Restructuring and Movement Analysis of Thai Object Control

Rotsuprit Saengthong
University of Kansas

Abstract

Object control in Thai exhibits two distinct types of complement clauses based on surface form: non-*hây* and *hây*-clauses. Hây-clauses further show two variants: one in which the controller precedes *hây* and the other in which it follows *hây*. This study investigates the internal structure of both types and proposes a derivational analysis accounting for the observed controller-*hây* order switching. I argue that both types of complement clauses are not structurally identical. I argue that non-*hây* clauses are VPs undergoing full restructuring, while *hây*-clauses are future infinitives projecting WollPs, with the future modal *Woll* pronounced as *hây*. The theoretical analysis that best explains the alternation of control with *hây*-clauses is the Movement Thoery of Control (MTC), which posits that the controllee/null argument is a copy of A-movement. This alternation can be classified into two variants: forward control and backward control.The movement analysis of control should, therefore, be incorporated into the theory.

Contents

1 Introduction

Object control is a syntactic construction in which the main predicate takes two internal arguments: a direct object and a proposition. This construction falls within obligatory control where there exists a coreferential dependency between the direct object (referred to as the 'controller') and the unpronounced subject (referred to as the 'controllee') of the complement clause. Pretheoretically, the term 'controller' is used to refer to the overtly pronounced argument, while the term 'controllee' refers to the unpronounced element that the controller is co-indexed with. Consider in (1) an example of this construction in English, where Δ atheoretically represents the silent argument.

(1) I forced Sam$_i$ [Δ_i to eat pizza]

Researchers have dealt with the theoretical challenges posed by control phenomena within the framework of generative grammar. Important questions that have been addressed include, but are not limited to, the following: What is the representation of the null argument (controllee)? What is the category of the complement clause? The first question concerns the representation of the silent subject in the non-finite complement clauses. Since the framework of Government and Binding (GB), the unexpressed argument has been treated as a silent pronoun, PRO (Chomsky 1981; Manzini 1983; Landau 2001). In GB, D-structure is responsible for theta-role assignment, which has to be compliant with the Theta-Criterion, which states that (i) each argument bears exactly one θ-role, and (ii) each θ-role is assigned to exactly one argument Chomsky (1981). Consequently, PRO is a by-product of such criteria as the DP *Sam* in (1), which is assigned a θ-role by the predicate *force*, is prohibited from bearing two arguments (i.e. the matrix object role and the embedded subject role). Conversely, given the emergence of the Minimalist Program which dispenses with D-structure as a level of representation, a novel account for obligatory control as an instance of A-movement has been proposed, and this approach has come to be known as the Movement Theory of Control (MTC) (Hornstein 1999, 2003; Boeckx and Hornstein 2004). The elimination of D-structure leads to the consideration of θ-roles as features. This makes possible the movement

to θ-positions. As a result, MTC derives control and raising through the same operation, namely A-movement. Control only differs from raising in that the landing site of movement in control is the theta-position(s), while that in raising is the nontheta-position. This framework has also been extended to account for another subspecies of control construction called 'backward control', whereby the controller is pronounced in the position structurally lower than the controllee (Polinsky and Potsdam 2002; Monahan 2003; Potsdam 2009). However, MTC has received criticisms, and some researchers have put forth arguments against this framework (Culicover and Jackendoff 2001; Landau 2003; Bobaljik and Landau 2009; Wood 2012).

The second question concerns the size of the embedded clause. Researchers have proposed that control complement clauses project CP (Chomsky and Lasnik 1993; Landau 2003; Marušič 2008). However, some authors have argued that non-finite embedded clauses vary in size, encompassing CP, TP, vP, and VP, with some undergoing restructuring (Wurmbrand 2001; Grano 2015). The restructuring framework is also an attempt to show that PRO does not always exist in all control infinitives. For instance, Wurmbrand (2001) argues that the 'full' restructuring infinitives in German, which project bare VPs, lack the embedded subject/PRO. This argument is supported by the fact that binding does not apply in restructuring infinitives. These findings lead to the notion that in control constructions, syntax is not always equivalent to semantics. Interpretatively, the actor of the event projected by bare VPs is understood, but it is not structurally present.

This study aims to investigate object control in Thai.[1] Thai object control environments are observed when the sentence includes the following verbs: *sàng* 'order', *baŋkháp* 'force', *ànúyâat* 'allow', *nóomnáaw* 'persuade'.

The current study investigates the configurations instantiated in (2) to (4).[2]

[1]Thai word order is SVO. Morphologically, it is an isolating or analytical language, in which there is no morphological inflections on verbs. Temporal information is usually expressed through the use of temporal adverbs.

[2]It is important to note that the bracket does not imply that all complements of the object control predicate have the same projection, nor does it suggest that the element *hây* and the controller are part of the main clause. The question of whether the controller and *hây* are the elements belonging to the main or embedded clause will be addressed later. Also, let us assume for now that the bracket represents the semantic interpretation of control, where the embedded clauses has a subject. The question of whether the embedded subject/PRO is present in all types of nonfinite clauses in (2) to (4) will be investigated later.

(2) chăn baŋkháp Sam$_i$ [Δ_i kin pizza]
1.SG force Sam eat pizza
'I forced Sam to eat pizza'

(3) chăn baŋkháp Sam$_i$ hây [Δ_i kin pizza]
1.SG force Sam hây eat Pizza
'I forced Sam to eat pizza'

(4) chăn baŋkháp hây Sam$_i$ [Δ_i kin pizza]
1.SG force hây Sam eat Pizza
'I forced Sam to eat pizza'

As the data above demonstrate, object control constructions in Thai can be categorized into two types: those without *hây* as instantiated in (2), and those with *hây* in (3) and (4). In the remainder of the paper, I call the complement clause of the former 'non-*hây* clause' and that of the the latter '*hây*-clause'. Despite their surface differences, these three instances exhibit exhaustive control, whereby it is Sam who is forced, and it is Sam and no one else who eats the pizza. The object control constructions involving *hây* come in two variants. In (3), *hây* appears after the DP controller, while in (4) it follows the controller.

Attempts to provide syntactic accounts for the construction in question, as well as for the status of the element *hây*, have been made since the Government and Binding era. Previous studies have focused on (3) and (4), but none have included the object control configuration seen in (2) within their analysis. Given the distinction between (3) and (4), the crucial question to address is whether this difference lies in the displacement of the controller or that of the element *hây*. One effective approach to unraveling this puzzle is by examining the accounts for the categorical status of *hây*. However, researchers have held differing views on the categorization of *hây* in object control, which can be divided into two camps. One camp treats *hây* as a verbal element (Sereechareonsatit 1984; Pingkarawat 1989), while the other regards it as a complementizer (Ransom 1988; Prasithrathsint 2007). This discrepancy adds further complexity to our attempt to address the question of which element is being displaced. Should we adopt the verbal analysis, we might encounter another challenge in determining which predicate assigns a theta-role to the DP *Sam*. Furthermore, if we assume the complementizer analysis, it could lead us to claim that the DP *Sam* in (4) is an

embedded subject.

This study has two main goals. First, it delves into the structural properties of non-*hây* clauses versus *hây*-clauses, aiming to determine whether they share identical or different structure. Secondly, the study aims to uncover what underlies the order switch between the overt controller and *hây*. In doing so, careful steps should be implemented. The initial question to address is whether *hây* is a part of the matrix or the embedded constituent. The answer to this question will lead to another question concerning the status of the DP controller, particularly in cases where *hây* forms a constituent with the embedded clause. In other words, if *hây* belongs to the embedded nonfinite clause, the question of whether the DP controller in (4) is pronounced in the matrix object or the embedded subject follows. Additionally, if *hây* is a part of the embedded clause, then we have to address the question of whether object control without *hây* and its counterpart with *hây* are structurally identical. After considering the potential answers to the aforementioned questions, three analytical hypotheses emerge regarding the derivation of object control in Thai. It's important to note that all of these hypotheses assume a ditransitive analysis in the matrix domain.

- **(1) Verb-particle predicate analysis** :*hây* is part of the matrix clause. It, along with the object control verb, forms what is referred to as a verb-particle predicate (V-*hây*, henceforth). This construction is comparable to the English predicate *make out*, as seen in phrases like *make something out to be good* (Johnson 1991). Following this perspective, we would posit that the origin of V-*hây* is within the matrix clause. In the course of derivation, the verb alone undergoes movement to *v*, leaving the particle *hây* stranded, resulting in the surface structure in (3). Alternatively, the entire V-*hây* chunk can move together to v, leading to pronunciation of (4).

- **(2) Head movement analysis**: *hây* originates in the embedded constituent. The element that undergoes movement is *hây*. To derive (4) with this hypothesis, *hây* originates as the head of *hây*P. Subsequently, the head raise to V within the matrix clause, attaching itself to the object control verb prior to moving to v. Meanwhile, in deriving (3), *hây* remains static,

not undergoing movement. This analysis assumes PRO to be the subject of the complement clause.

