The Syntax and Semantics of
GIVE-Complex Constructions in Thai

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1. Introduction

      This paper investigates the syntactic and semantic characteristics of the lexical item *hây* in complex constructions in Thai. *hây* occurs as a matrix verb in a complex construction, meaning either 'have (someone do something)' or 'let (someone do something)' as in (1) below. Moreover, it occurs in a non-matrix subclausal unit, forming various types of constructions, as shown in (2) to (4).

(1)   nuan   hây jǔm ʔàːn nǎŋsǔː kɔ̀n   nɔːn
          Nuan   give Jum read book   before   sleep
          'Nuan had Jum read a book before going to bed.'
          Or 'Nuan let Jum read a book before going to bed.'

(2)   nuan   bɔ̀ːk hây jǔm ʔàːn   nǎŋsǔː
          Nuan   tell   give Jum read   book
          'Nuan told Jum to read a book.'

(3)   nuan   yàːk   hây jǔm nâŋ loŋ
          Nuan   want   give Jum sit   DIR
          'Nuan wanted Jum to sit down.'

(4)   nuan   thúp kɛ̂ːw   hây tɛ̀ːk
          Nuan   hit   glass   give be broken
          'Nuan hit the glass in order for it to be broken.'

      Beside the above occurrences, *hây* occurs as a verb of possession transfer, meaning 'give' and a beneficiary marker, translated as 'for' in English, as shown below respectively.

(5)   nuan   hây khàʔnǒm jŭm
        Nuan   give sweets   Jum
        'Nuan gave Jum the sweets.'

(6)   nuan   kamlaŋ   tham   kaːnbâːn   hây jŭm
        Nuan   ASP   do   homework   give Jum
        'Nuan is doing homework for Jum.'

Due to the semantic similarities between *hây* as a matrix verb, as in (1), and *hây* that is preceded by another verb in such constructions as in (2) to (4), these instances of complex constructions are grouped together and labeled as serial verb constructions. (Thepkanjana 1986). However, there is a problem in categorizing a lexical item that occurs in this type of construction, that is, whether it is a verb or a syntactic marker that functions as a linkage between two clausal units. This problem is crucial for classifying construction types as serial verb construction since serial verb constructions are defined as constructions in which series of verbs or verb phrases are juxtaposed without any overt marker for clausal relations, still representing a single event (Zwicky 1990; Hansell 1993). A similar phenomenon is found in Saramaccan as shown below.

(7)   Kofi   meki   a / en   go   na   wowoyo
        Kofi   make   he / him go   LOC   market
        'Kofi made him go to the market.'

(Seuren 1990: 26)

(8)   alen fado meki   den   prani   gro
        rain fall make   the   plants   grow
        'Rain falls so that the crops grow.'

(Sebba 1987: 56)[1]

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[1]Seuren, Pieter A.M. 1990. Serial verb constructions. In Brian D. Joseph and Arnold M. Zwicky, eds., *When verbs collide: Papers from the 1990 Ohio State Mini-Conference on serial verbs Working Papers in Linguistics*, No.39. 14-33. Quoting Mark Sebba. 1987. *The syntax of serial verbs: An investigation into serialisation in Sranan and other languages*. Amsterdam: Benjamins.

Sebba (1987) argues that *meki* is reanalyzed as a conjunction to some native speakers, against an analysis of Voorhoeve (1975)[2] who takes a construction like (8) as an instance of a serial verb construction.

We can see that in languages in which syntactic markers share the same form as content words one needs independent criteria to define the function of the lexical item in particular constructions. This paper proposes that the semantic similarities among various uses of *hây* can be explained in terms of a schematic representation of the semantic components of the lexical item. Consequently, whether *hây* in each construction type functions as a verb or a clausal linkage marker is independently decided from its syntactic and semantic relationship with other components in the construction. Moreover, a systematic analysis of the clausal structure of each construction type is needed. The analysis is based on the framework of Role and Reference Grammar (Van Valin 1993; Van Valin and LaPolla 1997).

The analysis begins with *hây* in a simple construction, including *hây* as a verb of possession transfer and as a beneficiary marker. The next section deals with *hây* as a matrix verb in a jussive construction. Then, I investigate the clausal linkage types of constructions with *hây*, namely, jussive, propositional attitude and purposive constructions. The findings would lead to the justification for syntactic category of *hây* in each construction type.

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[2]Seuren, Pieter A.M. 1990. Serial verb constructions. In Brian D. Joseph and Arnold M. Zwicky, eds.,

When verbs collide: Papers from the 1990 Ohio State Mini-Conference on serial verbs Working Papers in Linguistics, No.39. 14-33. quoting Jan Voorhoeve. 1975. Serial verbs in Creole. Paper presented at Hawaii Pidgin and Creole Conference.

2. Semantic properties of the lexical item *hây*

This section gives an introduction to the semantic properties of the lexical item *hây* in three kinds of environments: as a verb of possession transfer, as a beneficiary marker and as a jussive verb. Two semantic aspects to be investigated are animacy restrictions on subject NPs and semantic classes of verbs.

2.1 *hây* as a verb of possession transfer

As a verb of possession transfer, *hây* is followed by two arguments, a theme followed by a recipient. This order is fixed, and the other way around is ungrammatical. To illustrate,

(9)   nuan   hây kha?nǒm   jǔm
          Nuan   give sweets   Jum
          'Nuan gave Jum the sweets.'

(9)   *nuan hây jum kha?nǒm
           Nuan give Jum sweets

As for animacy, *hây* requires its subject NP to be animate. Thus, a sentence with an inanimate subject is not acceptable.

(10)   *fǒn   hây nám   raw
          rain   give water   us
          'Rain gives us water.'

We cannot use sentence (10) to express *fǒn* 'rain' as having a semantic role of possessor who has an intent to transfer the possession of *nám* 'water' to the receiver.

Thus, the semantic representation of *hây* can be formulated as follows:

(11)   [**do′** (x, ∅) CAUSE INGR **have′** (y, z)]

The above logical structure is the semantic representation of the verb of possession transfer *hây* 'give', which is an achievement verb, represented by the modifier INGR. The x argument is a participant who transfers the possession to the other participant,

represented by the *y* argument, and the *z* argument is an object of transfer. As a causative achievement verb, *hây* involves an unspecified action causing another state of affairs, namely, an achievement.

2.2 *hây* as a beneficiary marker

As a beneficiary marker, *hây* expresses two kinds of beneficiaries, namely, deputative beneficiaries and recipient. According to Van Valin and LaPolla (1997), a deputative beneficiary is the participant who receives benefit from the action without doing the action. That is, the actor who has the intent that the beneficiary need not do the action performs the action; the recipient is a participant who receives concrete objects from the actor. There are two kinds of recipients marked by *hây*, namely, intermediate and ultimate recipients.

(12) nuan   sák   phâː   hây   lûːk   saʔmɔ̌ː.
      Nuan   wash   clothes give kid   always.
      lûːk   ləːy sák   ʔeːŋ   mây pen
      kid   thus wash   self   not able
      'Nuan always washes clothes for her kid. Thus, her kid does not know how to wash clothes her/himself.' (= Nuan washes clothes in her kid's place so that her kid does not have to do it.)

(13) nuan   yɪp nǎŋsɯ̌ː   khɔ̌ːŋ lɔ̀n hây jǔm
      Nuan   grab book   POSS   3rdF give Jum
      phrɔ́ʔ   jǔm   khɔ̌ː   duː
      because Jum   ask   look
      'Nuan grabbed her book and gave it to Jum because Jum asked to see it.'

(14) nuan   sɯ́ː khéːk chín   nán   hây   lûːk
      Nuan   buy   cake   CL   DEM   give   kid
      phrɔ́ʔ   lûːk   yàːk   kin
      because kid   want   eat
      'Nuan bought that cake for her kid because her kid wanted to eat it.'

Sentence (12) illustrates the usage of *hây* as a deputative beneficiary while sentences (13) and(14) *hây* marks recipients, intermediate and ultimate, respectively. Intermediate

recipient refers to a participant that has a semantic role as a goal; and ultimate recipient refers to a recipient to whom the possession is transferred.

Note that *hây* in Thai cannot be followed by an inanimate argument. Thus, the following sentences are not possible.

(15)   *nuan   thaːsǐː   hây bâːn
          Nuan   paint   give house
         'Nuan painted for the house.'

(16)   *nuan   rɔ́ːŋ   phleːŋ   hây   khwaːmsanùksanǎːn
          Nuan   cry out   song   give   fun
         'Nuan sang a song for fun.'

