clause. *Who* and wh-trace receive the same index as a result of the movements.

Although A'-binding is usually a result of wh-movement, some variables are not directly related to wh-movements. An EC is considered a variable whenever it is locally A'-bound. This is shown in the example of 'parasitic gaps' in (14b). In (14b), the first EC is a result of wh-movement and is determined as a wh-trace. The second EC is not related to wh-movement because the first trace does not c-command it. Rather, it is a variable because it is locally A'-bound by *which*.

The bounding theory explains coindexation between variables and their antecedents. If there is a movement, coindexing is a direct result of the movement. Otherwise, coindexing is determined by A'-binding.

#### 2.1.4 Control theory

Control theory (Chomsky 1981, 1986) is a sub-theory that determines antecedents for PROs. PROs can be categorized into two types: obligatory control and

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<sup>12</sup> The subjacency principle limits the distance of movement so that an argument cannot move across more than one bounding node. Bounding nodes may vary across languages. Bounding nodes for English are IP and NP.

optional control. PROs which are obligatory control are bound in a sentence while PROs which are optional control are free. Control theory assigns antecedents for PROs which are obligatory control. Obligatory control can be either subject control or object control, as shown in (15a) and (15b).

- (15) a. Poirot<sub>i</sub> was eager PRO<sub>i</sub> to go on his/\*one's own.
  - b. Poirot<sub>i</sub> ordered Miss Marple<sub>j</sub> PRO<sub>j</sub> to go on her/\*his/\*one's own.
  - c. John<sub>i</sub> thought that it was important PRO<sub>i,j</sub> to behave himself/oneself.
- (Haegeman 1994:277-8)

In the infinitive clauses (15a-b) control is obligatory. PRO in (15a) is bound to the subject 'Poirot', while PRO in (15b) is bound to the object 'Miss Marple'. In (15c) control is optional: PRO can have an arbitrary interpretation.

### **2.1.5 Determining ECs and their antecedents**

The status of an EC, whether it is a wh-trace (a variable), an NP-trace, a pro, or a PRO, is functionally determined by its role in the sentence. 'An EC is a variable if it is in an A-position and is locally A'-bound. An EC in an A-position that is not a variable is an anaphor. Note that if not a variable, a pronoun is either free or locally A-bound by an antecedent with an independent  $\theta$ -role.' (Chomsky 1982:35)

Thus, if an EC is A'-bound by an element in a non-theta-position, and observes the locality condition (subjacency principle), it is a variable. If an EC is A-bound by an element in a non-theta-position and observes the subjacency principle, it is an NP-trace. If an EC receives independent theta-role, it can be either PRO or pro. Since PRO is

ungoverned, it cannot receive a case. Thus, an overt NP cannot occur in the same position as PRO because it must be governed to receive a case. Therefore, when an EC occurs in a position where a lexical item cannot be presented, it is a PRO. When an EC is not a trace or a PRO, it is a pro.

Coindexation between ECs and their antecedents can be determined by the principles discussed above. Coindexing between an NP-trace or a wh-trace and its antecedent is created directly by the movement. For a variable that does not involve move-alpha, coindexing is a result of A'-binding in the s-structure. It will get the same index as its binder. For PROs which are obligatory control, their antecedents are determined by control theory. They will receive the same index as their antecedent. On the other hand, PROs which are optional control and pros cannot be assigned antecedents directly by these principles. Principle-B of the binding theory tells us what are not antecedents of pros but not what are antecedents of pros.

In sum, antecedents of NP-traces, wh-traces, and PROs which are obligatory control can be resolved within the GB theory. PROs which are optional control and pros are left unaccounted for in sentence grammar and must be resolved at the discourse level. These are the domains of the zero pronouns in this study.



## 2.2 An overview of Thai syntax

Thai<sup>13</sup> is a member of the Tai-Kadai language family. Thai is a tone language. Morphologically, it is an isolative language. There is no morphological inflection for number, gender, tense, and agreement. Derivation is mostly compounding and reduplication (examples (16a-b)). There are only a few productive prefix-like item such as /kaan/ and /khwaam/, which are used in nominalization, as shown in (17a-b).