- **(3) Movement Theory of Control analysis**: *hây* is a constituent of the embedded clause. Following this analysis, the element that undergoes movement is the controller. (3) exhibits forward control, wherein the controller is pronounced in the matrix position, which is structurally higher than the controllee, based on the chain of A-movement. The controller is then pronounced in the Spec,VP. (4) demonstrates backward control, in which the controller is pronounced in the embedded subject position, structurally situated lower than the controllee. Instances of backward phenomena have been observed and documented in various languages such as Malagasy (Potsdam 2009)) and Ancient Greek (Haug 2017).

The differences and similarities among these three hypotheses are summarized in Table 1.

Hypothesis	**Where *hây* originates**		**Derivation**	
	Matrix clause	Embedded clause	Head movement	A-movement
(1)	✓	–	✓	–
(2)	–	✓	✓	–
(3)	–	✓	–	✓

Table 1 illustrates the similarities and differences among these hypotheses. In terms of the constituent to which *hây* belongs, (1) differs from both (2) and (3). Specifically, hypothesis (1) suggests that *hây* belongs to the matrix domain, whereas hypotheses (2) and (3) propose that it is a component of the embedded complement. In regard to the derivational mechănism, both (1) and (2) involve head movement, while hypothesis (3) is derived through phrasal movement (A-movement).

Ultimately, I will argue that non-*hây* clauses and *hây*-clauses are not identical. The former project VPs, while the latter are WollP (Wurmbrand 2014), and that Hypothesis (3) works best to account for the order switching between *hây* and the controller. The representation of the null argument is thus an trace of A-movement, and the difference between the two variations of *hây*-clauses is phonological, not structural.

This paper is organized as follows. In Section 2, I present the distribution patterns of the element *hây* and review earlier analyses of the construction in question, focusing mainly on their views on the categorical status of *hây* and the overt controller. Section 3 is dedicated to examining whether *hây* belongs to the matrix or the embedded constituent. In section 4, I delve into the structural characteristics of the two types of complement clauses: non-*hây* clauses and *hây*-clauses, proposing that these two types exhibit distinct structural properties. Section 5 discusses the reason why the head movement analyis is untenable. In section 6, I propose that the A-movement analysis of control (MTC) is the most appropriate analytical account for Thai object control, before concluding in section 7.

2 Multi-functions of *hây* and previous control analyses

This section begins with exploring the distributions of the element pronounced as [hâj], glossed as *hây* . Then, I will review previous proposals concerning the status of *hây* and their analyses on object control, before presenting evidence that *hây* is not a verbal element.

2.1 Distributions of *hây*

In addition to its role in object control constructions, *hây* serves various functions in different construction. It functions as a ditransitive verb 'to give' in (5), serves as a marker of a goal in double complement constructions in (6), operates as a *let*-verb in (7), and functions as a causative verb in (8). Furthermore, it is present in raising-to-object constructions, exemplified in (9) and (10), as well as resultative constructions, as seen in (11), and causative constructions, demonstrated in (12).

(5) chăn **hây** ngern Sam
1.SG give money Same
'I gave Sam money'

(6) chăn song jodmai **hây** Sam
1.SG send letter hây Sam

'I sent a letter to Sam'

(7) chăn **hây** Sam khao baan
1.SG let Sam enter house
'I let Sam get in the house'

(8) chăn **hây** Sam yìp nangsuu (hây chăn)
1.SG have Sam pick book hây 1.SG
'I had Sam pick up a book (for me)'

(9) chăn khaatwang **hây** Sam kin pizza
I expect hây Sam eat pizza
'I expect Sam to eat pizza.'

(10) chăn khaatwang Sam **hây** kin pizza
I expect Sam have eat pizza
'I expect Sam to eat pizza'

(11) Khun tong ying nok **hây** tai
2.SG must shoot bird hây die
'You must shoot the bird until (it) dies.'

(12) chăn tham **hây** Sam siajai
I make hây Sam upset
'I made Sam upset'

The current study focuses on *hây* in object control construction. Researchers have proposed various accounts for the categorical status of this element within the context of control. It can be observed that several distributional factors influence those analyses on the status of *hây* in control. Regarding its usage as a verb, some authors have suggested that *hây* in control functions as a verbal element (Sereechareonsatit 1984; Pingkarawat 1989). One motivation behind this viewpoint is the fact that *hây* can be negated, a property commonly associated with verbs in Thai. Similar to the verbal analysis is the view that treats *hây* as a causative marker (Singhapreecha 2000, 2010; Diller et al. 2001; Jenks 2006). Conversely, an opposing view contends that in object control and raising-to-object contexts, *hây* is a complementizer (Needleman 1973; Grima 1978; Ransom 1988; Prasithrathsint 2007). Prasithrathsint further explains that *hây* has undergone grammaticalization from the ditransitive verb *hây*, which originally meant 'to give', particularly when used alongside

a specific class of verbs she terms 'verbs of causation', such as *sang* 'to order' and *bɔ ɔk* 'to tell'.

2.2 DP controller and the switching order

In this section, I will review both descriptive and derivational accounts. It is important to note that none of the existing studies in the literature have compared all of the three control patterns, as illustrated in (2) to (4) and reiterated in (13) to (15).

(13) chăn baŋkháp Sam kin pizza
1.SG force Sam eat Pizza
'I forced Sam to eat pizza'

(14) chăn baŋkháp Sam hây kin pizza
1.SG force Sam hây eat Pizza
'I forced Sam to eat pizza'

(15) chăn baŋkháp hây Sam kin pizza
1.SG force hây Sam eat Pizza
'I forced Sam to eat pizza'

Pingkarawat (1989) proposes an in-depth analysis of control in Thai within the framework of Government and Binding. Her analysis proposes that the DP controller can be expressed either in the matrix domain or within the embedded clause. Her focus centers on the construction exemplified as (16), where she contends that this specific construction cannot be approached through the lens of Control Theory. In her view, control only applies to constructions in which the controller is the subject. Pingkarawat's central arguments revolve around the relationship between *hây*-clauses and the matrix verb. She asserts that the *hây*-clause acts as an adjunct to the matrix VP, and posits that the construction illustrated in (16) does not involve a Control mechanism in its derivation. Instead, she accounts for it with a concept termed 'Argument Inheritance' . According to her analysis, the silent subject of *hây*-clauses is not PRO, but rather an argument that is 'inherited' from the matrix predicate.

(16) Nuan bɔɔk Lek hây wing thúk wan
Nuan tell Lek give run every day

'Nuan told Lek to run every day'

According to Argument Inheritance (AI), *hây* inherits specific arguments, the subject and indirect object, from the matrix verb *bɔɔk* 'to tell', which takes three arguments (subject, direct object, and indirect object). Pingkarawat presents her principal analysis in (17), where the symbol 'e' denotes an empty category.

(17) Nuan$_i$ bɔɔk Lek$_k$ [$_{CP}$ e1$_i$ *hây* e2$_k$ [$_{CP}$ e3$_k$ wing thúk wan]
Nuan tell Lek give run every day
'Nuan told Lek to run every day'

The derivation of (17) proceeds as follows: e1$_i$ and e2$_k$ represent the arguments of *hây*, both of which are empty noun phrases with their antecedents being the subject and the indirect object of the matrix predicate 'to tell', respectively. Additionally, *hây* subcategorizes for a complement clause, where the subject of the complement clause aligns with the matrix subject. According to Pingkarawat's proposal, there exists a mutual inheritance of arguments between the matrix and the embedded adjunct clause. In addition, the Argument Inheritance (AI) can be extended to accommodate the counterpart of (17), when the overt DP object follows *hây*, as presented in (18).

(18) Nuan$_i$ bɔɔk e$_k$ [CP e1$_i$ *hây* Lek$_k$ [CP e3$_k$ wing thuk wan]
Nuan tell give Lek run every day
'Nuan told Lek to run every day'

The contrast between (17) and (18) suggests that the overt DP *Lek*, which I consider as a controller can occur in both the matrix predicate and in the lower clause. When it is expressed in the lower clause, there exists a trace of the DP in the matrix clause.

Prasithrathsint (2007) is another analysis that shares a similar view regarding the overt DP/controller being pronounced in the embedded clause. Prasithrathsint posits that in (19), *hây* functions as a complementizer that introduces the complement clause of causative verbs such as *sang* 'to order.'

(19) khao sàng [hây chăn nang long]
3.SG order COMP 1.SG sit down
'He ordered me to sit down'

(19) has a control reading, where *chăn* 'I' receives an order, and it is 'I' and nobody else who sits down. Although Prasithrathsint's analysis does not explicitly propose that there is a trace of the DP in the matrix domain, it has a clear indication that the DP controller is expressed in the embedded clause.

Jenks (2006) presents a descriptive account of object control in Thai, emphasizing that it falls within obligatory control. He observed that object control predicates manifest in verbs such as *chakchuan* 'persuade', *baŋkháp* 'force', and *bɔɔk* 'tell'. These verbs are required to co-occur with the causative marker *hây*. Jenks refers to *hây* as a permissive causative, and it usually co-occurs with animate objects. In his view, the causative *hây* is a necessary component; its absence renders the sentence ungrammatical.[3] This implies that the object control structure lacking *hây* is not acceptable. However, his study does not delve into the displacement of *hây*.