As for animacy, a beneficiary marker *hây* occurs only in a clause with an animate subject, as shown by the unacceptable sentence below.

(17)   *dæ̀ːt   sɔ̀ːŋ hây raw
          sunlight   shine give us
         'The sunlight shines for us.'

Moreover, the beneficiary marker *hây* does not co-occur with state verbs or achievement verbs. To illustrate,

(18)   *nuan   diːtçay   hây jǔm
          Nuan   be glad   give Jum
         'Nuan was glad for Jum.'

(19)   *nuan   tçəː kraʔpǎw   thǐ hǎːy   pay   hay jǔm
          Nuan   find purse   REL be lost   OPR   give Jum
         'Nuan found the lost purse for Jum.'

The verb in (18) is a state verb and in (19) it is an achievement verb. Both are unacceptable sentences. Therefore, we conclude that a beneficiary marked by *hây* may co-occur only with an activity or accomplishment verb.

The semantic representation follows what Jolly (1993) has proposed for a purposive marker. She argues that *for* in English has two functions: causative and purposive; thus, it has two semantic components, as follows:

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(20)   Semantic content of purposive *for*:

(1) **want′** (x, LS$_2$)
(2) DO (x, [LS$_1$ CAUSE LS$_2$])

To illustrate, an English sentence (21) can be semantically represented in a logical structure as shown below. (Jolly 1993: 303)

(21)   John baked a cake for Rita.

The above sentence has a benefactive *for*, which includes both semantic components in (20), as illustrated below:

[**want′** (John, LS$_2$)] ∧ [DO (John, [LS$_1$ CAUSE LS$_2$])]
   LS$_1$ = [**do′** (John) CAUSE [BECOME **baked′** (cake)]]
   LS$_2$ = [BECOME **have′** (Rita, cake)]

Therefore, a fully elaborated logical structure for (21) is as follows:

(21′)   [**want′** (John, [BECOME **have′** (Rita, cake)])] ∧ (John, [[**do′** (John) CAUSE [BECOME **baked′** (cake)]] CAUSE [BECOME **have′** (Rita, cake)]])

When the benefactive has a deputative reading, the interpretation for LS$_2$ is as follows:

LS$_2$ = NOT LS$_1$

Thus, when a sentence like (21) has a deputative interpretation, that is, 'John baked a cake in place of Rita', that is to say, 'Rita did not bake a cake', its logical structure is represented as follows:

(21″)   [**want′** (John, [NOT **do′** (Rita) CAUSE [BECOME **baked′** (cake)]])]
   ∧ [DO (John, [[**do′** (John) CAUSE [BECOME **baked′** (cake)]]
   CAUSE [NOT **do′** (Rita) CAUSE [BECOME **baked′** (cake)]]])]

In Thai, as shown above, it is found that *hây* has two readings: deputative beneficiary and recipient. Following Jolly (1993), sentences of the three beneficiary readings--deputative, intermediate recipient and ultimate recipient--have the following logical structures:

(22) nuan   sák   phâː   hây lûːk   (Deputative beneficiary)
      Nuan   wash   clothes give kid
      'Nuan washed clothes for her kid.'

(22′) [**want′** (Nuan, LS$_2$)] ∧ [DO (Nuan, [LS$_1$ CAUSE LS$_2$])]
          LS$_1$ = [**wash′** (Nuan, phâː)]
          LS$_2$ = [NOT **wash′** (lûːk, phâː)]

(23) nuan   yıp năŋsɯ̌ː khɔ̌ːŋ   lɔ̀n hây jŭm   (Intermediate recipient)
      Nuan   grab book   POSS   3rdF give Jum
      'Nuan grabbed her book and gave it to Jum.'

(23′) [**want′** (Nuan, LS$_2$)] ∧ [DO (Nuan, [LS$_1$ CAUSE LS$_2$])]
          LS$_1$ = [**grab′** (Nuan, năŋsɯ̌ː)]
          LS$_2$ = [INGR **be-LOC′** (Jum, năŋsɯ̌ː)]

(24) nuan   sɯ́ː khéːk   chín   nán   hây lûːk   (Ultimate recipient)
      Nuan   buy cake   CL   DEM   give kid
      'Nuan bought that cake for her kid.'

(24′) [**want′** (Nuan, LS$_2$)] ∧ [DO (Nuan, [LS$_1$ CAUSE LS$_2$])]
          LS$_1$ = [**buy′** (Nuan, khéːk)]
          LS$_2$ = [INGR **have′** (lûːk, khéːk)]

To sum up, *hây* can be used as a beneficiary marker indicating a deputative beneficiary, an intermediate recipient and an ultimate recipient. It co-occurs with animate subjects only. Finally, it is only compatible with activity or accomplishment verbs.

2.3 *hây* as a matrix verb in a complex construction

So far we have seen that the lexical item *hây* can be syntactically categorized as a verb of possession transfer and a beneficiary marker. In this section we move to *hây* that is used in a complex construction as a matrix verb. An example is the following:

(25) nuan   hây jŭm nâŋ loŋ
      Nuan   give Jum sit OPR
      'Nuan had Jum sit down.' Or, 'Nuan let Jum sit down.'

We first consider its semantic restriction on animacy. The verb *hây* as a matrix verb of the construction requires an animate subject NP.

(26) nuan   hây jǔm pɪt   nâːtàːŋ
      Nuan   give Jum close window
      'Nuan had Jum close the window.'
      or 'Nuan let Jum close the window.'

(27) mɛ̂ː   cháʔniː   hây lûːk   kin klûay kɔ̀ːn
      mother   gibbon   give offspring eat banana before
      'The mother gibbon had its offspring eat the banana first.'
      or 'The mother gibbon let its offspring eat the banana first.'

(28) *phaːyúʔ hây jǔm pɪt   nâːtàːŋ
      storm   give Jum close   window
      'The storm had Jum close the window.'
      'The storm let Jum close the window.'

In sentences (26) and (27) the subject NPs are animate, that is, 'Nuan' and 'the mother gibbon'. However, sentence (28) is ungrammatical when the subject NP is inanimate, that is, *phaːyúʔ* 'storm'. Therefore, it is obligatory that the subject NP of the matrix verb *hây* be animate.

In terms of animacy, typically, the undergoer of the matrix verb *hây*, which is also the actor of the non-matrix verb, is also animate. However, it is also possible for the actor of the non-matrix verb to be inanimate, as shown below:

(29) nuan   hây ʔaːkàːt nay hɔ̂ŋ   thàːytheː   saməː.
      Nuan   give air   in   room   circulate   always.
      hɔ̂ŋ   tɕɯɯŋ   mây ʔàp
      room   thus   not be stuffy
      'Nuan let the air in the room circulate all the time. The room is, thus, not stuffy'

Sentence (29) shows that an inanimate NP, *ʔaːkàːt* 'air', can be the undergoer of *hây* and the actor of the non-matrix predicate. However, it is not the case that any inanimate NP can occur as undergoer of the matrix verb *hây*. Consider the following examples.

(30) *nuan hây kɛ̂ːw tɛ̀ːk
 Nuan give glass be broken
 'Nuan had the glass become broken.'
 Or, 'Nuan let the glass become broken.'

(31) nuan hây kɛ̂ːw klîŋ pay rɯ̂ayrɯ̂ay lɛ́ːwtɕɯɯŋ tɕàp wáy
 Nuan give glass roll DIR continually then hold OPR
 'Nuan let the glass keep rolling, and then she held it.'

We can see that a sentence with *kɛ̂ːw* 'glass' as an undergoer as in (30) is unacceptable, but the same NP as actor of an activity verb in (31) is acceptable. Therefore, there is no semantic restriction of animacy on the shared NP of the construction, but the semantic class of the non-matrix verb is restricted to activity and accomplishment verbs only. Compare the following data with the above.

(32) *nuan hây jǔm diːtɕay
 Nuan give Jum be happy
 'Nuan had Jum be happy.'

(33) *nuan hây jǔm tɕəː kràʔpǎw thîː hǎːy pay
 Nuan give Jum find purse REL be lost OPR
 'Nuan had Jum find the lost purse.'

Sentences (32) and (33) are not possible because the semantic class of the non-matrix verb is state and achievement, respectively.

Another important semantic feature of *hây* involves the notion of causation. As suggested in the translation of the above data, the verb *hây* in this type of construction is ambiguous with respect to the semantic aspect of causation; that is, without enough context, it could mean both 'have' and 'let'. For example,

(34) nuan hây jǔm pay ŋaːnlíaŋ
 Nuan give Jum go party
 (a)'Nuan let Jum go to the party.'
 (b)'Nuan had Jum go to the party.'