- (16) a. m̌ɛ nām  
           mother water  
           ‘river’  
       b. suǎaj ɲaam  
           beautiful beautiful  
           ‘beautiful’
- (17) a. kaan plɛɛ phaasǎa ʔaŋkrìt pɛn phaasǎa thaj  
           NOM translate language English be language Thai  
           ‘Translating English to Thai’  
       b. khwaam sùk  
           NOM happy  
           ‘happiness’

Thai is an SVO and head initial language. Examples (18a-b) show that modifiers usually follow heads. Thai does not apply overt wh-movement for question formation. A question is formed by ending a sentence with a question particle such as /châjmǎj/ ‘yes-or-no’, /mǎj/ ‘yes-or-no’, /rǔuplâw/ ‘yes-or-no’, or by replacing the constituent involved with a wh-word like /khraj/ ‘who’, /ʔàraj/ ‘what’, /thammaj/

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<sup>13</sup> The Thai language in this study refers to standard Thai, the official language of Thailand.

‘why’, or /jàaŋraj/ ‘how’. Examples of interrogative sentences are shown in (19a-b).

Negation is formed by adding /mâj/ ‘not’ in front of the verb. An example of a negation is shown in (19c). In addition, Thai has a serial verb construction<sup>14</sup> as shown in (20a-b).

- (18) a. năŋsǔu sǒɔŋ lêem  
book two CL  
‘two books’  
b. wīŋ cháa mâak  
run slow very  
‘run very slowly’
- (19) a. khun rák khǎw chāj mǎj  
you love him/her Q  
‘Do you love him/her?’  
b. khun paj hǎa khraj muâachǎw níi  
you go see whom morning this  
‘Whom did you see this morning?’  
c. phǒm mâj chôp khun  
I not like you  
‘I don’t like you’
- (20) a. khǎw cháai mīit tāt nuáa  
he use knife cut meat  
‘He uses a knife to cut meat’  
b. khǎw dǎen paj jíp pàakkaa  
he walk go pick pen  
‘He goes to pick up a pen’

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<sup>14</sup> Serial verb constructions are ‘constructions in which a sequence of verbs appears in what seems to be a single clause. Usually there is only one tense/aspect specification for the whole chain of verbs’ (Baker 1989:513).

### 2.3 Empty categories in Thai

In Thai, empty categories are found in relative clauses, topicalization, serial verb construction, coordination, and subordination. The purpose of this section is to identify empty categories that can be resolved within the Government and Binding Theory, and those that need to be resolved at the discourse level. But before we do that, we will show that both PRO and pro exist in Thai.

According to Pingkarawat (1989) and Hoonchamlong (1991), Thai can have both subject pro and object pro. In brief, Pingkarawat argues against Huang's position (1984) that object pros do not exist in any language. She argues that object pros do exist in Thai.<sup>15</sup> Example (21) below shows the distributions of pro and PRO in various constructions.

- (21) a. phǒm/pro kliàat tuaaʔeɛŋ luǎakəən  
           I<sub>i</sub>/pro<sub>i</sub> hate oneself<sub>i</sub> so-much  
           ‘(I) hate myself very much’  
       b. dɛɛŋ bòɔk wâa khǎw/pro maa léɛw  
           Daeng<sub>i</sub> say that he<sub>i,j</sub>/pro<sub>i,j</sub> come ASP  
           ‘Daeng<sub>i</sub> said that (he<sub>i,j</sub>) came’  
       c. dɛɛŋ bòɔk wâa dam chôp khǎw/pro  
           Daeng<sub>i</sub> say that Dam<sub>k</sub> like he<sub>i,j</sub>/pro<sub>i,j</sub>  
           ‘Daeng<sub>i</sub> said that Dam<sub>k</sub> likes (him<sub>i,j</sub>)’

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<sup>15</sup> Kameyama (1985) also argues against the subject/object asymmetry proposed by Huang (1984). She argues that zero objects in Japanese need not to be A'-bound by the topic. They can be A-bound or used as a deictic. Thus, an object pro exists not only in Thai but also in other languages like Japanese.

- d. dɛɛŋ jàak \*khǎw/PRO kin khâaw  
 Daeng<sub>i</sub> want \*he<sub>i</sub>/PRO<sub>i</sub> eat rice  
 'Daeng wants to have dinner'

ECs in (21a-c) are *pro* because they occur in a governed position. They can be interpreted in the same way as overt pronouns. They are free in the governing category. In (21a), *pro* has first person reference. In (21b-c), both *pro* and the overt pronoun /khǎw/ can refer to 'Daeng' or someone else. The EC in (21d) is a *PRO* since it occurs in an ungoverned position. Sentence (21d) would be ungrammatical if an overt pronoun were used in that position.

### 2.3.1 Sentence level empty categories

#### 2.3.1.1 Relative clauses

A relative clause in Thai is generally introduced by the complementizer /thîi/. Hoonchamlong (1991:195) analyzes a gap in a relative clause as a *pro* rather than a trace A'-bounded to the null operator. A gap then is a variable at the level of LF. But in this section we will argue that a gap (EC) in relative clauses could be a syntactic variable.