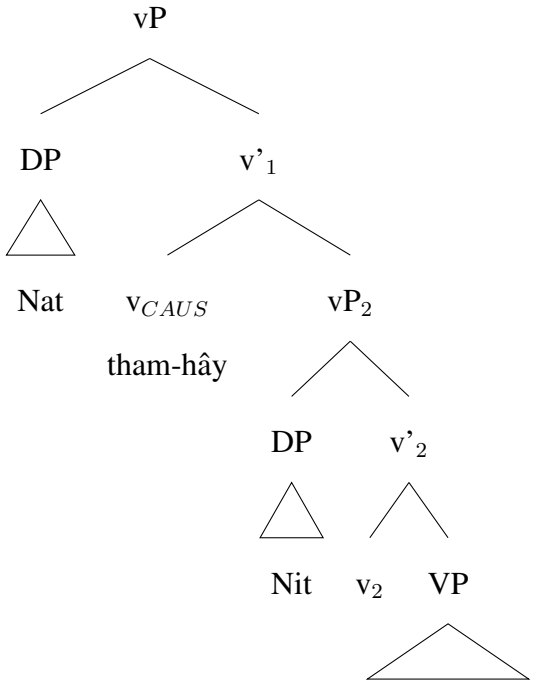
As for the account for the switching order between the controller and *hây*, none of the existing studies have explicitly offered an explanation for how such phenomena is derived. However, Jenks (2011) offers a preliminary syntactic derivation for causative constructions involving *hây*, where *hây* can also occur after another causative verb like *tham* 'to make', as instantiated in (20). On the surface, this construction mirrors an object control variation with *hây*.

(20) Nat tham-*hây* Nit kin thurian.
Nat make-have Nit kin durian
'Nat forced Nit to eat durian'

Following Li (1990), Jenks (2011) posits that the fusion of the two causative verbs, *tham-hây*, emerges as a result of the morphological compounding process, which is a prevalent feature in analytical languages. In the derivation of (20), two vPs are present as in (21). The head v_1 introduces an external argument, and v_2 is a valency-increasing element.

[3]This judgment contradicts the judgment of five other native Thai speakers, including mine. To us, (13) is perfectly acceptable. According to results from a Google search, this pattern is also commonly used by other Thai speakers.

(21)



In Jenks' analysis, the DP *Nit* occupies the Spec,vP_2 position and is the external argument for v_2', undertaking the action of eating durian. While Jenks (2006) does not expressly outline a derivational explanation for object control, he explicitly treats *hây* within object control as a causative element.

2.3 Against *hây* as verbal element

I will present evidence that *hây* in object control environment is not the same as the causative verb *hây*, repeated in (22). This evidence comes from the fact that we can incorporate the causative verb in object control as the main predicate of the complement clause. Consider (23).

(22) Sam hây Jane ma ha thii baan
Sam CAUS Jane come see at home
'Sam had Jane come to his house to see him'

(23) chăn sàng Sam $hây_1$ $hây_2$ Jane ma hă thii baan
1.SG order Sam hây CAUS Jane come see at home
'I ordered Same to have Jane come to his house to see him'

Although Jenks (2006) and Singhapreecha (2010) do not center on the status of *hây* in control environments, they treat it as a causative marker, which is similar to the causative *have* in English. If *hây* in object control is a causative, we would not expect there to be both $hây_1$ and $hây_2$ in (23). This is because it is impossible to double *hây* in causative clauses, as instantiated in (24)

(24) *Sam hây hây Jane ma hă thii baan
Sam CAUS CAUS Jane come see at home
'Sam had Jane come to his house to see him'

Therefore, I argue that *hây* in object control does not have a status of a causative or a verbal element. Importantly, the fact that *hây* in control and the causative *hây* have the same phonetic content does not entail that they must be the same categorical status. In the following section, I will investigate where *hây* originates and its constituency.

3 Situating *hây*

This section is an attempt to establish the constituent structure of clauses introduced by *hây*, which serves as the fundamental building block for the analysis of object control. I suggest that *hây* forms a constituent with the embedded nonfinite clause. Simply stated, the nonfinite clause in Thai object control is headed/introduced by *hây*. This argument is supported by the following pieces of evidence.

The first evidence comes from the fact that *hây* c-selects the nonfinite vP, rendering it incapable of occurring alongside matrix elements independently, in the absence of the nonfinite vP. Let's consider the following examples, where the nonfinite clause is bracketed.

(25) chăn baŋkháp hây Sam [kin pizza]
1.SG force hây Sam eat Pizza
'I forced Sam to eat pizza'

(26) chăn baŋkháp Sam
1.SG force Sam
'I forced Sam'

(27) *chăn baŋkháp hây Sam
1.SG force hây Sam
'I forced Sam'

(28) *chăn baŋkháp Sam hây
1.SG force Sam hây
'I forced Sam'

(26) demonstrates that object control verbs can also be used as transitive verbs, taking only a DP as their internal argument in certain contexts. When we insert *hây* into the sentence without the presence of the nonfinite clause, the sentence becomes ungrammatical, regardless of whether it appears before or after the direct object, as seen in (27) and (28), respectively. This is because it is imperative that once *hây* appears in an object control construction, it be accompanied by the nonfinite clause, as shown in (25). These pieces of evidence strongly indicate that *hây* is never part of the matrix predicate, thus it is not possible to posit that *hây* originates in the matrix domain or has a constituent relation with the matrix predicate.

Secondly, the constituent structure of the string [*hây* + nonfinite constituent] can be examined through the use of a pseudo-cleft, which is a type of movement test. By applying this test, we can make the following predictions: if *hây* is indeed a constituent with the nonfinite vP, the string [*hây* + nonfinite constituent] should be grammatically correct when dislocated.

(29) [hây kin pizza] kue sing thii chăn baŋkháp Sam
hây eat pizza COP thing COMP 1.SG force Sam
'Eating pizza is what I forced Sam to do'

(30) sing thii chăn baŋkháp Sam kue [hây kin pizza]
thing COMP 1.SG force Sam COP hây eat pizza
'What I forced Sam to do is eat pizza'

(31) *[kin pizza] kue sing thii chăn baŋkháp hây Sam
eat pizza COP thing COMP 1.SG force hây Sam
'Eating pizza is what I forced Sam to do'

(32) *sing thii chăn baŋkháp hây Sam kue [kin pizza]
thing COMP 1.SG force hây Sam COP eat pizza
'What I forced Sam to do is eat pizza'

When the sequence [*hây*+vP] is pseudo-clefted, as shown in (29), the sentence becomes acceptable. Also, when the string [*hây*+nonfinite constituent] is reverse pseudo-clefted, as demonstrated in (30), the sentence still remains grammatical. Conversely, in (31), when *hây* is associated with the matrix elements in an object control construction, the resulting sentence is ungrammatical. Furthermore, once it is disassociated from the nonfinite clause or grouped with the matrix elements in (32), it becomes ungrammatical. Thus, this set of evidence strongly suggests that *hây* indeed functions as a constituent within the nonfinite clause.

The third evidence is from the fact that *hây* cannot precedes the adverb which modifies the matrix predicate. Let's first look at the examples in (36)-(37), where the adverb modifies the matrix predicate which takes a finite clause as a complement. The temporal adverbs in Thai usually occurs in the left or right edge of the clause. In the examples below, I use *mɯ̄awaan* 'yesterday' as clause-boundary marker.

(33) Sam kui kab chăn **mɯ̄awaan**
Sam talk with 1.SG yesterday
'Sam talked to me yesterday'

(34) **mɯ̄awaan** Sam kui kab chăn
yesterday Sam talk with 1.SG
'Sam talked to me yesterday'

(35) *Sam kui **mɯ̄awaan** kab chăn
Sam talk yesterday with 1.SG
'Sam talked yesterday to me'

(36) Sam puud kab chăn **mɯ̄awaan** [waa khao mai chob pizza]
Sam say with 1.SG yesterday COMP 3.SG NEG like pizza
'Sam said to me yesterday that he did not like the pizza'

(37) Sam puud **mɯ̄awaan** [waa khao mai chob pizza]
Sam say yesterday COMP 3.SG NEG like pizza
'Sam said yesterday that he did not like the pizza'

Now, let us apply this idea with *hây*-clauses. The predictions is as follows; if *hây* is part of the matrix constituent, it should be allowed to occur before the adverb, and the reading where the adverb modifies the matrix event is retained.

(38) chăn baŋkháp Sam **m̶u̶awaan** hây kin pizza
1.SG force Sam yesterday hây eat pizza
'Yesterday, I forced Sam to eat pizza'

(39) chăn baŋkháp **m̶u̶awaan** hây Sam kin pizza
1.SG force yesterday hây Sam eat pizza
'Yesterday, I forced Sam to eat pizza'

(40) *chăn baŋkháp hây Sam **m̶u̶awaan** kin pizza
1.SG force hây Sam yesterday eat pizza
'Yesterday, I forced Sam to eat pizza'

(41) *chăn baŋkháp Sam hây **m̶u̶awaan** kin pizza
1.SG force Sam hây yesterday eat pizza
'Yesterday, I forced Sam to eat pizza'

(40) and (41) are ungrammatical, and the reading where the adverb modifies the embedded predicate is also impossible. The ungrammaticality of the two examples suggests *hây* is not part of the matrix clause. If it were, placing *hây* in the matrix domain would be acceptable.