Sentence (34) is ambiguous in that it could be interpreted as either the participant *Jum* being forced by the other participant, *Nuan*, to perform the action of 'going to the party',

or *Jum* being given permission to perform such an action. However, a specific sense of the verb is chosen in a particular context. To illustrate,

(35) nuan   hây   jŭm pay   ŋaːnlíaŋ
      Nuan   give Jum go   party
      tháŋthîː lɔ̀n rúː   wâː   jŭm klìat ŋaːnlíaŋ
      although 3rdF know CMPL   Jum hate   party
      (a) *'Nuan let Jum go to the party although she knows that Jum hates parties.'
      (b) 'Nuan had Jum go to the party although she knows that Jum hates parties.'

(36) nuan   hây   jŭm   pay   ŋaːnlɹáŋ
      Nuan   give Jum   go   party
      tháŋthîː tæ̀ːkɔ̀n   lɔ̀n khəy   hâːm
      although previously 3rdF used to forbid
      (a) 'Nuan let Jum go to the party although she used to forbid her before.'
      (b) *'Nuan had Jum go to the party although she used to forbid her before.'

We can see that semantic ambiguity of *hây* can be eliminated in an adequate context: *hây* means 'have (someone do something)' in (35), but 'let' in (36).

Such an unspecified causation can be explained in terms of force dynamic patterns, proposed by Talmy (1988). In his terms, "force dynamics" is a generalization over the linguistic notion of "causation"; it involves how entities interact with respect to force. (Talmy 1988: 49-50). There are two patterns of force dynamics that *hây* constructions refer to. First, a stronger force element impinges against another force element that has a tendency to rest, thus causing it to perform an action. An example of this pattern is (35) in which *Jum*, as a weaker force element, does not want to perform the action, but is forced to do so by *Nuan*, as a stronger force element. Second, a stronger force element disengages from another force element that has a tendency to move. This is exemplified by (36) in which *Nuan*, still a stronger force element, releases a blockage that could prevent *Jum* from performing an action. The property that both patterns share is that an agent is a stronger force element and a non-agent is a weaker one. Another example is as follows:

(37) nuan   hây ʔaːkàːt nay hɔ̂ŋ   thàːytheː   samǒː
      Nuan   give air   in   room circulate   always
      (a)'Nuan often lets the air in the room circulate all the time.'
      (b)*'Nuan often has the air in the room circulate all the time.'

In (37), *Nuan* as an agent is a stronger force element while 'the air' has tendency to move, but without the disengagement performed by the agent the circulation would not occur. That is, the agent, say, opens the door, windows, etc. to allow the air to circulate. In this situation, *hây* is not ambiguous since the air has an inherent property to move, and the agent has power to allow the action by releasing any blockages.

Therefore, the important semantic component that the *hây* construction involves is that the agent's intent determines the non-agent's performing an action; that is, the agent can force or allow the non-agent to do an action.

To sum up, there are two semantic restrictions on this type of construction: the subject NP must be animate and the semantic class of the non-matrix verb must be either an activity or accomplishment. Also, with respect to causation, the action in the non-matrix is performed in accordance with the intent of the agent.

Recall the semantic structure of *hây* as a beneficiary marker. We find that the schematic representation proposed by Jolly (1993) can also be applied here, since both constructions require an animate subject NP, must co-occur with activity or accomplishment verbs only, and have both an intent and causation as their semantic component.

Then, we could provide a semantic representation for the complex verb *hây* as follows:

(38) [**want′** (x, LS$_2$) $\wedge$ DO (x, [LS$_1$ CAUSE LS$_2$])]
          LS$_1$ =   [**do′** (x, $\varnothing$)]
          LS$_2$ =   (1)**do′** (y, [**pred′** (y) or (y, z)])
              or (2) BECOME **do′** (y, [**pred′** (y) or (y, z)])

From this schema, the x argument has the intent for another action to occur as seen in the first component, that is, **want′** (x, LS$_2$). It is also an actor who performs an unspecified action to cause the action represented in LS$_2$. The unspecified action is represented as

[**do′** (x, ∅)]. LS₂ represents a logical structure of the non-matrix verb and its arguments. LS₂ can be an activity or an accomplishment.

To illustrate, sentence (39) has the semantic structure represented in (39′) below.

(39)　nuan　hây jǔm pɪt　nâːtàːŋ
　　　Nuan　give Jum close window
　　　'Nuan had Jum close the window.'
　　　or 'Nuan let Jum close the window.'

(39′)　**want′** (nuan, [BECOME **do′** (Jum, [**close′** (Jum, nâːtàːŋ)])]) ∧ DO (nuan, [[**do′** (nuan, ∅)] CAUSE [BECOME **do′** (Jum, [**close′** (Jum, nâːtàːŋ)])]])

From the above, sentence (39) can be represented with two semantic components:

(1) **want′** (x, LS₂), where the *x* argument is *Nuan*, the *y* argument is *Jum*, and LS₂ is [BECOME **do′** (Jum, [**close′** (Jum, nâːtàːŋ)])]

(2) DO (x, [LS₁ CAUSE LS₂]), where LS₁ is the unspecified action done by the *x* argument, namely, [**do′** (nuan, ∅)]

To sum up, the construction with *hây* as a matrix verb requires an animate subject. Also, it allows only an activity or an accomplishment as a non-matrix verb. With respect to its causality, *hây* can be used in two types of situations: (1) a situation where a stronger force element expressed by the subject NP impinges against another force element, and (2) a situation where the stronger force element disengages barriers for the weaker force element to perform the action. Finally, the semantic structure of the matrix verb *hây* in this type of construction is consistent with that of the beneficiary marker *hây*, that is, they both involve two semantic components: the intent and the causation.

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3. Clausal linkage of the construction with *hây* as matrix verb

This section investigates the juncture and nexus type of complex constructions with *hây* as a matrix verb. We first begin with a review of the properties of nexus and juncture types in Thai. Then, given those properties, we characterize the construction in question.

3.1 Review of juncture and nexus types

According to RRG, complex sentences are recognized as having a layered structure such that a complex construction is a unit that exhibits a particular relationship with another unit. Such a complex unit is referred to as a juncture, and a relationship among junctures is called nexus. There are three kinds of junctures, that is, nucleus, core and clause. Junctures can be related to one another in three nexus types: coordination, cosubordination and subordination.

As a layered structure, a nuclear juncture is a core composed of multiple nuclei, a core juncture a single clause made up of multiple cores, and a clausal juncture a whole sentence made up of two or more clauses. A major characteristic of a nuclear juncture is the argument pooling. That is, the two verbs in the juncture act as if they are a single predicate, so that they pool all their arguments together as a single set. As for core junctures, the two cores share at least one argument, and core operators may be allowed to have an independent scope over a particular core. In a clausal juncture, however, each clause is independent of the others, with respect to the argument realization, so that arguments of the clauses are not structurally shared, rather any missing arguments are subject to pragmatic conditions of anaphor.

Nexus relations are relationships between two subclausal units in a juncture, thus making up nine possible combinations of nexus and junctures. Their properties can be broadly summarized as follows:

1) Coordination is a kind of relationship among linked juncts that are structurally independent at the level of juncture; for example, a clause in a clausal coordination construction can occur independently on its own outside the clausal chain.

2) Subordination, either as an argument or a modifier, is a kind of part-whole relationship between a matrix unit and one or more structurally dependent juncts; for

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example, a subordinate clause cannot occur independently on its own outside the clausal chain.

3) Cosubordination is a relationship among juncts that are interdependent due to being within the scope of one or more shared operators, for example, a construction in which one clause is dependent on another clause by virtue of shared tense is a cosubordination.

3.2 Characteristics of juncture types in Thai

In Thai there are two properties that differentiate juncture types, namely, the realization of arguments and the occurrence of adverbs.

The realization of arguments in a non-matrix subclausal unit is an important property for distinguishing types of juncture in Thai. As mentioned earlier, core arguments are pooled together in case of a nuclear juncture, and at least one argument is shared by multiple cores in a core juncture, while there is no argument sharing in a clausal juncture. That is to say, there are gaps or missing NPs in some types of predicates. Gaps or zeroes are allowed in many cases, but not all are of the same kind. There are two kinds of zeroes: a linking zero and an anaphoric zero. A linking zero is a zero that structurally occurs to yield cohesion among subclausal units, while an anaphoric zero is the one that occurs by virtue of pragmatic principles.