Hoonchamlong uses the subjacency violation and the absence of strong crossover in relative clauses to show that a gap in a relative clause is not a *wh*-trace. As seen in (22) below, if a gap in (22) is a result of *wh*-movement, the subjacency

principle will be violated.<sup>16</sup> In addition, example (23) indicates that strong crossover does not operate in Thai relative clauses. A gap in (23a-b) is A-bound to /khăw/. Thus, it cannot be a variable. Based on these observations, Hoonchamlong suggests that the gap is a null resumptive pronoun and that the coindexation between an EC and the head noun is done by the predication rule at the level of LF (like the coindexation of a resumptive pronoun and the head noun in English).

(22) Subjacency violation

- wan níi chǎn hǎn nákkhiǎan thîi nít bòok nóoj wâa  
 dɛɛŋ kamlaŋ ʔàan nǎŋsǔu thîi EC wícaan EC  
 day this I see [NP writer [CP COMP [IP Nit tell Noy [CP that  
 Daeng PROG read [NP book [CP COMP [IP EC criticize EC]  
 - ‘Today I saw the writer<sub>i</sub> that Nit told Noy that Daeng was reading the  
 book<sub>j</sub> that (he)<sub>i</sub> criticized EC<sub>j</sub>’  
 - ‘Today I saw the writer<sub>i</sub> that Nit told Noy that Daeng was reading the  
 book<sub>j</sub> that EC<sub>j</sub> criticized (him)<sub>i</sub>’

(Hoonchamlong 1991:187)

(23) Strong crossover

- a. khon thîi khăw bòok wâa EC chôp nít  
 person<sub>i</sub> [COMP [IP1 he<sub>i</sub> say that [IP2 EC<sub>i</sub> like Nit]]]  
 ‘the person that he said that likes Nit’  
 (the person who said that he likes Nit)  
 b. khon thîi khăw bòok wâa nít chôp EC  
 person<sub>i</sub> [COMP [IP1 he<sub>i</sub> say that [IP2 Nit like EC<sub>i</sub>]]]  
 ‘the person that he said that Nit likes ’

(Hoonchamlong 1991:202)

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<sup>16</sup> According to Hoonchamlong, Thai has the same bounding nodes as English, NP and IP.

However, we do not agree with her analysis. We think that a resumptive pronoun should be used in example (22). Otherwise, the sentence will be ungrammatical. The new analysis of this sentence is shown in (24). Subjacency is observed in this example.

(24)

- a. wan níi chǎn hěn nákkhiǎan thîi nít bòok nóoj wâa  
 dɛɛŋ kamlaŋ ʔàan nǎŋsǔu thîi \*EC/khǎw wícaan EC  
 day this I see [NP writer [CP COMP [IP Nit tell Noy [CP that  
 Daeng PROG read [NP book [CP COMP [IP \*EC/he criticize EC]  
 - ‘Today I saw the writer<sub>i</sub> that Nit told Noy that Daeng was reading the  
 book<sub>j</sub> that (he)<sub>i</sub> criticized EC<sub>j</sub>’
- b. wan níi chǎn hěn nákkhiǎan thîi nít bòok nóoj wâa  
 dɛɛŋ kamlaŋ ʔàan nǎŋsǔu thîi EC wícaan \*EC/khǎw  
 day this I see [NP writer [CP COMP [IP Nit tell Noy [CP that  
 Daeng PROG read [NP book [CP COMP [IP EC criticize \*EC/him]  
 - ‘Today I saw the writer<sub>i</sub> that Nit told Noy that Daeng was reading the  
 book<sub>j</sub> that EC<sub>j</sub> criticized (him)<sub>i</sub>’

In addition, Hoonchamlong’s example of strong crossover effect in (23) is not relevant to relative clauses. If we replace the pronoun /khǎw/ with an EC, as seen in (25a), we can analyze the second EC as a subject pro. If it is a pro, it can be bound outside its governing category. In addition, the second EC in (25a) can be replaced with the pronoun /khǎw/. Thus, only the first EC is directly related to relative clause. The second EC is not related to relative clause. The same explanation applies to (23b).