Based on the evidence presented thus far, I have confirmed that *hây* belongs to the nonfinite constituent. In light of this, hypothesis (a), which suggests that *hây* is a component of the matrix predicate, does not successfully account for object control in Thai.

Now, we have reached a point where we can define the boundary between the matrix and the embedded clause in object control encompassing *hây*. This representation is illustrated in (42), with the nonfinite clauses being bracketed.

(42) chăn baŋkháp Sam$_i$ [Δ_i hây kin pizza]
1.SG force Sam hây eat pizza
'I forced Sam to eat pizza'

The illustration above aligns with the conventional object control analysis, where the DP controller is pronounced in the matrix clause and holds a coreferential relation with the silent subject in the embedded clause. However, we must also account for the variant where the controller follows *hây*. Of course, this pattern raises a question: What is the syntactic position of the DP controller? This question is to be addressed in the subsequent section. If we consider *hây* as the boundary of the embedded domain, one plausible explanation for the controller's position would be that the

controller is pronounced in the embedded subject position, while the controllee is the silent direct object in the matrix clause, thereby showcasing backward control. This analysis is illustrated in (43).

(43) chăn baŋkháp Δ_i [hây Sam$_i$ kin pizza]
1.SG force hây Sam eat pizza
'I forced Sam to eat pizza'

4 Structural properties of the complement clauses

This section examines the syntactic properties of non-*hây* clauses and *hây*-clauses. My central proposal is that both of them are smaller than CP. The former is a full restructuring infinitive, which is smaller than the latter. I assume the former to project bare VPs and the latter to project WollPs, building on Wurmbrand (2014)'s proposal. In what follows, I will discuss the motivations for my proposal regarding the structural difference and the size of the complement infinitives in Thai object control.

4.1 Different projections of the complement clauses

I will start by highlighting the commonalities between non-*hây* clauses and *hây*-clauses. Subsequently, I will illustrate the differences between the two types of clauses and motivate the claim that *hây*-clauses are the projection of WollPs.

4.1.1 Lacking CP layer

Researchers have put forth the idea that discourse markers project within the CP layer (Munaro and Poletto 2002, 2008; Haegeman 2014). The particle chosen to serve as our diagnostic tool is the discourse marker *koh*. See Iwasaki and Horie (2005) for its pragmatic functions. Typically, this particle is adjacent to the subject of clauses that project CPs. This can be observed in the following examples.

(44) Sam **koh** ja pai Philadelphia.
Sam DISC FUT go Philadelphia
'Sam will also go to Philadelphia'

(45) **koh** Sam ja pai Philadelphia.
DISC Sam FUT go Philadelphia
'Sam will go to Philadelphia'

(46) **koh** yuun khun si
DISC stand up IMP
'Just stand up'

(47) chăn khaatwang [wa Sam **koh** ja pai Philadelphia]
I expect COMP Sam DISC FUT go Philadelphia
'I expected that Sam will go to Philadelphia'

However, the particle *koh* is not permitted in the two types of the embedded clauses of object control. Inserting this particle into the clause yields ungrammaticality. Let's take a close look at the following sentences.

(48) *chăn baŋkháp Sam [**koh** kin pizza]
1.SG force Sam DISC eat Pizza

(49) *chăn baŋkháp Sam [**koh** hây kin pizza]
1.SG force Sam DISC hây eat Pizza

(50) *chăn baŋkháp hây Sam [**koh** kin pizza]
1.SG force hây Sam DISC eat Pizza
'I forced Sam to eat pizza'

The evidence presented in (48) to (50) indicates that the projection of object-control infinitives lacks a CP layer, which is typically the domain where discourse markers project. This inability to accommodate the discourse marker suggests that object-control infinitives, including both non-*hây* clauses and *hây*-clauses, are smaller than CP.

Another piece of evidence to support the claim that the complement clauses lack CP layers comes from the fact that they cannot host the topicalized object. In Thai, an object in a declarative sentence can be topicalized with a demonstrative nii 'this' as a topicalization marker, as exemplified

in (51) and (52) (Note that Thai word order is SVO). However, in object control complement clauses, topicalizing an object is impossible, as in (53)-(55).

(51) nǎŋsɯ̀ lêm níi, Sam$_i$ àan (man$_i$) thúk wan
book CLF this, Sam read RSM every day
'This book, Sam reads every day.'

(52) chăn chɯ̂a [$_{CP}$ wâa nǎŋsɯ̀ lêm níi Sam àan (man) thúk wan]
1.SG believe COMP book CLF this, Sam read RSM every day
'I believe that this book, Sam reads every day'

(53) *chăn baŋkháp nǎŋsɯ̀ lêm níi Sam àan (man) thúk wan
1.SG force book CLF this, Sam read RSM every day
'*I forced this book, Sam to read every day'

(54) *chăn baŋkháp [hây nǎŋsɯ̀ lêm níi, Sam àan (man) thúk wan]
1.SG force hây book CLF this, Sam read RSM every day
'*I forced this book, Sam to read every day'

(55) *chăn baŋkháp Sam$_i$ [hây nǎŋsɯ̀ lêm níi, Δ_i àan (man) thúk wan]
1.SG force Sam hây book CLF this, read RSM every day
'*I forced this book, Sam to read every day'

I will follow Benincà and Poletto (2004), who proposes that the topicalized element is hosted in the CP layer. When comparing *hây*-clauses and their embeded finite CP counterparts in (52), it is evident that both non-*hây* clauses and *hây*-clauses lack the ability to host a topicalized element, suggesting that they may lack a CP layer. Thus, I argue that object control complements in Thai are smaller than CP.

4.1.2 Temporal mismatch

In this test, I employ two distinct tense modifiers: one that modifies the matrix clause and the other that modifies the embedded clause. By employing tense mismatch as a diagnostic tool, we can determine whether each type of embedded clause projects a TP or not.

non-hây clauses

(56) **tonni** chăn kamlang baŋkháp Sam [kin pizza (*__prungni__)]
now 1.SG PROG force Sam eat pizza tomorrow

'Now, I am forcing Sam to eat pizza tomorrow'

(57) **muawaan** chăn baŋkháp Sam [kin pizza (***prungni**)]
yesterday 1.SG force Sam eat pizza tomorrow
'Yesterday, I forced him to eat pizza tomorrow'

hây-clauses

(58) **tonni** chăn kamlang baŋkháp Sam [hây kin pizza **prungni**]
now 1.SG PROG force Sam hây eat pizza tomorrow
'Now, I am forcing Sam to eat pizza tomorrow'

(59) **muawaan** chăn baŋkháp Sam [hây kin pizza **prungni**]
yesterday 1.SG force Sam hây eat pizza tomorrow
'Yesterday, I forced him to eat pizza tomorrow'

(60) **tonni** chăn kamlang baŋkháp hây Sam [kin pizza **prungni**]
now 1.SG PROG force hây Sam eat pizza tomorrow
'Now, I am forcing Sam to eat pizza tomorrow'

(61) **muawaan** chăn baŋkháp hây Sam [kin pizza **prungni**]
yesterday 1.SG force hây Sam eat pizza tomorrow
'Yesterday, I forced him to eat pizza tomorrow'

Based on the data provided above, the two types of clauses exhibit a distinction. *hây*-clauses, as seen in (58) to (61), permit tense mismatch, whereas the non-*hây* clauses in (56) and (57) do not. The evidence strongly suggests that non-*hây* clauses lack tense, which is required for licensing temporal modifiers. The ability to possess temporal layer in the projection can also account for the distinct interpretation between the two clause types. To elaborate, non-*hây* clauses convey a simultaneous reading, where the event of the embedded clause happens concurrently with the utterance of the matrix clause. In contrast, *hây*-clauses allow for an episodic interpretation, enabling the embedded event to be delayed to occur after the matrix utterance time.

4.1.3 Embedded negation

This represents another distinct property exhibited by the two types of infinitives. The contrast becomes evident when considering that negation is impossible for the embedded non-*hây* clauses,

whereas the *hây*-clauses can be negated. In Thai negation, the negator precedes the element it negates. In this diagnostic, the embedded verb *kin* 'to eat' is the one being negated. See the examples provided below.

(62) *chăn baŋkháp Sam [mai kin pizza]
1.SG force Sam NEG eat Pizza

(63) chăn baŋkháp Sam [hây mai kin pizza]
1.SG force Sam hây NEG eat Pizza

(64) chăn baŋkháp hây Sam [mai kin pizza]
1.SG force hây Sam NEG eat Pizza
'I forced Sam to not eat pizza'

The inability to accommodate the NegP of non-*hây* clauses in (62) can be explained by the fact that this type of clause lacks tense as shown in the preceding subsection, and some researchers assume tense to be the licensor of negation (Zanuttini 1991, 1996; Haegeman 1995). Thus, it is likely that the non-*hây* clause is smaller than TP, while the *hây*-clauses seem to be TP. Note that I assume *hây*-clauses to be TP just for now although I will argue later that they do not behave the same as the tensed/finite clauses.