We first consider the following set of examples:

(40) nuan   phlàk   tóʔ   tua   nán   lóm
     Nuan   push   table   CL   DEM   fall down
     'Nuan pushed that table down.'

(41) nuan   phlàk   tóʔ   tua   nán   tɕon   lóm
     Nuan   push   table   CL   DEM   until   fall down
     (a)'Nuan pushed that table until it fell down.'
     (b)'Nuan pushed that table until she fell down.'

There are two predicates in each of the above sentences, that is, *phlàk* 'push' and *lóm* 'fall down', and two NPs, that is, Nuan and *tóʔ tua nán* 'that table'. Sentence (40) shows a juxtaposition of the two predicates without any markers or conjunctions, while sentence (41) has a conjunction *tɕon* 'until' between the two predicates. Semantically, sentences

(40) and (41) are very similar in terms of the description of a state of affairs. Both involve an action of 'pushing a table' indicated in the first predicate and the action of bringing about an event of 'falling down'. What is at stake here is the fact that when the two predicates are linked by a conjunction, a context-free sentence like (41) could be ambiguous. That is, the participant who undergoes the event of 'falling down' could be either of the participants in the first predicate, that is, 'Nuan' or 'that table', whereas in (40) the only possible interpretation is that it is the 'table' that undergoes the event of 'falling down'. To sum up, the ambiguity in (41) arises from the fact that the undergoer of the predicative verb 'fall down' is a discourse zero, subject to contextual construal. In (40) there is no ambiguity since the NP 'table' itself is interpreted as an undergoer of both the first predicate and the second predicate by virtue of the construction itself.

The above semantic interpretation of the state of affairs and its participants shows the possibility for the position before a verb in the second predicate to have an argument, even in the form of zero. Based on sentence (40), we can apply a test for the acceptability of argument realization in the construction, as follows:

(42)　*nuan　phlàk　tóʔ　tua　nán　tóʔ　tua　nán　lóm
　　　 Nuan　push　table　CL　DEM　table　CL　DEM　fall down

(43)　*nuan　phlàk　tóʔ　tua　nán　man　lóm
　　　 Nuan　push　table　CL　DEM　3rd　fall down

The unacceptable sentences in (42) and (43) show that the realization of an NP as an argument for the second predicate is not possible. A well-formed sentence for this type of construction requires the second predicate to share its argument with the preceding predicate.

Now we apply the same test with sentence (41), in which there is a conjunction before the second predicate.

(44)　nuan　phlàk　tóʔ　tua　nán　tɕon　man　lóm
　　　 Nuan　push　table　CL　DEM　until　3rd　fall down
　　　 'Nuan pushed that table until it fell down.'

(45)　nuan　phlàk　tóʔ　tua　nán　tɕɔn　tuaʔeːŋ　lóm
　　　Nuan　push　table　CL　DEM　until　self　　　fall down
　　　'Nuan pushed that table until she, herself, fell down.'

Sentences (44) and (45) are alternations of the sentence (41). In these two sentences, an undergoer of the rightmost predicate is overtly realized as *man* 'it' and *tuaʔeːŋ* 'self' respectively, and the sentences are still grammatical. We can conclude, then, that a zero as an undergoer of the result predicate in a construction with a conjunction is not structural, rather it is anaphoric in that its referent can be obtained via pragmatic principles.

　　　Given this test as a distinction for types of zeroes in Thai complex constructions, we find that in a sentence with a conjunction linking two predicates, there is a position for a core argument before the linked predicate such that an omitted argument, if any, is subject to anaphoric principles. Therefore, we can say that in clausal junctures core arguments in non-matrix predicates are optionally realized, and that any constructions that exhibit a zero as an obligatory property are nuclear or core junctures.

　　　Another test for juncture type in Thai is the intervention of adverbs between two juncts. It is found that postverbal adverbs that modify the matrix verb occur at the end of the matrix clause in a clausal juncture. In a core juncture, adverbs that modify only the verb in the matrix core must occur after the non-matrix core, not the matrix core. But in a nuclear juncture, no adverbs that modify only the verb in the matrix nucleus are allowed. To illustrate,

(46)　nuan　thúp　kɛ̂ːw　bay　nán　ræːŋræːŋ
　　　Nuan　hit　　glass　CL　DEM　quite hard
　　　tɕɔn　man　tɛ̀ːk
　　　until　3ʳᵈ　be broken
　　　'Nuan hit that glass quite hard until it was broken.'

(46′) *nuan　thúp　kɛ̂ːw　bay　nán
　　　Nuan　hit　　glass　CL　DEM
　　　tɕɔn　man　tɛ̀ːk　　ræːŋræːŋ
　　　until　3ʳᵈ　be broken　very hard

Sentence (46) contains two clauses linked with a conjunction *tɕon* 'until', with an adverb *rǽːŋrǽːŋ*, 'quite hard,' which modifies the activity verb *thúp* 'hit'. The adverb can occur at the end of the clause where the modified verb occurs only, so sentence (46′) where the adverb is placed at the end of the other clause is unacceptable. Thus, sentence (46) is a clausal juncture.

Next we consider the occurrence of adverbs in a core juncture.

(47) phon   chuan   nuan   kin   khâːw duây   sĭaŋ   râːrəːŋ
      Phon   persuade   Nuan   eat   rice   with   voice   cheerful
      'Phon persuaded Nuan, with cheerful voice, to eat.'

(47′) *phon   chuan   nuan   duây   sĭaŋ   râːrəŋ   kin   khâːw
       Phon   persuade   Nuan   with   voice   cheerful   eat   rice

(47″) *phon   chuan   duây   sĭaŋ   râːrəŋ   nuan   kin   khâːw
       Phon   persuade   with   voice   cheerful   Nuan   eat   rice

In sentence (47) a postverbal adverb phrase *dûay sĭaŋ râːrəːŋ* 'with cheerful voice' modifies the matrix verb chuan 'persuade'. It occurs at the end of the clause containing two cores. Sentences (47′) and (47″) are unacceptable when the adverb phrase occurs between the two cores, neither before nor after the shared argument. We conclude that in a core juncture, adverbs that modify only the matrix core are allowed but they must occur at the end of the core juncture, not between the two cores.

As for nuclear junctures, the matrix junct is not allowed to have an adverb specifically modify only the verb in the matrix. To illustrate,

(48) *nuan   thúp   kɛ̂ːw   bay   nán   rǽːŋrǽːŋ   tɛ̀ːk
       Nuan   hit   glass   CL   DEM   quite hard   be broken

(48′) *nuan   thúp   kɛ̂ːw   bay   nán   tɛ̀ːk   rǽːŋrǽːŋ
       Nuan   hit   glass   CL   DEM   be broken   quite hard

In both (48) and (48′) the adverb *rǽːŋrǽːŋ* 'quite hard' which modifies only the activity verb is not allowed to occur either at the end of the matrix nucleus, or at the end of the juncture.

To sum up, in Thai there are two major features that distinguish complex constructions into different juncture types, namely, the realization of arguments and the occurrence of adverbs between two juncts. Nuclear junctures have pooled arguments and do not allow a matrix verb to be independently modified by a postverbal adverb. Core junctures have obligatorily shared arguments and allow a matrix verb to be independently modified by a postverbal adverb but require that the adverb occur at the end of the juncture. Clausal junctures do not have either pooled or shared arguments and require that a postverbal adverb, if any, occur at the end of the clause that contains the verb it modifies.

3.3 Characteristics of nexus types in Thai

According to RRG, there are three kinds of nexus relations, which are relationships between two subclausal units, namely, coordination, cosubordination, and subordination. This paper proposes two tests to be used in distinguishing nexus types of constructions in question, namely, the *What*-question test for subordination and the operator dependency for coordination and cosubordination.

Firstly, a *What*-question test is to be used to find out whether the relationship between the two subclausal units at issue is subordination. In Thai, interrogative expressions occur in situ, so a NP in ordinary argument position can be replaced by a question word to form a question. To illustrate,

(49)   nuan   hây khàʔnǒm jǔm
       Nuan   give sweets   Jum
       'Nuan gave Jum the sweets.'

(49′)   nuan   hây ʔaray   jǔm
       Nuan   give what   Jum
       'What did Nuan give Jum.'

(49″)   nuan   hây khàʔnǒm khray
       Nuan   give sweets   who
       'To whom did Nuan give the sweets?'