(25)

- a. khon thîi EC bòok wâa EC/khǎw chôp nít  
 person<sub>i</sub> [COMP [IP1 EC<sub>i</sub> say that [IP2 EC<sub>i</sub>/he<sub>i</sub> like Nit]]]  
 ‘the person that he said that likes Nit’

(the person who said that he likes Nit)

- b. khon thîi EC bòok wâa nít chôp EC/khăw  
 person<sub>i</sub> [COMP [IP1 EC<sub>i</sub> say that [IP2 Nit like EC<sub>i</sub>/he<sub>i</sub>]]]  
 ‘the person that he said that Nit likes’

The flaw in Hoonchamlong’s argument is similar to the flaw in an argument that resumptive pronouns do not produce strong crossover effects in examples like (26b). McClosky (1990:211-212) points out this flaw and states that when two overt pronouns are used, it is possible to analyze the first as a resumptive pronoun (a bound variable) and the second as coreferential with the first. Therefore, he proposes an epithet test for strong crossover effect by replacing a pronoun in these sentences with an epithet. When applying his epithet test to Hebrew and Thai, it can be seen that both gap and resumptive pronouns in both languages produce strong crossover effect, as shown in examples (27-28).

(26) Hebrew:

- a. \*Ze ha-baxur še- yidafti ?oto<sub>i</sub> še-ha-more yaxšil EC  
 this the-guy<sub>i</sub> that-I informed him that-the-teacher will-flunk EC<sub>i</sub>  
 ‘This is the guy that I told him that the teacher will flunk him.’  
 b. Ze ha-baxur še- yidafti ?oto<sub>i</sub> še-ha-more yaxšil ?oto<sub>i</sub>  
 this the-guy<sub>i</sub> that-I informed him that-the-teacher will-flunk him<sub>i</sub>  
 ‘This is the guy that I told him that the teacher will flunk him.’

(Shlonsky 1992:460)

(27) Hebrew:

- a. \*Ze ha-baxur še- yidafti ?et ha-?idiot še-ha-more yaxšil  
 EC  
 this the-guy<sub>i</sub> that-I informed ACC the-idiot<sub>i</sub> that-the-teacher will-flunk  
 EC<sub>i</sub>  
 ‘This is the guy that I informed the idiot that the teacher will flunk.’

- b. \*Ze ha-baxur še- yidafti ?et ha-?idiot še-ha-more yaxšil  
 ?oto  
 this the-guy<sub>i</sub> that-I informed ACC the-idiot<sub>i</sub> that-the-teacher will-flunk  
 him<sub>i</sub>  
 ‘This is the guy that I informed the idiot that the teacher will flunk.’  
 (Shlonsky 1992:460)

(28) Thai:

- a. \*nîi khuu khon thîi phǎm bǝk phǝccǝmson wâa khruu cà tîi  
 EC  
 this be man<sub>i</sub> COMP I tell the-naughty-guy<sub>i</sub> that teacher will hit EC<sub>i</sub>  
 ‘This is the guy that I informed the naughty guy that the teacher will  
 punish’
- b. \*nîi khuu khon thîi phǎm bǝk phǝccǝmson wâa khruu cà tîi  
 khǎw  
 this be man<sub>i</sub> COMP I tell the-naughty-guy<sub>i</sub> that teacher will hit him<sub>i</sub>  
 ‘This is the guy that I informed the naughty guy that the teacher will  
 punish’

As noted in Shlonsky (1992:460), there is nothing to prevent a pronoun to be coindexed with an epithet, as seen in example (29). Thus, the fact that (28) is ungrammatical indicates that both gaps and resumptive pronouns in relative clauses are subject to strong crossover.

(29) Thai:

- phǎm bǝk phǝccǝmson wâa khruu cà tîi khǎw  
 I tell the-naughty-guy<sub>i</sub> that teacher will hit him<sub>i</sub>  
 ‘I informed the naughty guy that the teacher will punish him’

Based on these arguments, ECs in Thai relative clauses can be analyzed as a syntactic variable resulting from wh-movement of an empty operator. But since wh-movement does not apply to wh-words at s-structure in Thai, it might be possible to assume that wh-movement of empty operators operates at the level of LF as well.



Whether ECs in Thai relative clauses are bound variable at the syntactic level or LF level is an open question. This issue requires further research beyond the scope of this study. For present purposes, it suffices to say that antecedents of ECs in relative clauses are always constant and do not depend on the discourse. Thus, they will not be included in this study.<sup>17</sup>

### 2.3.1.2 Topicalization and Left dislocation

In this section, we will argue that an EC in topicalization can be analyzed as a bound variable like an EC in a relative clause. According to Hoonchamlong, topicalization in Thai does not involve move-alpha. If an EC is a trace resulting from movement, it would violate the subjacency principle. In example (30), the subjacency principle will be violated if the EC is a trace. The relation between /khǎw/-EC and the antecedent TOP crosses more than one bounding node. Thus, Hoonchamlong analyzes the EC in topicalization as a covert pronoun, or *pro*, which will be bound to the topicalized NP at the LF level. In this view, the structure of topicalization is the same