4.1.4 External argument

Based on the previous diagnostic, it becomes evident that the two types of complement clauses have distinct structural characteristics. The notion that the head occupied by *hây* projects within the non-*hây* clause as a null element is no longer tenable. As previously mentioned, my proposal is that non-*hây* clauses project bare VPs, while *hây*-clauses project as WollP. This implies that non-*hây* clauses lack a position for the external argument. I assume that the external argument is introduced in VoiceP/vP (Kratzer 2006). Under this assumption, we predict that non-*hây* clauses should lack external arguments. To substantiate this claim, let's consider the following evidence where the reciprocal pronoun is prohibited in non-*hây* clauses, yet allowed in *hây*-clauses.

(65) *chăn baŋkháp Sam$_i$ lae Jane$_j$ [rak kanlaekan$_{i+j}$]
1.SG force Sam and Jane love each.other

(66) chăn baŋkháp Sam$_i$ lae Jane$_j$ [hây rak kanlaekan$_{i+j}$]
1.SG force Sam and Jane hây love each.other

(67) chăn baŋkháp hây Sam$_i$ lae Jane$_j$ [rak kanlaekan$_{i+j}$]
1.SG force hây Sam and Jane love each.other
'I forced Sam and Jane to love each other'

The use of reciprocal pronoun in Thai aligns with Condition A of Binding Theory, which requires that the reciprocal pronoun be bound by its antecedent within the same binding domain. According to the standard assumption, the external argument is introduced in Spec,VoiceP. This external argument holds a coreferential relationship with the matrix object. In examples (66) and (67), that the reciprocal pronoun is allowed implies that these embedded clauses has a position that accommodate the external argument, which is an antecedent of the reciprocal pronoun. Conversely, the ungrammaticality in (65) indicates that the embedded clause lacks a subject/external argument that can bind the reciprocal pronoun in the same binding domain. Therefore, the only category that lacks a position for an external argument is VP. The skeletal representation for each type of control complement clause is depicted in (68) and (69). Again, for the time being, I am assuming that *hây*-clauses are TPs.

(68) chăn baŋkháp Sam [$_{VP}$ kin pizza]
1.SG force Sam eat pizza

(69) chăn baŋkháp Sam$_i$ [$_{TP}$ PRO$_i$ hây [$_{vP}$ kin pizza]]
1.SG force Sam hây eat pizza
'I forced Sam to eat pizza'

After we have examined the structural properties of the two types of object control infinitives, the similarity and differences between non-*hây* clauses and *hây*-clauses can be summarized in Table 2.

Table 2: Summary of the structural properties of object control complements

Types of infinitives	Accommodating discourse marker and topicalized element	Temporal mismatch	Embedded negation	External argument
non-hây clauses	No	No	No	No
hây-clause	No	Yes	Yes	Yes

In summary, the two types of embedded clauses are structurally distinct. Given that non-*hây* clauses lack all four of the mentioned properties, I propose that this clause type projects bare VPs. On the other hand, *hây*-clauses are only incapable of accommodating the discourse marker but possess the remaining properties. Referring to the table above, I hypothesize that *hây*-clauses maximally project TPs. However, assuming *hây*-clauses as TP projections might not be accurate enough. Despite having a future/irrealis interpretation, these nonfinite clauses still differ from finite future clauses. This issue will be addressed in the subsequent subsection.

4.2 *Hây*-clauses as *WollPs*

This section is aimed at motivating my proposal that *hây*-clauses are WollPs. This proposal builds on that made by Wurmbrand (2014), which suggests that *woll* is present in future irrealis infinitives, contributing to the future interpretation in the infinitive structure. Wurmbrand's framework aligns with the hypothesis that future tense in English constitutes a composite tense, combining tense and an abstract modal element, *woll*. In English, the finite future tense *will* is the spell-out of the tense [pres] and the modal [*woll*] combined (Abusch 1985, 1988). Wurmbrand's analysis is built on data from Exceptional Case Marking (ECM) and control infinitives, arguing that the future modal *woll* is projected in these constructions, while tense is not.

Although infinitives can convey future interpretations, they still have distinct characteristics compared to finite future clauses (i.e. *will*/*would*-clauses). Wurmbrand explicates that the differences can be identified by *absolute*/*relative* interpretation and *sequence-of-tense* effects (SOT).

The first disparity lies in the manner of temporal interpretation. Future infinitives possess a *relative* reading, in contrast to the *absolute* reading observed in finite future clauses. To elaborate, when future infinitives are embedded under the matrix past tense, they are capable of referring to time both prior to and subsequent to the time of utterance, as exemplified in (70). In contrast, such a temporal interpretation is not existent in the finite future clauses, as illustrated in case (71). Finite clauses restrict temporal reference solely to the time occurring after the utterance time, and this exemplifies an absolute interpretation.

(70) Leo decided a week ago to go to the party yesterday. (Wurmbrand, 2014)

(71) Leo decided a week ago that he will go to the party (*yesterday). (Wurmbrand, 2014)

Future infinitival clauses and its finite counterparts also differ in term of the sequence of tense (SOT) phenomena. To account for the existence of [pres] in the finite future clause, Wurmbrand adopts the deletion view of SOT. The term SOT refers to situations wherein a tense expressed in a morphological form lacks semantic content of that temporal morphology. Simply put, an event with the verb morphologically marked with a past-tense morpheme can be interpreted as nonpast. The deletion view of SOT holds that a tense may get deleted at the level of Logical Form (LF) if it occurs within the scope of another tense possessing an identical temporal value (Ogihara 1996). Thus, in (72), the [pres] tense embedded in the future tense can lack [pres] interpretation.

(72) a. John will see the unicorn that is walking. (Ogihara, 1996)

b. PRES woll see [NP PRES walk]

c. PRES woll see [NP ~~PRES~~ walk]

(72a) has two interpretations; in (72b) walking is interpreted as [pres], and the interpretation of (72c) lacks [pres], owing to tense deletion effect of SOT.

Now, let us turn to the finite future and infinitival future. Compare the two sentences.

(73) a. John promised me yesterday that he will tell his mother tomorrow that they were having their last meal together (when . . .).

b. [PAST promise [PRES woll tell [PAST meal] (*SOT)

(74) a. John promised me yesterday to tell his mother tomorrow that they were having their last meal together.

b. [PAST promise [Inf woll tell] [~~PAST~~ meal] (SOT)

In (73), the interpretation of *having a meal* must be [past] and cannot be [nonpast] due to the presence of the intervening tense [pres] projected in the finite future clause *will tell*. As a result, the sequence of tense (SOT) phenomenon is blocked. On the contrary, in example (74), the timing of *having a meal* can be interpreted as a nonpast event (i.e., deleted). This is feasible because the infinitive *to tell* lacks any intervening tense that would block the SOT.

It is apparent that future infinitives and the finite future clauses are not identical although they both possess future information. Now, let us turn to Thai infinitive hây-clauses. Only the absolute/relative interpretation can be used as a diagnostic to distinguish the finite future clause and hây-clause. SOT diagnostic cannot be applied because Thai is not morphologically tense-marked. So, it is difficult to test it with this diagnostic.

The absolute/relative interpretation works well with Thai. Like English, the infinitival *hây*-clauses are of relative interpretation, when embedded under the matrix predicate with past tense. On the other hand, the embedded finite future clause only has absolute reading. See the contrast between (75) for finite clause and (76)-(77) for the nonfinite clauses. Note that I compare the finite and infinitival clause of object-to raising predicate *khaatwang* 'expect' because in Thai, the object control infinitives in Thai do not have the finite clause counterparts. Notwithstanding, the object control infinitives have the same relative interpretation as the raising to object infinitives.

(75) aathit kòn chăn khaatwang [wa Sam ja pai rongrian (*muawaan)/prungni]
week last 1.SG expect COMP Sam FUT go school yesterday/tomorrow
'Last week, I expected that Same will go to school yesterday'

(76) aathit kòn chăn khaatwang [hây Sam pai rongrian muawaan/prungni]
week last 1.SG expect hây Sam go school yesterday/tomorrow
'Last week, I expected Sam to go to school yesterday/tomorrow.

(77) aathit kòn chăn baŋkháp [hây Sam pai rongrian muawaan/prungni]
week last 1.SG force hây Sam go school yesterday/tomorrow
'Last week, I forced Sam to go to school yesterday/tomorrow'

(75) exemplifies the finite embedded clauses under the matrix predicate with past tense, which is strict to absolute interpretation. As we see, the embedded clause cannot be modified by the 'yesterday' adverb as it is the time that takes place before the utterance time. On the other hand, (76), which is the infinitive counterpart of the embedded finite clause in (75), and (77), which are control infinitives, both exemplify the future infinitives which allow for relative interpretation as attested by the fact that they can be modified by either 'yesterday' or 'tomorrow' adverbs. Both adverbs represent the time occurring before and after them utterance time, respectively. Therefore, the future infinitives/*hây*-clauses are tenseless, what projects in the syntax of the infinitives allowing the clause to have future reading is only the future modal *woll*, which I assume to be phonetically realized as *hây* in Thai.

Summarizing, we have observed that object control predicates are restructuring predicates with restructured infinitive complements falling into two categories: non-*hây* clauses projecting bare VPs, and *hây*-clauses projecting WollPs. With this understanding, we can now delineate the projection of object control in Thai as follows.