The above data illustrate question expressions in Thai. Sentence (49) is a non-question with the verb *hây* followed by two arguments, an undergoer and a recipient. To form a

question asking about each argument, we replace each argument with a question word. In (49′) *ʔaray* 'what' is a question word for non-human arguments; in (49″) *khray* 'who' is for human arguments. These question words occur in the same position as arguments in non-question forms.

Likewise, in a complex construction a subclausal unit that functions as an argument can be replaced by the question word *ʔaray* in the same position. To illustrate,

(50) A: nuan   diːtɕay   ʔaray
         Nuan   be glad   what
         'What is Nuan happy about?'
     B: nuan   diːtɕay   thîː   wanníː pen   wanyùt
         Nuan   be glad   CMPL   today   be   holiday
         'Nuan is happy that today is a holiday.'

The issue is to find out the relationship between a clause marked by *thîː* and its preceding matrix unit in (50B). We ask the *What*-question in (50A), and find that (50B) is a possible answer for the question. We, thus, conclude that the *thîː* clause is an argument subordination.

More examples are as follows:

(51) A: *nuan   thúp   ʔaray
          Nuan   hit   what
          'What did Nuan hit?'
     B: nuan   thúp   kɛ̂ːw   bay   nán   tɛ̀ːk
         Nuan   hit   glass   CL   DEM   be broken
         'Nuan broke that glass.'

The part at stake is *kɛ̂ːw bay nán tɛ̀ːk*, meaning 'the glass is broken'. To find out if the construction is an argument subordination, we replace the string with the *What*-question word, as shown in (51A). The result is that the question is not compatible with the intended answer. We conclude that the nexus is not an argument subordination.

In order to differentiate cosubordination and coordination from each other, we apply a test of operator dependency. If one junct can be modified by operators independently from the other junct, they are related as coordination; if the two juncts are operator-dependent, they are related as cosubordination. However, operators correspond

to the layered structure of the sentence; thus, what operators can be used to test for nexus type rely upon the juncture type. For example, core junctures can have independent nuclear operators in each core, but it would not count as a defining feature for core coordination. Therefore, the illustration of the test for nexus type is provided in the section of each type of construction after we investigate its juncture type.

This section summarizes a framework for dealing with complex constructions. According to RRG, complex constructions can be classified in terms of units and relationship among the units, as junctures and nexus. In order to identify the juncture and nexus type of each construction in Thai, some test frames are proposed. In the following sections we apply these tests to find out the juncture and nexus type of the constructions in question.

4. Juncture and nexus type of the construction with *hây* as a matrix verb

Based on the test proposed in section 3, this section investigates the nexus and juncture type of complex constructions with *hây* as a matrix verb.

4.1 Juncture type

As shown earlier, an important criterion for identifying juncture types in Thai is the realization of syntactic and semantic arguments. In nuclear and core junctures, semantic arguments are either obligatorily pooled or shared, respectively, while in clausal junctures they are optionally realized, depending on pragmatic principles. Given this criterion, the complex construction with *hây* as a matrix verb is a core juncture. To illustrate,

(52) phon   hây jǔm pay   ŋaːnlíaŋ
      Phon   give Jum go   party
      (a)'Phon let Jum go to the party.'
      (b)'Phon had Jum go to the party.'

(53) *phon   hây jǔm lɔ̀n   pay   ŋaːnlíaŋ
      *Phon   give Jum 3rdF go   party

In sentence (52) there are two verbs, *hây* 'give' and *pay* 'go,' and two core arguments that are syntactically realized, *Phon* and *Jum*. The core argument *Jum* is an undergoer of a matrix verb *hây*, and also an actor of the non-matrix verb pay 'go'. (53) shows that the non-matrix verb 'go' cannot have its semantic argument syntactically realized. Thus, for this type of construction it is obligatory to have a shared core argument. Therefore, this type of construction is a non-clausal juncture since it has obligatorily shared core arguments.

       Notice that the argument realization in this type of construction is not a kind of argument pooling since only the core argument that is an undergoer of the matrix junct is shared by the NP in a subject position of the non-matrix junct. To illustrate,

(54)   nuan   hây jŭm tɕàp   sŏmsǐ: wáy
           Nuan   give Jum catch   Somsri OPR
           'Nuan had Jum catch Somsri tightly.'

Sentence (54) shows that *Jum* is the only shared core argument, that is, it is an undergoer of the verb *hây*, and also an actor of the two-place predicate verb *tɕàp* 'catch' in the non-matrix junct. But the NP *Somsri*, as an undergoer of the verb *tɕàp* 'catch', is not structurally shared by the matrix verb. We conclude, then, that the construction with *hây* as a matrix verb is not a nuclear juncture since semantic arguments are not pooled together; rather, it is a core juncture.

       The above finding is confirmed when we apply the test of the adverbial intervention. For this type of construction adverbs can modify only the matrix core but it has to occur at the end of the juncture, as shown below.

(55)   khăw   hây   tɕhăn   pay ŋa:nlíaŋ   kàp khăw   yà:ŋsǐamâydây
           3rdM   give 1st go   party   with 3rdM   unwillingly
           'He unwillingly let me go to the party with him.'

(55′) *khăw hây yà:ŋsǐamâydây tɕhăn pay ŋa:nlɹaŋ   kàp khăw
           3rdM give unwillingly   1st go   party   with 3rdM

(55″) *khăw hây tɕhăn yà:ŋsǐamâydây pay ŋa:nlíaŋ   kàp khăw
           3rdM give 1st unwillingly   go   party   with 3rdM

Ungrammatical sentences (55′) and (55″) show that a postverbal adverb, *yàːŋsǐamâydây* 'unwillingly' in this case, is not allowed to occur between the two juncts, neither before nor after the shared argument. However, when it occurs at the end of the juncture, as in (55) the sentence is possible. We conclude that this type of construction is a core juncture since only an adverb that modifies the matrix core is allowed and it has to occur at the end of the core juncture, not between the two cores.

4.2 Nexus type of *hây* construction

Applying a *What*-question test to *hây* core juncture, we find that a non-matrix junct cannot be replaced by an equivalent question word as an argument can. Examples are shown below.

(56) A: *nuan   hây   jǔm   ʔaray
          *Nuan   give   Jum   what
          *'What did Nuan have Jum do?'
     B: nuan   hây   jǔm   tɕàp   sǒmsǐː   wáy
          Nuan   give   Jum   catch   Somsri   OPR
          Nuan had Jum catch Somsri tightly.'

(56′) A: nuan   hây   jǔm   tham   ʔaray
          Nuan   give   Jum   do   what
          'What did Nuan have Jum do?'

The data above show that we cannot substitute a question word as an argument for the whole core. Rather, we have to use the verb of unspecified action *tham* 'do' before a question word as its argument as in (56′). Therefore, a non-matrix core in a *hây*-construction is not an argument of the verb *hây*, so it is not subordination.

Now we test for the dependency of operators between two cores. An important feature of core cosubordination is the operator dependence. It is found that each core in a *hây* core juncture can have independent core operators. Therefore, the *hây* construction is core coordination. To illustrate,

(57) mɛ̌ː tɔ̂ŋ hây jǔm pay ŋaːnlɪaŋ kàp phon
     mother must give Jum go party   with Phon.
     kɔ̂ː phrɔ́ʔ jǔm rópráw
     then because Jum insist
     'Mother must let Jum go to the party with Phon. That's because Jum insisted.'

(58) *mɛ̌ː   hây jǔm tɔ̂ŋ   pay ŋaːnlíaŋ kàp phon
      mother give Jum must go party   with Phon
      kɔ̂ː phrɔ́ʔ jǔm rópráw
      then because Jum insist
      *'Mother had Jum be obliged to go to the party with Phon. That's because Jum insisted.'

In (57) the modal of obligation *tɔ̂ŋ* 'must' is before the matrix verb *hây*, where the referent *mɛ̌ː* 'mother' is under obligation to 'allow' the situation in the non-matrix to occur, but the obligation is not extended over the situation in the non-matrix junct. The context following this sentence helps clarify that 'Jum' as the referent of the action 'going to the party' is not under obligation. On the contrary, in (58) the modal is before the non-matrix verb, and so the obligation is on *Jum* who has to 'go to the party with *Phon*, such that (58) is not acceptable because it contradicts the next sentence. This means that each core is independent with respect to core operators. Therefore, the *hây* construction is not core cosubordination; rather, it is core coordination.

The following example shows the semantic interpretation a sentence receives when the core operator occurs in the non-matrix core.