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<sup>17</sup> Only zero pronouns that are coindexed with the head noun will be excluded. In a relative clause that has two zero pronouns, one of them will need to be resolved at the discourse level. For example, only EC<sub>2</sub> in the example below is bound to the head noun ‘movie’. EC<sub>1</sub> needs to be resolved by other means.

a. dɛɛŋ chɔɔp nǎŋ thîi EC<sub>1</sub> duu EC<sub>2</sub>  
 Daeng like movie COMP EC<sub>1</sub> watch EC<sub>2</sub>  
 ‘Daeng liked the movie that he watched’

as that of left-dislocation. The difference between them is a result of the difference between covert and overt pronouns.

- (30) [TOP sùdaa ná] [IP1 chǎn dâj jin [NP1 khàaw [CP wâa [IP2 cɔɔn  
phêɛŋ phaa khǎw/EC paj roonphájaabaan muâacháw níi]]]]  
Suda<sub>i</sub> TM I hear news that John just take her<sub>i</sub>/EC<sub>i</sub> go hospital  
morning this  
'Suda, I heard the news that John just took her/EC to the hospital this  
morning.'

(Hoonchamlong 1991:93)

In addition, Hoonchamlong uses the absence of strong crossover effect in example (31a) below to support that ECs in topicalized sentences are not a wh-trace. Since, the EC in (31a) can be A-bound by /khǎw/, it cannot be a syntactic variable. However, if we use the epithet test described in the previous section, it can be seen from (31b) that an EC in a topicalized sentence is sensitive to strong crossover. Thus, it behaves like a variable and it could be analyzed as a syntactic variable. Whether this analysis is appropriate for Thai is an open issue. For our present purpose, it suffices to say that antecedents of ECs in topicalized sentences are always constant. ECs in topicalization are a bound variable either at the syntactic level or LF level. Therefore, ECs in topicalized sentences will be excluded from this study.

- (31) a. [TOP khraj ná] [IP1 khǎw khít wâa [IP2 EC cháná]]  
who<sub>i</sub> TM he<sub>i</sub> think that EC<sub>i</sub> win  
'Who, he thought that won?' [sic]  
(Hoonchamlong 1991:198)  
b. \*[TOP khraj ná] [IP1 phôccɔɔmson khít wâa [IP2 EC cháná]]  
who<sub>i</sub> TM the-naughty-guy<sub>i</sub> think that EC<sub>i</sub> win  
'Who, the naughty guy thought that won?' [sic]

### 2.3.1.3 Serial verb constructions

Serial verb constructions usually contain fewer overt NPs than the number of arguments subcategorized by all the verbs in the construction. Missing arguments can be analyzed in at least two ways: they may be analyzed as shared arguments, or they may be analyzed as ECs that are coindexed with overt NPs. Section 2.3.1.3.1 deals with the first analysis while section 2.3.1.3.2 deals with the latter.

#### 2.3.1.3.1 Object sharing

According to Baker (1989), serial verb constructions may not contain an EC. Rather, overt NPs in the sentence are shared by different verbs. For example, *Amba* in (32a) is an internal argument of both *naki* and *kiri*. It receives the theta-role Theme from both verbs<sup>18</sup>, while *Kofi* receives the theta-role Agent from both verbs. The structure of this sentence is represented in (32b).

- (32) a. Sranan:    Kofi naki Amba kiri  
                   Kofi hit    Amba kill  
                   ‘Kofi struck Amba dead.’                    (Baker 1989:516)  
       b. [CP Kofi [IP [VP [V’ [V<sub>1</sub> naki] [NP<sub>1</sub> Amba] [V’ [V<sub>2</sub> Kiri]]]]]]]

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<sup>18</sup> This analysis requires a modification of the theta-theory so that an argument can receive more than one theta-role in certain conditions. According to Baker (1989:521), ‘Most current versions [of theta-theory] allow an argument to receive more than one  $\theta$ -role as long as all its  $\theta$ -roles are assigned to the same structural position.’

Serial verb constructions in Thai can be analyzed in a similar way. Examples of a sentence where the second verb is transitive are shown in (33a-b).