(78) With non-*hây* complements

$\ldots[_{VP}$ (matrix) $[_{VP}$ (embedded)]]

(79) With *hây*-clause complements

$\ldots[_{VP}$ (matrix) $[_{WollP}$ (embedded)]]

Thus far, we have answered the first central research question concerning the structural category of both types of the complement clauses. The following sections are dedicated to answering the second question, which concerns the underlying operation that can account for the two variants of hây-clauses. Of course, our answer to this question is that the switching order

5 Rejecting head movement analysis

Thus far, we have ruled out the verb-particle analysis, which posits that *hây* originates in the matrix domain, as *hây* is part of the nonfinite constituent. In this section, we will delve into head movement and A-movement. This analytical hypothesis offers a plausible explanation for Thai object control, particularly the phenomenon where *hây* and the controller exhibit the ability to switch positions on the surface. Both analyses are presented below.

Head movement:

(80) chăn baŋkháp Sam [$_{WollP}$ hây PRO kin pizza]

(81) chăn baŋkháp hây Sam [$_{WollP}$ ~~hây~~ PRO kin pizza]

The head movement posits that the head *woll* originating in the complement, which stays static as in (80), or moves to the matrix domain as in (81). Before we discuss the reason why the head movement analysis is ruled out, let us delve into the evidence in 5.1 that lends support to this analysis. The following pieces of evidence are to show that the overt controller behaves like a matrix object. The evidence draws from Conditions A and B of Binding theory and partial control.

5.1 Evidence for the controller as a matrix object

5.1.1 Condition A

The Thai reciprocal pronoun *kanlaekan*, 'each other' needs to be bound by its antecedent within the same binding domain (the closest TP), complying with Condition A of Binding Theory. The rule mandating that an anaphor be bound by its antecedent within the same domain is strictly complied with in Thai. As a result of this rule, (82) is grammatically correct, whereas both (83) and (84) are unacceptable. Even though the reciprocal pronoun in both (83) and (84) is bound by its antecedent, the problem lies in the fact that the antecedent does not fall within the same binding domain. Let's examine the examples below, with the binding domains indicated within brackets.

(82) dekdek$_i$ rak kanlaekan$_i$
children love each.other
'The children love each other'

(83) *dekdek$_i$ chue [wa kanlaekan$_i$ ja chăna kaankhaengkhan]
children believe COMP each.other FUT win competition
'The children believe that each other will win the competition'

(84) *dekdek$_i$ chue [wa Sam rak kanlaekan$_i$]
children believe COMP Sam love each.other
'Children believe that Sam loves each.other'

Now, let's turn to object control environments. In applying this test, our expectation is that if the reciprocal pronoun can appear in both positions (preceding and following *hây*), then the DP controller, particularly the one occuring after *hây*, functions as the matrix object. Let's consider the following sentences.

(85) dekdek$_i$ baŋkháp kanlaekan$_i$ hây kin pizza
children force each.other hây eat pizza
'The children forced each other to eat pizza'

(86) dekdek$_i$ baŋkháp hây kanlaekan$_i$ kin pizza
children force hây each.other eat pizza
'The children forced each other to eat pizza'

Both (85) and (86) are grammatically correct. This observation implies that the DP controller is within the same binding domain as its antecedent, which is the subject of the matrix clause. If this were not the case, we would anticipate (86) to be ungrammatical. This is because if the DP controller were in the embedded subject position, it would not be locally bound to its antecedent, violating Condition A of the Binding Theory.

5.1.2 Condition B

In accordance with Condition B of the Binding Theory, a pronoun (whether subject or object) cannot be bound within the same domain as its antecedent. Thai pronouns also comply with this condition. Let's examine the examples in the finite clause below.

(87) *Sam$_i$ rak khao$_i$
Sam love 3.SG
'*Sam$_i$ loves him$_i$'

(88) Sam$_i$ chua [wâa khao$_i$ chop pizza]
Sam believe COMP 3.SG like pizza
'Sam$_i$ believes that he$_i$ likes pizza'

The distinction between the ungrammatical sentence in (87) and the grammatical one in (88) lies in the fact that, in the former, the pronoun is bound by its antecedent within the same domain, whereas in the latter, the antecedent and the embedded subject are not situated within the same clause. In applying this test, we will determine whether the pronoun can occupy the same positions as the DP controller (preceding and following *hây*).

(89) *Sam$_i$ baŋkháp khao$_i$ hây kin pizza
Sam force 3.SG hây eat pizza
'Sam force him to eat pizza'

(90) *Sam$_i$ baŋkháp hây khao$_i$ kin pizza
Sam force hây 3.SG eat pizza
'Sam force him to eat pizza'

Both (89) and (90) indicate that both positions of the overt controller are bound positions, as neither of these positions allows for a pronoun with an antecedent occupying the subject position. If the controller in both variants were something else, their occurrence in those positions should be legit.

5.1.3 Partial control

Partial control (PC) refers to a configuration in which the controller's referent constitutes a subset of the subject in the embedded predicate. Simply put, a singular controller is part of the

plural controllee. Importantly, the embedded predicate incorporates 'collective' elements such as verbs (e.g. *meet*, *gather*, *assemble*) and adverbial components (e.g. *together*, *as a team*). These collective elements necessitate the subject of the clause to be collective (i.e., plural) as seen in (91), rendering a singular subject as illegitimate as depicted in (92). However, within partial control, a singular controller is permitted to be a part of the collective subject within the embedded clause, as exemplified in (93).

(91) Students gathered at the Union.

(92) *Sam gathered at the Union.

(93) I persuaded Sam$_i$ [X$_{i+j}$ to gather at the Union]

In this test, I will make use of the adverbial *duaykan* 'together'. Likewise, when this adverb is used to modify the clause, it is required that the subject be plural.

(94) *Sam kin pizza duaykan
Sam eat pizza together
'Sam ate pizza together'

(95) Sam lae John kin pizza duaykan
Sam and John eat pizza together
'Sam and John ate pizza together'

The idea behind this diagnostic is as follows; we use a collective element to modify the embedded predicate of both variants of object control containing *hây* to create the partial control configuration, and the controller is a singular individual. If the resulting sentences are grammatical, then the partial control construction indicates that the controller must be the matrix object as the understood subject of the embedded clause must be collective/plural. This test is shown in (96) and (97).

(96) chăn baŋkháp Sam hây kin pizza duaykan
1.SG force Sam hây eat Pizza together
'I forced Sam to eat pizza together'

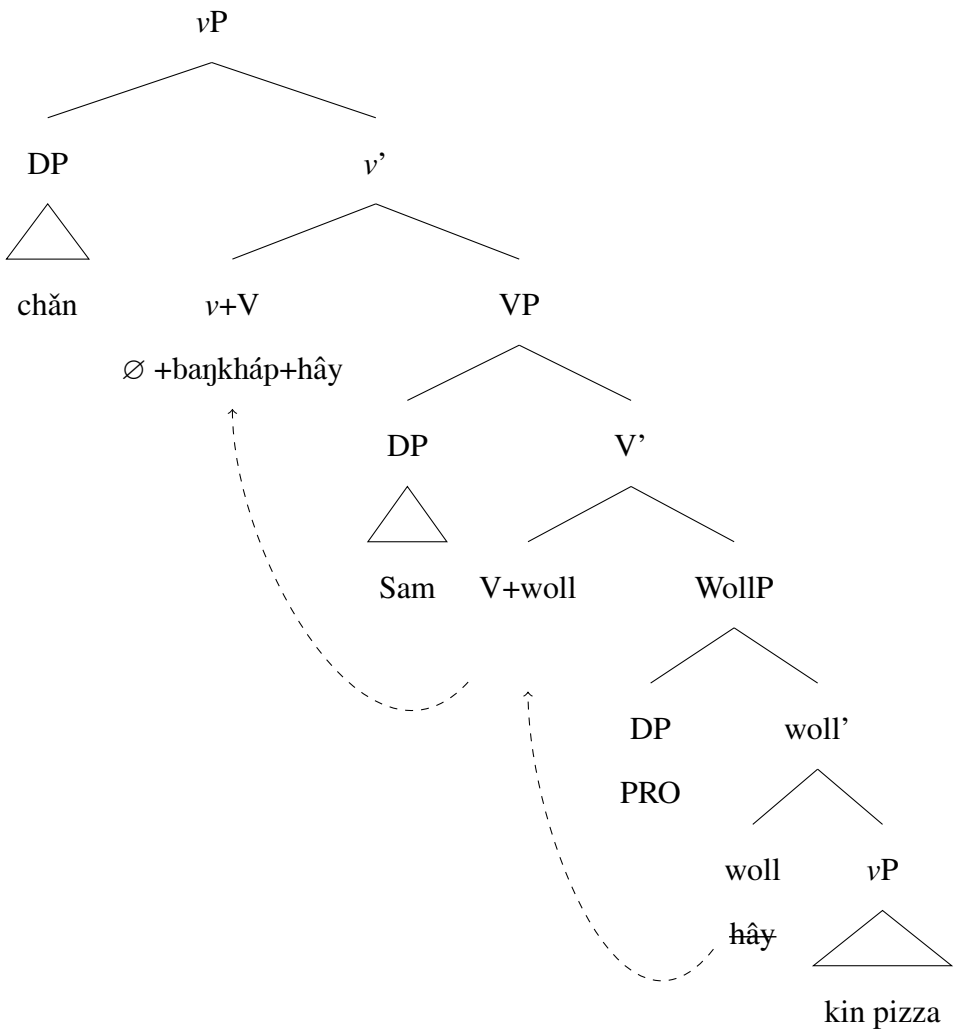
(97) chăn baŋkháp hây Sam kin pizza duaykan
1.SG force hây Sam eat Pizza together
'I forced Sam to eat pizza together'

Both variants of object control allows for *duaykan* 'together' and the resulting sentences are grammatical. This suggests that the singular controller Sam, which occurs before *hây* in (96) and after *hây* in (97), must be an object because the subject of the embedded clause, the agent of eating pizza, must be more than one individual. If the controller in (97) is the embedded subject, we would expect (97) to be ungrammatical as the subject must be plural. Therefore, treating the controller occurring after *hây* as a subject of the embedded predicate as in (43) is not on the right track.