(59) mɛ̌ː hây   jǔm tɔ̂ŋ ʔàːn năŋsɯ̌ː   thúkwan
     mother give Jum must read book   every day
     (a)'Mother has Jum be obliged to read everyday.'
     (b)*'Mother let Jum be obliged to read everyday.'
     (c)*'Mother was obliged to have Jum read everyday.'

A core operator may occur in the non-matrix predicate in a preverbal position, and has a scope only over its core. In (59) a core operator *tɔ̂ŋ* 'must' occurs before the verb *ʔàːn* 'read', and it has scope at the core level, that is, it indicates the obligation that the referent *Jum* has to perform the action 'read'. Notice that when the situation in the non-matrix core is under obligation, only one meaning of the verb *hây* is invoked. (59b) shows an

excluded reading. Also, since the core operator occurs within the non-matrix core, it does not have scope over the other core as shown in the impossible reading in (59c).

In this section, following RRG, the juncture and nexus type of a complex construction with *hây* as a matrix verb was investigated. Since the construction exhibits the argument sharing property, it is considered a core juncture. The result is confirmed by the fact that adverbs are not allowed to intervene between the two cores. A *What*-question frame is used to test for Thai argument subordination. To distinguish coordination from subordination, operator dependency is examined. It is found that the construction cannot be asked by a *What*-question, and that each core can be independently modified by core operators, so it is a core coordination.

5. *hây* in other complex constructions

This section investigates complex constructions that have the lexical item *hây* following verbs of various groups, forming three kinds of constructions: jussive, propositional attitude, and purposive constructions. The discussion for each type of construction begins with the semantic properties of each component in the construction, following section 2. Then, the construction is categorized for its juncture and nexus types.

5.1 Jussive constructions

Jussive constructions involve a command, request or demand made by one participant toward another participant in order for the latter would perform an action. (Van Valin & LaPolla, 1997: 427) This type of construction in Thai is formed by communication verbs, as matrix verbs, which are followed by the *hây* juncture. Such verbs are chuan 'persuade', *khɔ̌ː* 'ask for a favor', *bɔ̀ːk* 'tell', and *sàŋ* 'order'. An example is as follows:

(60) nuan   bɔ̀ːk hây jǔm nâŋ loŋ
      Nuan   tell give Jum sit DIR
      'Nuan told Jum to sit down.'

5.1.1 Semantic accounts

It seems obvious that when we talk about communication, it is only human communication to which we have access. Verbs in this group, therefore, require human actors. The other semantic question that we investigate is restrictions on the semantic class of verbs in the ultimate resultant state of affairs, expressed in the non-matrix junct of the *hây* juncture. It is found that the classes of verbs that cannot occur in the non-matrix junct of the *hây* juncture are achievement and state verbs, as shown below.

(61)   mɛ̂ː   bɔ̀ːk hây jǔm kin   khâːw
       mother tell   give Jum eatrice
       'Mother told Jum to eat.'

(62)   mɛ̂ː   bɔ̀ːk hây jǔm pay ŋaːnlíaŋ   nán   kàp   phon
       mother tell   give Jum go   party   DEM   with Phon
       'Mother told Jum to go to that party with Phon.'

(63)   *mɛ̂ː   bɔ̀ːk hây jǔm tɕɔː kràʔpǎw   thîː   hǎːy   pay
        Mother tell   give Jum find   purse   REL   be lost DIR
        'Mother told Jum to find the lost purse.'

(64)   *mɛ̂ː   bɔ̀ːk hây jǔm hǐw
        mother tell   give Jum be hungry
        'Mother told Jum to be hungry.'

The above examples illustrate the co-occurrence of verbs in the non-matrix junct and communication verbs in the matrix. They are categorized as verbs of different semantic classes: kin 'eat' as activity, pay *ŋaːnl̥ịaŋ nán* 'go to that party' as active accomplishment, *tɕɔː* 'find' as achievement, and *hǐw* 'be hungry' as state. The first two verbs are compatible with the jussive construction while the last one, which is a state verb, is not. Therefore, we can conclude that the jussive construction does not allow an ultimate state of affairs to be an achievement or state.

So far, we have seen that the semantic characteristics of the jussive construction with communication verbs as matrix verbs are similar to the construction with *hây* as a matrix verb in many respects. First, both require the subject NP to be agent and the ultimate state of affairs to be some verb class other than state or achievement. Still, they

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differ in that participants in the communicative event must be animate and that the force dynamic pattern is determined by the construction type to be one of impingement.

Recall the example from a previous section in which a shared argument of a *hây* core juncture is allowed to be an inanimate NP, having a semantic role of force. On the contrary, this is not allowed in a jussive construction, with communication verbs as matrix verbs. To illustrate,

(65) nuan   hây kɛ̂ːw   klîŋ pay rɯ̂ayrɯ̂ay
      Nuan   give glass   roll DIR continually
      'Nuan let the glass keep rolling.'

(66) *nuan bɔ̀ːk hây kɛ̂ːw   klîŋ pay rɯ̂ayrɯ̂ay
       Nuan tell   give glass   roll DIR continually
       'Nuan told the glass to keep rolling.'

The above data show that in a jussive construction the shared argument within the *hây* core juncture is required by the matrix verb, the communication verb, to be animate.

With respect to the force dynamic pattern, the interpretation of the situation in the ultimate core is limited to only one type of causation, that is, impingement. In other words, the agent forces the non-agent to perform an action. What kind of obligation it is depends upon the matrix verb itself, say, if the matrix verb is *sàŋ* 'order', the actor of the ultimate core is 'forced' under strong obligation while if it is *khɔ̌ː* 'ask for a favor', then, the actor is forced under weak obligation. By all means, they are obligations on the actor to perform the action without any ambiguity.

To sum up, this type of construction requires that an agent as subject and the state of affairs in the ultimate core is highly restricted. First, both participants involved in the action must be animate. Second, the action must be either an activity or an accomplishment. Finally, the force dynamic relation involved is one of impingement.

5.1.2 Clausal linkage

The juncture and nexus type of the jussive construction with *hây* is core coordination.

As for its juncture type, shared arguments are obligatory in this construction, so it is a core juncture. To illustrate,

(67) nuan   bɔ̀ːk hây jǔm nâŋ loŋ
      Nuan   tell give Jum sit DIR
      'Nuan told Jum to sit down.'

(68) *nuan   bɔ̀ːk lɔ̀n hây jǔm nâŋ loŋ
       Nuan   tell 3rdF give Jum sit DIR
      'Nuan told Jum to sit down.'

The above data show that there is a shared core argument, that is, the actor of the communication verb *bɔ̀ːk* 'tell' and the actor of the verb *hây*; only one NP is syntactically realized.

Furthermore, to express the semantic relation of jussive, it is required that the undergoer of the matrix verb is the addressee that occurs as an actor in the ultimate core. Thus, the obligatorily shared argument is a semantic argument of three predicates, namely, the communication verb, *hây* and a verb in the ultimate core. This can be seen in the following examples.

(69) phon   bɔ̀ːk nuan   hây jǔm nâŋ loŋ
      Phon   tell Nuan   give Jum sit DIR
      'Phon told Nuan, "Make Jum sit down".'

The sentence (69) is possible in Thai if one wants to express what is shown in the translation, but it is not a jussive construction. The request from the participant *Phon* is not a direct obligation upon the ultimate participant *Jum*, and it tends to be interpreted as just a quotation.

I, therefore, conclude that in a jussive construction the matrix verb of communication is related to the *hây* juncture at the core level because shared arguments are obligatory to yield the jussive construction.

Also, the test of adverbial intervention confirms that in a jussive construction the communication verb is related to the verb *hây* at the core level. To illustrate,

(70) phon bɔ̀ːk hây jŭm nâŋ loŋ dûay sĭaŋ sùʔphâːp
       Phon tell give Jum sit DIR with voice polite
       'Phon told Jum to sit down with polite voice.'

(70′) *phon bɔ̀ːk dûay sĭaŋ sùʔphâːp hây jŭm nâŋ loŋ
        Phon tell with voice polite give Jum sit DIR
        'Phon told Jum to sit down with polite voice.'
        ?'Phon told with polite voice, "Let Jum sit down." '

In (70) the adverb phrase *dûay sĭaŋ sùʔphâːp* 'with polite voice', which modifies the matrix verb *bɔ̀ːk* 'tell', occurs at the end of the juncture. But when we put the adverb phrase between the communication verb and the *hây* juncture, the sentence is unacceptable, as seen in (70′). We come to a conclusion that in a jussive construction the communication verb is related to the *hây* juncture at the core level.