- (33) a. [CP khǎw [IP[VP[V' [V<sub>1</sub> wâat] [NP<sub>1</sub> rûup] [V' [V<sub>2</sub> khǎaj]] ]]]]  
           he                    paint      picture      sell  
           ‘He paints a picture to sell it’  
   b. [CP khǎw [IP[VP[V' [V<sub>1</sub> cháj] [NP<sub>1</sub> mîit] [V' [V<sub>2</sub> tàt] [NP<sub>2</sub> nuáa]]]]]]]  
           he                    use      knife      cut      meat  
           ‘He uses a knife to cut meat’  
   c. [CP dam [IP [VP [V' [V<sub>1</sub> tii] [NP<sub>1</sub> ɲuu] [V' [V<sub>2</sub> taaj]] ]]]]  
           Dam                    hit      snake      die  
           ‘Dam hits a snake dead’  
   d. [CP khǎw [IP[VP[V' [V' [V<sub>1</sub> kin] [NP<sub>1</sub> khâaw]] [V' [V<sub>2</sub> ɣim]] ]]]]  
           he                            eat      rice          full  
           ‘He ate rice and became full’

Example (33b) has the same structure as (33a), except that the second verb in (33b) subcategorizes for one more NP. In (33a), /rûup/ receives the theta-role Theme from both /wâat/ and /khǎaj/, and both verbs assign the external theta-role Agent to /khǎw/. In (33b), /mîit/ receives the theta-role Theme from /cháj/ and the theta-role Instrument from /tàt/, while /nuáa/ gets the theta-role theme from /tàt/, and both verbs assign the theta-role agent to /khǎw/. Unlike (33a-b), (33c) is an example in which the second verb is an intransitive verb. /dam/ receives only one theta-role from /tii/ while /ɲuu/ receives two theta-roles from /tii/ and from /taaj/.

Examples (33a-c) above illustrate object sharing in serial verb constructions. However, serial verb constructions do not necessarily involve object sharing. For



## 2.3.2 Discourse level empty categories

### 2.3.2.1 Coordination

Within the framework of the Government and Binding Theory, coordination is usually analyzed as involving conjoined structures. In English, Van Valin (1986) proposes conjoined IPs and conjoined VPs as the structure of coordination. His argument is based on the fact that different tenses can be present in each of the conjuncts. As seen in (35a), the first and the second conjunct have different I. In Van Valin's view, while coordination in (35b) can be analyzed as conjoined VPs, coordination in (35a) must be analyzed as conjoined IPs. For coordination with quantified NPs, as in (36a), it must be analyzed as conjoined VPs because it does not have the same meaning as (36b). In addition, Van Valin states that tense variation is not allowed in coordination with quantified NPs, as shown in (36c)

(35) a. John talked to Mary today and will ask her for a date tomorrow.

b. John talked to Mary and asked her for a date.

(Van Valin 1986:581)

(36) a. Few men left early yesterday and reached Santa Fe in the evening.

b. Few men left early yesterday and they reached Santa Fe in the evening.

c. \*Few men left early yesterday and will reach Santa Fe in the evening.

(Van Valin 1986:582)

However, Godard (1989) argues against Van Valin's analysis. She points that sentences with quantified NPs can have different I, as shown in (37a). Thus, (37a) cannot be analyzed as involving conjoined VPs. In addition, if they are analyzed as

conjoined IPs, the EC in the second clause will not be c-commanded by the quantified NP. A sentence in which a pronoun is c-commanded by the quantified NP has a meaning different from a sentence in which a pronouns is not c-commanded by the quantified NP. For example, if there is an EC in (37c), it would not be c-commanded by the quantified NP. Thus, it should have the same meaning as (37b). But the two sentences have different meanings. *They* in (37b) refer to the referent that satisfies the first predicate while the EC in (37c) (if there is one) would refer to the same argument of the first predicate.<sup>19</sup> Thus, (37b) entails that all students who read this book remember it well, while (37c) does not. Therefore, Godard argues that conjoined I's must be involved instead of conjoined VPs in sentence (37a). In addition, sentence (35a) can also be analyzed as conjoined I's. Thus, there is no EC(pro) in coordination.

- (37) a. Every student left early this evening and must be in his (or her) respectively home by now.  
b. Few students have read this book, but, if so, they remember it well.  
c. Few students have read this book and remember it well.  
(Godard 1989:501)

<sup>19</sup> Godard's argument is based on the distinction between bound pronouns and E-type pronouns discussed in Evans (1980). Evan's examples of this distinction are as follows:

- Few congressmen admire only the people they know.
- Few congressmen admire Kennedy, and they are very junior.

The pronoun in (a) is bound by the quantified NP, *few congressmen*. But the pronoun in (b) is not bound by the quantified NP. Its meaning could not be analyzed as 'Few congressmen(x) [admire Kennedy(x) & are very junior(x)]. Rather, (b) entails that few congressmen admire Kennedy and all the congressmen who admire Kennedy are very junior.