These three pieces of evidence can support the head movement analysis, and the derivation of the object control variant which involves head movement in (98) is illustrated in (99).

(98) chăn baŋkháp hây Sam kin pizza
1.SG force hây Sam eat pizza
'I forced Sam to eat Pizza'

(99)



5.2 Drawbacks of head movement analysis

The objective of this section is to show that assuming the head movement analysis is not on the right track. The first piece of evidence arises from the fact that head movement becomes impossible when the matrix clause contains an element marking a clause boundary. In this diagnostic, I will use the adverb *mɯawaan* 'yesterday' as a marker of clausal boundary and employ a resumptive pronoun that refers to the subject in the *hây*-clause. Let's consider the examples below.[4] It is important to note that evidence from the resumptive pronoun will be discussed in detail in the

[4] *âj* serves as an addressive element, typically used when the speaker shares a close relationship with the person being addressed. It can be used to address the second or third person.

following section because it constitutes strong support for the claim that the controller undergoes movement.

(100) chăn baŋkháp âj Sam$_i$ m~~ɯ~~awaan [$_{WollP}$ hây man$_i$ kin pizza]
1.SG force ADDR Sam yesterday hây RSM eat pizza
'Yesterday, I forced Sam to eat pizza'

(101) *chăn baŋkháp hây âj Sam$_i$ m~~ɯ~~awaan [$_{WollP}$ ~~hây~~ man$_i$ kin pizza]
1.SG force hây ADDR Sam yesterday RSM eat pizza
'Yesterday, I forced Sam to eat pizza'

If the head movement analysis is valid, we would anticipate (101) to be grammatical. In (101), the sentence is derived by internally merge/move hây, which originates in the embedded clause as in (100) to the matrix verb. Again, If head movement is correct, moving the head *hây* from the embedded clause to the matrix clause should pose no issues. This implies that the switch in order between the controller and *hây* cannot be ascribed to head movement.

Another issue arises from the licensing negative polarity item (NPI). An NPI marker, *khrai-thangnan* 'anyone', has to be c-commanded by a negator.

(102) chăn **mai** baŋkháp hây **khrai-thangnan** kin pizza
1.SG NEG force hây who-NPI eat Pizza
'I didn't force anybody to eat pizza'

(103) chăn baŋkháp **mai** hây **khrai-thangnan** kin pizza
1.SG force NEG hây who-NPI eat Pizza
'I didn't force anybody not to eat pizza'

(104) *chăn baŋkháp **khrai-thangnan mai** hây kin pizza
1.SG force who-NPI NEG hây eat Pizza
'I forced anybody not to eat pizza'

(105) *chăn baŋkháp hây **khrai-thangnan mai** kin pizza
1.SG force hây who-NPI NEG eat Pizza
'I forced anybody to not eat pizza'

Suppose that the head movement analysis holds true. The derivation of (103) procedes as follows. The NPI is merged before the movement of the heads [NEG+hây]. Then to license NPI, the movement of the heads [NEG+hây] to the position that c-commands NPI is required before

Spell-Out. A critical question of why a licesing element (NEG) cannot move independently, as in (106).

(106) *chăn baŋkháp **mai khrai-thangnan** [~~mai~~ hây kin pizza]
1.SG force NEG who-NPI hây eat Pizza
'I forced anybody not to eat pizza'

Structurally, the NegP is higher than WollP, and there should be no need for the head Neg to be attached to by the *hây* first before moving. One might try to argue that the derivation of (103) involves movement, but it is that only the head of WollP (hây) moves to the matrix V. The negator is merged in the matrix domain in a position lower than the matrix V, licensing the NPI marker before the head *hây* moving up to attach NEG. However, this way of derivation, especially the merging the negator below V, is impossible as we can see the evidence in (106), where a negetor cannot be merged between vP and VP.

We have seen that the phenomenon of order switching cannot be attributed to an analysis of head movement. The postulation of such an analysis does not align with the empirical evidence that has been systematically presented. Nevertheless, it remains imperative to elucidate why there are effects of Condition A and Condition B on the controller, particularly in a variant where the controller follows *hây*.

I will attribute the compliance of the controller in both variants of *hây*-clauses with Conditions A and B to a restructuring effect. I will adopt the proposal made by Wurmbrand (2001) regarding the degree of restructuring infinitives. Wurmbrand argues that if the complement clause is projected by a category smaller than CP, then some clause union properties are possible. As demonstrated in Section 3, the infinitival complements of object control predicates, both non-*hây* clauses and *hây*-clauses, are smaller than CP. To reiterate, the former are VPs, and the latter are WollPs. This suggests that object control predicates take restructuring infinitives, and one of the clause union properties that occurs is the unification of both the matrix and the embedded clauses into a single binding domain. Consequently, the use of a reciprocal pronoun as a controller is possible in both types of *hây*-clause because wherever the reciprocal pronoun occurs, it is still bound

by its antecedent, which is in the same binding domain. Additionally, we observe a Condition B effect because, regardless of whether the controller occurs in the matrix or embedded domain, it violates the rule of Condition B as it is still bound by its antecedent.

6 A-movement analysis

6.1 Movement Theory of Control (MTC)

The Minimalist Program eliminates D-structure as a level of representation, and as an effect of such elimination, the θ-Criterion, which posits that one argument bears one theta-role, no longer holds (Chomsky 1995). Getting rid of such θ-Criterion allows an argument to receive multiple θ-roles, via movement from one θ-position to another. With this, Hornstein (1999) argues that θ-roles are assumed to be features, so a DP bears a θ-role by checking θ-role feature of a verb that it merges with. Given this, there is no limit of θ-roles that a DP can check via movement. With this line of thought, Hornstein (1999) proposes a new analysis for obligatory control (OC). In subject control construction, the DP moves overtly from the embedded clause subject position into the matrix clause to check θ-role features. This overt movement of the DP yields what we will call a *forward obligatory control* configuration in which the higher argument position, the head of the multiple θ-role movement chain, is pronounced, as in (107) which is different from the base-generated analysis, PRO in (108). Boeckx et al. (2010) emphasize that the movement of control is not a 'raising' version of control. The main distinction is that the landing site of control is a θ-position, while that of raising is a non-θ-position.

(107) Luffy$_i$ tried [t$_i$ to run.]

(108) Luffy$_i$ tried [PRO$_i$ to run.]

The assumptions of control and movement can, of course, be extended to object control constructions. Object control verbs bear two internal arguments: the object and a proposition. The object position is a θ-position, which triggers the subject of the nonfinite clause to check the feature

via A-movement, as illustrated in (109). In this illustration, Δ represents a copy resulting from the embedded subject overtly moving to the matrix object.

(109) I forced Sam$_i$ [Δ_i to eat pizza]

The analysis of Thai object control resembles (109). In the Logical Form (LF), the DP moves to from the embedded subject to the matrix indirect object, satisfying the control meaning. However, the Phonological Form (PF) is where the forward and backward control differ. I will discuss this difference and motivate the forward and backward distinction in the following subsection.

6.2 Forward and Backward Control

This analysis builds upon the Movement Theory of Control (MTC), which posits that the null element is a trace/copy of A-movement rather than a null pronominal element, PRO (Hornstein 1999, 2003; Boeckx and Hornstein 2004; Boeckx et al. 2010). MTC not only provides a compelling framework for understanding A-movement but also offers a suitable explanation for the backward variant of control, where the controller is structurally inferior to the controllee (Polinsky and Potsdam 2002; Potsdam 2009). Building upon Potsdam (2009)'s proposal of object control in Malagasy, this study argues that the distinction between forward and backward control arises from the phonological aspects of A-movement. To elaborate this, in both variants, the landing site of A-movement is the matrix object (in case of object control) in order to create control reading. The difference is that in forward control, the tail of A-movement is pronounced, whereas in its backward counterpart, the trace of A-movement, positioned structurally lower than the tail, is pronounced. In the present student, I argue that the example presented in (110) exemplifies forward control, while (111) instantiates backward control. The skeletal structure of each variant is illustrated below.