To test for argument subordination, we apply the *What*-question as proposed before. It turns out that the jussive construction fails the *What*-question test.

(71) A: *phon bɔ̀ːk ʔàray
           Phon tell what
           'What did Phon tell?'
      B: phon bɔ̀ːk hây jŭm nâŋ loŋ
           Phon tell give Jum sit DIR
           'Phon told Jum to sit down.'

(71′) A: phon bɔ̀ːk hây jŭm tham ʔaray
            Phon tell give Jum do what
            'What did Phon tell Jum to do?'

The above data show that we cannot replace the *hây* core juncture with a question word to compose a question: (71A) is not an associative question for an answer in jussive form, as shown in (71B) . A compatible question for (71B) would be (71′), where a verb of unspecified action *tham* 'do' replaces a verb in the ultimate core and then is followed the

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question word *ʔaray* 'what'. Therefore, the relationship between the communication verb and the *hây* core juncture is not one of subordination.

To distinguish between coordination and cosubordination, we consider the semantic dependency of operators: operators can modify the matrix core independently. Therefore, the nexus is coordination.

(72) mɛ̂ː   tɔ̂ŋ   khɔ̌ː hây jǔm kin   khâːw
      mother   must   ask give Jum eat   rice
      'Mother had to ask Jum to eat.'

In sentence (72) the modal of obligation *tɔ̂ŋ* 'must' occurs before the matrix verb *khɔ̌ː* 'ask', in which only the referent *mɛ̂ː* 'mother' is under obligation of 'asking for a favor'. Also, as discussed before, the degree of obligation on the participant of the ultimate core depends on the matrix verb. Since the matrix verb is *khɔ̌ː* 'ask for a favor', the obligation is weak. However, *tɔ̂ŋ* 'must' is a modal of strong obligation, and yet the *hây* juncture is compatible with the matrix verb modified by *tɔ̂ŋ*. This means that the matrix core can have independent core operators, and that the obligation on the participant in the ultimate core is not affected by such a modification. Therefore, this type of construction is core coordination.

Finally, the semantic representation of the jussive construction can be formulated as follows:

(39′) **want′** (nuan, [BECOME **do′** (Jum, [**close′** (Jum, nâːtàːŋ)])])
       ∧ DO (Nuan, [[**do′** (nuan, ∅)] CAUSE [BECOME **do′** (Jum, [**close′** (Jum, nâːtàːŋ)])]])

(73)   [**want′** (x, LS$_2$) ∧ DO (x, [LS$_1$ CAUSE LS$_2$])]
       LS$_1$ = [DO (x, [**express**.(α).**to**.(β).**in.language**.(γ) ′ (x, y)])]
       LS$_2$ = [do′ (y, [**pred′** (y) or (y, z)])] or [BECOME **pred′** (y)
                 or (y, z)]
            where   α, γ = ∅
                        β   = y

The schema proposed by Jolly (1993) is adopted. The participant represented by the x argument has intent for a state of affairs represented by LS$_2$. The participant x also

performs a communicative action, represented by LS₁, with intent for an impingement on the other participant, represented by the y argument, to perform an action. The y argument is both the addressee of the communicative situation and the actor intended to perform an action in the ultimate core. Thus, the *y* argument, is obligatorily shared by the matrix core of the communication verb and the *hây* core juncture. Note that the α and β arguments of **express′** are represented as zeroes because the utterance is unspecified and the language is irrelevant. As a matter of fact, it is not merely an utterance; rather, it is an order of some kind. The semantic representation of *hây* is combined with that of a communication verb. The ultimate core, LS₂, requires animate subjects and verbs of activity or accomplishment.

The following illustrates the semantic representation of a jussive construction.

(74) mɛ̂ː bɔ̀ːk hây jŭm kin khâːw
      mother tell give Jum eatrice
      'Mother told Jum to eat.'

(74′) [**want′** (mɛ̂ː, [**do′** (Jum, [**eat′** (Jum, khâːw)])]) ∧ DO (mɛ̂ː, [[DO (mɛ̂ː, [**express′**.(α).to.(β).**in.language**.(γ) ′ (mɛ̂ː, Jum)])] CAUSE [**do′** (Jum, [**eat′** (Jum, khâːw)])]])]

5.2 Propositional attitude constructions

Propositional attitude constructions involve the expression of a participant's attitude, judgment or opinion regarding a state of affairs. (Van Valin & LaPolla, forthcoming: 427) In Thai they are formed by verbs of psych-action followed by *hây* and a subclausal unit. Verbs of psych-action are such as *yàːk* 'want (informal)' *tɔ̂ŋkaːn* 'want (formal)', and *pràːtthanǎː* 'wish'.

An example of this type of construction is shown in (75):

(75) jŭm yàːk hây nuan pay ŋaːnlĩaŋ
      Jum want give Nuan go party
      'Jum wants Nuan to go to the party.'

Sentence (75) indicates a desire of the participant *Jum*, expressed as the subject NP, for an action of *Nuan*, another participant.

5.2.1 Semantic accounts

With respect to semantic restrictions, these verbs, by themselves, always require their subject NPs to be animate, as shown below.

(76) jŭm yàːk   pay ŋaːnliáŋ kàp phon
     Jum want   go   party   with Phon
     'Jum wanted to go to the party with Phon.'

(77) *phaːyúʔ yàːk   phát   pay thaːŋ nán
      storm   want   blow   DIR way   that
      'The storm wants to blow towards that direction.'

The data in (76) and (77) show that only an animate subject is allowed for the psych-action verb *yàːk* 'want'.

Besides animacy, another important semantic aspect is the semantic class of the verb in the non-matrix junct. There is no semantic restriction on the class of the verb that indicates an ultimate state of affairs intended by the participant expressed in the subject position. To illustrate,

(78) nuan yàːk   hây jŭm   kin khâːw
     Nuan want   give Jum   eat rice
     'Nuan wants for Jum to eat.'

(79) nuan yàːk   hây ʔaːkàːt nay hôŋ   thàːytheː
     Nuan want   give air   in   room circulate
     'Nuan wants the air in the room to circulate.'

(80) nuan yàːk   hây jŭm   tɕəː kràʔpăw thîː hăːy   pay
     Nuan want   give Jum   find purse   REL   be lost DIR
     'Nuan wants Jum to find her lost purse.'

(81) phon   yàːk hây rót sĭa
     Phon   want give car be broken
     phrɔ́ʔ   khăw mây yàːk   pay roːŋrian
     because 3ʳᵈM not want   go   school
     'Phon wishes the car would break down because he does not want to go to school.'

Sentences (78) to (81) show instances of the construction with verbs from various classes, activity, accomplishment, achievement and state, respectively. They show that verbs in

the non-matrix junct are not restricted to only activity or accomplishment as in the case where *hây* is the only matrix verb in the juncture.

To sum up, a propositional attitude construction with a psych-action verb in the matrix core, followed by another junct beginning with *hây*, requires the subject to be animate but the semantic class of the embedded verb is not restricted.

5.2.2 Clausal linkage

Regarding its juncture and nexus type, the propositional attitude construction with a psych-action verb as a matrix verb preceding another junct beginning with *hây* is core subordination. It is related to the *hây* juncture at the core level because a postverbal adverb is allowed to modify the matrix verb but restricted to occur at the end of the juncture; it is subordination because it is compatible with the *What*-question test.

For this type of construction, there is no semantic argument that is shared by the two cores. To illustrate,

(82) phon   yàːk   hây nuan   pay ŋaːnl̩ɪaŋ
      Phon   want   give Nuan   go   party
      'Phon wanted Nuan to go to the party.'

(83) phon   yàːk   pay   ŋaːnlíaŋ
      Phon   want   go   party
      'Phon wanted to go to the party.'

(84) *phon   yàːk   nuan
      *Phon   want   Nuan
      *'Phon wanted Nuan.'

In both sentences (82) and (83) the matrix verb is followed by a subclausal unit whereas in (84) a lexical argument *Nuan*. The data show that the psych-action verb *yàːk* 'want' can have only a subclausal unit, not a lexical argument. This means that the semantic structure of the verb *yàːk* does not have a semantic argument to be shared with a logical structure in another subclausal unit.

Although this type of construction does not exhibit the property of shared semantic arguments, it is classified as a core juncture when we apply the test of adverb intervention. To illustrate,

(85) khǎw yàːk hây tɕhǎn pay ŋaːnlíaŋ kàp khǎw lǔakəːn
3rdM want give 1st go party with 3rdM excessively
'He wants badly for me to go to the party with him.'