Though coordination in English may involve conjoined I's, coordination in Thai cannot be analyzed in the same way. We argue that coordination in Thai should be analyzed as either conjoined VPs or conjoined IPs. Coordinations in sentences with quantified NPs would be analyzed as conjoined VPs for the same reason as coordinations with quantified NPs in English. In these coordinations, the subject of the second conjunct is always the same as the first conjunct. On the other hand, other coordinations could be analyzed as conjoined IPs because the subject of the second conjunct is not necessarily the same as the subject of the first conjunct. It can be seen from examples (38b) and (39b) that the EC of the second conjunct is not bound to the subject of the first conjunct, /pràchaachon/-'people'. But it refers to the referent of /khroonkaan/-'project'. In (40), the EC of the second conjunct does not refer to 'Daeng', which is the subject of the first conjunct, but rather to 'Dam'. These examples indicate that the coordination in Thai may involve conjoined IPs, and the coreference of the EC cannot always be determined at the syntactic level.

- (38) a. khǎw cà sà̀nàpsà̀nũn khroonkaan níi  
           he will support project<sub>i</sub> this  
       b. kòtòomũaa pràchaachon chòp EC lé EC māj pən ʔantàraaj  
           tòò pràchaachon  
           only-if people like EC<sub>i</sub> and EC<sub>i</sub> not be danger to people  
           'He will support this project only if people like it and it is not  
           dangerous to the people.'
- (39) a. khroonkaan níi rátthàbaan sà̀nəə maa phuāa kēe panhāa  
           caaraacoon  
           project<sub>i</sub> this government propose ASP for solve problem traffic



‘This project, the government proposes it to solve the traffic problem.’

- b. tèc najthîisùt pràchaachon kò māj joomráp lé EC jaŋ pən  
 sǎahèet hāj rátthàbaan tèekjêek  
 but finally people then not accept and EC<sub>i</sub> in-addition be cause give  
 government break  
 ‘But finally, people do not accept it and it causes a problem within  
 the government.’

- (40) a. lécw dam nǐi paj dāj māj  
 then Dam escape go ASP Q  
 ‘Then, could Dam escape?’

- b. dāj dɛɛŋ cǎp dam mát wáj tèc najthîisùt EC kò nǐi paj dāj  
 can Daeng grasp Dam<sub>i</sub> tie ASP but finally EC<sub>i</sub> then escape go ASP  
 ‘Yes. Daeng tied Dam, but (he) finally escaped.’

The analysis of Thai coordination above is strengthened by the fact that Thai does not observe the asymmetry of Across-The-Board (ATB) extraction<sup>20</sup> like English. While some of the English sentences in (41) are ungrammatical, the equivalent sentences in Thai given in, (42), are all grammatical. The coordinations in (41a), (41c), (41d), (41e), and (41f) cannot be analyzed as conjoined I’s because the subjects of both conjuncts are not coreferential. Examples (41c), (41d) and (41f) are ungrammatical because one trace is A-bound by another trace (violation of principle-C). But in Thai, all the sentences in (42) are grammatical. Coordination in these examples must be analyzed as conjoined IPs and the ECs in these sentences are pro. Since the referents of

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<sup>20</sup> William (1978) points to the asymmetries in ATB extraction in English. Extraction is possible only when the movement is from the same position or from non-matrix subject position.

these ECs cannot always be determined at the syntactic level, these ECs will be included in this study.

- (41) a. This is the man who John saw \_ and Mary kissed \_  
 b. This is the man who \_ saw John and \_ kissed Mary.  
 c. \*This is the man who John saw \_ and \_ kissed Mary.  
 d. \*?This is the man who \_ kissed Mary and John saw \_.  
 e. This is the man who John saw \_ and Mary thinks \_ is handsome.  
 f. \*?This is the man who \_ saw John and Mary thinks \_ is handsome.

(Goodall 1987:68-69)

- (42) a. *nîi khuu khon thîi coon hên EC lé mæɾîi cùup EC*  
 this be man<sub>i</sub> COMP John see EC<sub>i</sub> and Mary kiss EC<sub>i</sub>  
 b. *nîi khuu khon thîi EC hên coon lé EC cùup mæɾîi*  
 this be man<sub>i</sub> COMP EC<sub>i</sub> see John and EC<sub>i</sub> kiss Mary  
 c. *nîi khuu khon thîi coon hên EC lé EC cùup mæɾîi*  
 this be man<sub>i</sub> COMP John see EC<sub>i</sub> and EC<sub>i</sub> kiss Mary  
 d. *nîi khuu khon thîi EC cùup mæɾîi lé coon hên EC*  
 this be man<sub>i</sub> COMP EC<sub>i</sub> kiss Mary and John see EC<sub>i</sub>  
 e. *nîi khuu khon thîi coon hên EC lé mæɾîi khít wâa EC lòo*  
 this be man<sub>i</sub> COMP John see EC<sub>i</sub> and Mary think COMP EC<sub>i</sub>  
 handsome  
 f. *nîi khuu khon thîi EC hên coon lé mæɾîi khít wâa EC lòo*  
 this be man<sub>i</sub> COMP EC<sub>i</sub> see John and Mary think COMP EC<sub>i</sub>  
 handsome