(110) chăn baŋkháp Sam [$_{WollP}$ hây ~~Sam~~ kin pizza]
1.SG force Sam hây eat pizza

(111) chăn baŋkháp ~~Sam~~ [$_{WollP}$ hây Sam kin pizza]
1.SG force hây Sam eat pizza

'I forced Sam to eat pizza'

The empirical evidence to support the A-movement analysis comes from the use of subject resumptive pronoun. In Thai, the use of resumptive pronoun in the subject position of a simple sentence is exemplified in (112), while (113) to (116) instantiate its distributions and limitations when occurring in object control environments.

(112) âj Sam$_i$ man$_i$ kin pizza thuk wan
ADDR Sam RSM eat pizza every day
'Sam eats pizza every day'.

(113) chăn baŋkháp hây âj Sam$_i$ man$_i$ kin pizza
1.SG force hây ADDR Sam RSM eat pizza
'I forced Sam to eat pizza'

(114) chăn baŋkháp âj Sam$_i$ hây man$_i$ kin pizza
1.SG force ADDR Sam hây RSM eat pizza
'I forced Sam to eat pizza'

(115) *chăn baŋkháp âj Sam$_i$ man$_i$ hây kin pizza
1.SG force ADDR Sam RSM hây eat pizza
'I forced Sam to eat pizza'

(116) *chăn baŋkháp hây man$_i$ âj Sam$_i$ kin pizza
1.SG force hây RSM ADDR Sam eat pizza
'I forced Sam to eat pizza'

It is evident that the resumptive pronoun has to occur within the *hây*-clause, yielding grammaticality in (113) and (114), and ungrammaticality in (115). (115) is ungrammatical because there is no position lower than the indirect object in the matrix clause available to host the resumptive pronoun. Besides, the resumptive pronoun has to be c-commanded by its referential antecedent, and this is why (116), violating a c-commanding condition, is ungrammatical.

The data above also reveals the movement of the controller, which originates as a subject in the embedded clause. The use of a resumptive pronoun in the *hây* clause is permissible only when the pronoun refers to the DP subject, as in (113, and the same DP can also occur and gets pronounced in the direct object position in (114). To confirm that the position of the controller in (114) is that of an indirect object, consider the following examples.

(117) chăn baŋkháp m~~u~~awaan [$_{WollP}$ hây âj Sam$_i$ man$_i$ kin pizza]
1.SG force yesterday hây ADDR Sam RSM eat pizza
'Yesterday, I forced Sam to eat pizza'

(118) chăn baŋkháp âj Sam$_i$ m~~u~~awaan [$_{WollP}$ hây man$_i$ kin pizza]
1.SG force ADDR Sam yesterday hây RSM eat pizza
'Yesterday, I forced Sam to eat pizza'

In both (117) and (118), the adverb *m~~u~~awaan* 'yesterday' is employed to delineate the boundary between the matrix and the embedded clause. In (117), it is evident that the controller is pronounced within the embedded clause, whereas in (118), the controller is pronounced in the matrix position as evidenced by its occurrence before the adverb.

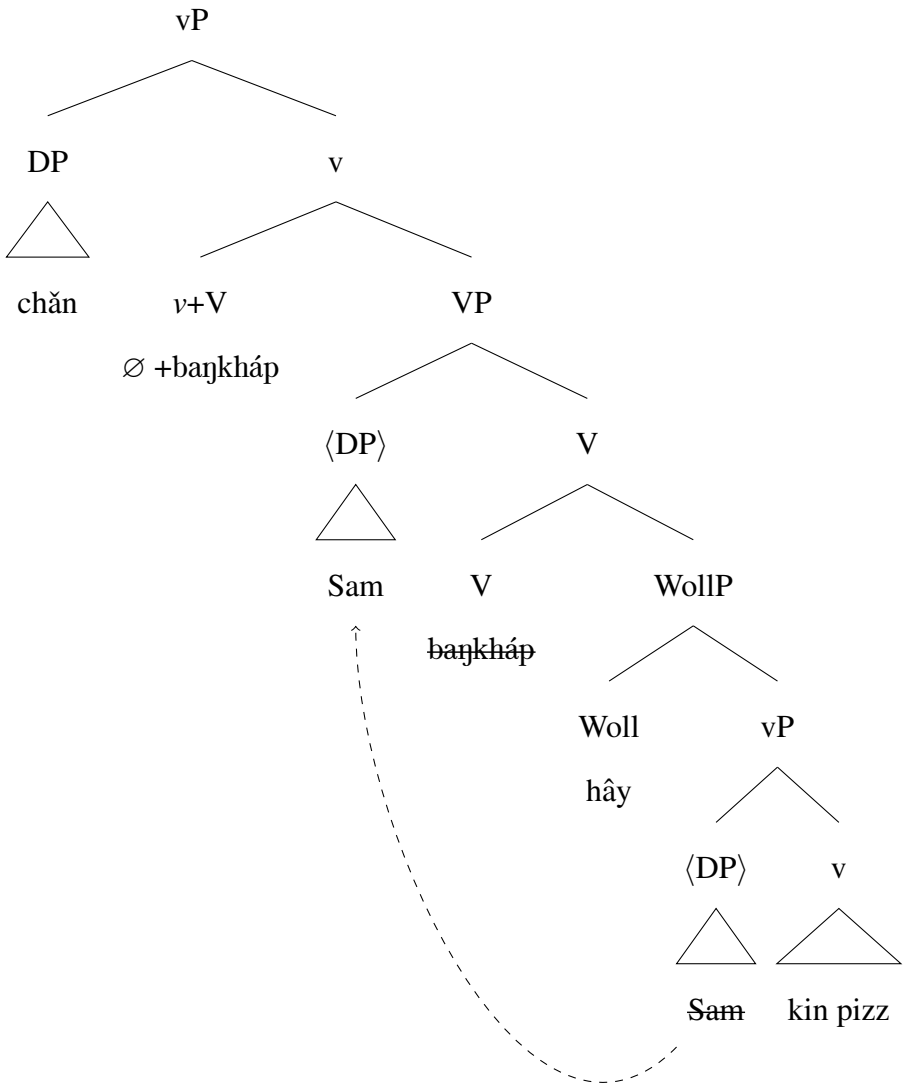
Assuming that the controller and the controllee in Thai object control undergo movement, and that the alternations of the *hây*-clause are due to phonology, also allows us to simply to capture the empirical data that head movement seems to have difficulty in doing so. For example, in the case of an NPI as a controller, one can posit that the NPI has to be pronounced in the position c-commanded by a negator. This account is better/simpler than head movement because we do not need to require that the heads [Neg+woll] move to the c-commanding position to satisfy NPI; however, this position requires only a negator.

In addition, like other studies that argue for the movement theory of control such as Polinsky and Potsdam (2002), treating the controllee as PRO in backward control as in (117) can be problematic. This is because it violates the structural requirement on referential because the overt controller does not c-command PRO, as illustrated in (119).

(119) chăn baŋkháp *PRO$_i$ [$_{WollP}$ hây Sam$_i$ kin pizza]
1.SG force hây Sam eat pizza
'Yesterday, I forced Sam to eat pizza'

Therefore,my analysis of Thai object control is illustrated in (120), wherein the copies in $\langle \ldots \rangle$ can be pronounced. The selection of which one to pronounce is determined in the Phonological Form.

(120) *Object Control in Thai*



7 Conclusion

This study sets out to answer two questions to tackle the concerns arising from the data of object control construction in Thai. The first question concerns the internal structure of non-*hây* clauses and *hây*-clauses, while the second concerns analytical analysis that can capture the reversal between the *hây* and the controller.

After conducting an in-depth investigation into the structural properties of both types of in-

finitive clauses, I propose that they are structurally distinct. Specifically, the non-*hây*-clauses are projected by VPs, whereas the *hây*-clauses are WollPs, an argument building upon Wurmbrand (2014)'s analysis of the category of future irrealis infinitives. I further argue that object control verbs behave as restructuring predicates, demonstrating their ability to take complement clauses of different sizes. Full restructuring is observed when these predicates take non-*hây* clauses, while partial restructuring is evident when they take hây-clauses.

The present study also tests three proposed analytical hypotheses, including analyses of verb-particle predicates, head movement, and A-movement (MTC), each of which could potentially explain the order-switching phenomenon between the controller and the element *hây*. Initially, the verb-particle predicate analysis is ruled out because *hây*has been proved to belong to the nonfinite constituent rather than the matrix element. While the head movement analysis, postulating the movement of *hây* from the embedded clause to the matrix V,' seems plausible at first, it ultimately falls short in capturing various pieces of empirical evidence. The analysis that proves most effective in accounting for Thai object control is the Movement of Control, which posits that the controller emerges through A-movement. The alternation in order between the controller and the head of WollP, pronounced as *hây*, illustrates the forward and backward variants of object control in Thai.

The examination of Thai object control strongly supports the incorporation of movement analysis into our theory of grammar. Nevertheless, there are unexplained issues arising from the data on the use of resumptive pronouns in *hây*-clauses. It is plausible that in Thai object control, movement involves not only A-movement but also A-bar-movement, which opens avenues for further investigation.

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