### 2.3.2.2 Subordination

Like coordination, ECs in subordination are pro and their antecedents cannot always be determined at the syntactic level. Consider examples (43-46). An EC is in the main clause in (43b) and (44b), but is in the subordinate clause in (45b) and (46b). In these examples, an overt pronoun can be used in the same position as the EC. Thus, that position is governed and assigned a case, and the EC in these sentences is a pro.

- (43) a. dam kamlaŋ siăacaj mâak  
 Dam<sub>i</sub> PROG be-sad very  
 ‘Dam is very sad now.’  
 b. thâa dɛɛŋ paj hăa dam thîi bân khăw/EC kô khonçà  
 sàbaajcaj khûn  
 if Daeng<sub>j</sub> go find Dam<sub>i</sub> at home he<sub>i</sub>/EC<sub>i</sub> then may be-happy ASP  
 ‘If Daeng comes to see Dam at home, he(Dam) will be more happy.’
- (44) a. dɛɛŋ kamlaŋ siăacaj mâak  
 Daeng<sub>i</sub> PROG be-sad very  
 ‘Daeng is very sad now.’  
 b. thâa dɛɛŋ paj hăa dam thîi bân khăw/EC kô khonçà  
 sàbaajcaj khûn  
 if Daeng<sub>i</sub> go find Dam<sub>j</sub> at home he<sub>i</sub>/EC<sub>i</sub> then may be-happy ASP  
 ‘If Daeng comes to see Dam at home, he(Daeng) will be more happy.’
- (45) a. dɛɛŋ hâj dam paj bôok nóonçhaaj wâa dɛɛŋ khítthûŋ khăw  
 Daeng<sub>i</sub> give Dam<sub>j</sub> go tell brother<sub>k</sub> that Daeng<sub>i</sub> thinking-of him<sub>k</sub>  
 ‘Daeng asked Dam to tell his brother that he is thinking of him.’  
 b. dɛɛŋ khonçà tamnî dam thâa khăw/EC jaŋ mâj maa hăa dɛɛŋ  
 phaajnaj sàpdaa níi  
 Daeng<sub>i</sub> may blame Dam<sub>j</sub> if he<sub>k</sub>/EC<sub>k</sub> still not come find Daeng<sub>i</sub> within  
 week this  
 ‘Daeng may blame Dam if his brother does not come to see him  
 (Daeng) within this week.’
- (46) a. dɛɛŋ bôn wâa khăw khítthûŋ dam  
 Daeng<sub>i</sub> complain that he<sub>i</sub> thinking-of Dam<sub>j</sub>  
 ‘Daeng complains that he is thinking of Dam.’  
 b. dɛɛŋ khonçà tamnî dam thâa khăw/EC jaŋ mâj maa hăa dɛɛŋ  
 phaajnaj sàpdaa níi  
 Daeng<sub>i</sub> may blame Dam<sub>j</sub> if he<sub>j</sub>/EC<sub>j</sub> still not come find Daeng<sub>i</sub> within  
 week this  
 ‘Daeng may blame Dam if he(Dam) does not come to see him(Daeng)  
 within this week.’

The antecedent of EC in the same sentence, (43b) and (44b), depends on the context. The EC in (43b) refers to ‘Dam’ while the EC in (44b) refers to ‘Daeng’.

Examples (45) and (46) indicate the same fact. The antecedent of EC in the same sentence, (45b) and (46b), depends on the context. The EC in (45b) refers to ‘Daeng’s brother’ while the EC in (46b) refers to ‘Dam’.

Examples above suggest that antecedents of ECs in subordination cannot always be determined at the sentence level. They depend on the discourse context. Therefore, ECs in subordination will be included in this study.

## **2.4 Conclusion**

In this chapter, we have described relevant phenomena in Thai syntax and reviewed various constructions which contain a zero pronoun. We can conclude that coreferences of ECs in relative clauses, topicalization, and serial verb constructions are always constant and can be resolved based on the principles available within the Government and Binding Theory. But ECs in coordination and subordination cannot be resolved at the sentence level. These ECs will be the concern of this study. Only these ECs in our corpus will be studied in detail.