(85′) *khǎw yàːk lǔakəːn hây tɕhǎn pay ŋaːnlíaŋ kàp khǎw
3rdM want excessively give 1st go party with 3rdM

Sentence (85) is acceptable when the postverbal adverb *lǔakəːn* 'excessively', which modifies the matrix verb *yàːk* 'want', occurs at the end of the juncture. But when we put the adverb after the psych-action verb and before *hây*, the sentence is unacceptable, as seen in (85′). We can conclude that a propositional attitude construction is a core juncture.

As for the nexus type, the *hây* core juncture can substitute for the argument position of the psych-action verb, as tested in a *What*-question, so it is classified as subordination. To illustrate,

(86) A: phon tôŋkaːn ʔaray ʔɯːk lâʔ khraːwní:
Phon want what again PPRT this time
'What does he want this time?'
B: khǎw tôŋkaːn hây tɕhǎn pay ŋaːnlíaŋ kàp khǎw phrûŋní:
3rdM want give 1st go party with 3rdM tomorrow
'He wanted for me to go to the party with him tomorrow.'

The question and answer in (86) shows that the relationship between the two cores is one of argument subordination.

The semantic representation of a construction of this kind would be as follows:

(87) [**want′** (x, LS)]

From the above logical structure, the psych-action verb has two arguments: the x argument, and a subclausal unit, represented by LS, which expresses any kind of state of

affairs. The following illustrates the semantic representation of the propositional attitude construction.

(88) nuan   yà:k   hây jǔm kin   khâ:w
      Nuan   want   give Jum eat   rice
      'Nuan wants for Jum to eat.'

(88′) [**want′** (Nuan, [DO (**eat′** (Jum, khâ:w))])]

Sentence (88) is represented as a semantic structure in (88′), which has two arguments, a lexical argument and a core.

5.3 Purposive constructions

Purposive constructions involve an action performed with the intent of realizing anotherstate of affairs. (Van Valin & LaPolla, forthcoming, 427) In Thai, matrix verbs in this type of construction include a wide range of semantic fields, for example, *baŋkháp* 'force', *plɔ̀y* 'release', *phlàk* 'push', *duŋ* 'pull', and *thúp* 'hit'. An example is as follows:

(89) nuan   phlàk jǔm hây   tòk   nám
      Nuan   push   Jum give fall water
      'Nuan pushed Jum in order for her to fall into the water.'

Sentence (89) is made up of an activity verb *phlàk* 'push' as a matrix verb, followed by another junct, beginning with *hây*, expressing a state *tòk* 'fall' as an ultimate result.

5.3.1 Semantic accounts

With respect to the animacy restriction, verbs in this group allow an inanimate subject NP, but when they combine with a *hây* juncture, they require an animate subject NP.

(90) pha:yúʔ   kamlaŋ   phát   pay tha:ŋ   tàʔlà:t
      storm   PROG   blow   DIR towards market
      'The storm is blowing towards the market.'

(91) pha:yúʔ phát bâːn khăw phaŋ
storm blow house 3rdM be damaged
'The storm blew his house down.'

(92) *pha:yúʔ phát hây bâːn khăw phaŋ
storm blow give house 3rdM be damaged
*'The storm blew in order for his house to be broken down.'

The above examples show the usage of the verb *phát* 'blow'. In a simple construction, as in (90), it can have an inanimate subject *pha:yúʔ* 'storm'. Likewise, in a causative construction in (91), the same verb allows an inanimate subject. However, when the matrix junct is followed by a junct with *hây* as in (92), the sentence is not possible. Therefore, we conclude that the purposive construction requires an animate subject.

As far as interclausal semantic relations are concerned, the fact that inanimate subjects are not compatible with this kind of construction confirms that this type of construction is not a causative construction, which requires an intentional agent in its semantic component. Rather, this construction is a purposive construction.

The next question concerns the semantic characteristics of the ultimate state of affairs in the non-matrix junct following *hây*.

(93) nuan phlàk kɛ̂ːw hây klîŋ pay rɯ̂ayrɯ̂ay
Nuan push glass give roll DIR continually
'Nuan pushed the glass in order for it to keep rolling.'

(94) nuan thúp kɛ̂ːw hây tɛ̀ːk
Nuan hit glass give be broken
'Nuan hit the glass in order for it to be broken.'

(95) nuan khon námtaːn hây lálaːy
Nuan stir sugar give melt
'Nuan stirred sugar in order for it to melt.'

(96) nuan lâːk tɕhɯ̂ak tháŋ sɔ́ːŋ sên hây bantɕop kan
Nuan pull rope both two CL give meet each other
'Nuan pulled both ropes in order for them to meet.'

Sentences (93) - (96) exemplify purposive constructions with an ultimate state of affairs from various semantic classes, namely, activity, state, accomplishment, and achievement,

respectively. Thus, we see that for this type of construction there is no restriction on the semantic class of the ultimate state of affairs.

At this point, we can summarize that the only semantic restriction affected by the occurrence of *hây* that remains in this type of construction is the animacy on the subject NP.

5.3.2 Clausal linkage

In terms of clausal structure, the purposive construction can be classified as clausal coordination. Matrix verbs are considered to relate to the non-matrix junct at the clausal level because the construction does not require an obligatory shared argument and adverbs can intervene between the matrix verb and the *hây* juncture.

First, compare the following sentences:

(97) nuan   dɯɯŋ   dâːy   hây   khàːt
     Nuan   pull   thread give be torn
     'Nuan pulled the thread$_i$ in order for it$_i$ to become apart.'

(98) nuan   dɯɯŋ dâːy   hây   dâːy   khàːt
     Nuan   pull thread give thread be torn
     'Nuan pulled the thread$_i$ to have it$_i$ become torn apart.'

Both (97) and (98) are instances of purposive constructions. In (97) there is a missing argument, that is, the undergoer of the verb *khàːt* 'be torn', but the reference of the zero can be recovered as the undergoer of the matrix, that is, *dâːy* 'thread'. Sentence (98) has the same interpretation as (97), but the undergoer of the ultimate state of affairs is realized as a full noun phrase. This shows that the missing argument, or zero, in a purposive construction is not obligatory.

Also, we can have a sentence in which only the undergoer of the ultimate core is realized, leaving a gap in the position of undergoer of the matrix verb, as shown below.

(99) nuan   dɯɯŋ   hây   dâːy   khàːt
     Nuan   pull   give thread be torn
     'Nuan pulled it/them$_{i/j}$ in order for the thread$_j$ to be apart.'

There is a zero as an undergoer of the matrix verb *dɯɯŋ* 'pull' in (99). However, its reference is not bound to the realized noun phrase in the ultimate core. It is possible that the zero refers to other noun phrase than *dâːy* 'thread'. The following sentence is to illustrate such a possibility.

(100) raw   tôŋ   tɕàp   tàʔkhèp   tháŋ   sɔ̌ːŋ khâːŋ
       we   must   hold   seam   both   two   side.
       lɛ́ːw   dɯɯŋ   hây dâːy   khàːt
       then   pull   give thread be torn
       'We must hold both seams$_i$. Then, we pull them$_i$ in order for the thread to be apart.'

The sentences in (100) show that a zero argument of the matrix verb is not necessarily a null form of the undergoer of the ultimate junct. The undergoer of the verb *dɯɯŋ* is a zero pronoun referring to *tàʔkhèp* 'seam', not 'thread'.

     The above shows that in a purposive construction the matrix junct is related to the non-matrix junct at the clausal level. This is confirmed by the fact that the two juncts can be intervened by adverbs. To illustrate,

(101) nuan   khàyàw   tóʔ ræːŋræːŋ   hây kɛ̂ːw klîŋ paymaː
       Nuan   shake   table quite hard   give glass   roll DIR
       'Nuan shook the table quite hard in order for the glass to keep rolling.'

(102) $^?$nuan   khàyàw   tóʔ hây kɛ̂ːw   klîŋ paymaː ræːŋræːŋ
       Nuan   shake   table give glass   roll DIR   quite hard
       *'Nuan shook the table quite hard in order for the glass to keep rolling.'

In (101) the matrix verb is modified by an adverb *ræːŋræːŋ* 'quite hard' and it has to occur right at the end of the matrix junct; when it occurs at the end of the non-matrix unit, the sentence is unacceptable, as in (102). In other words, matrix adverbs occur between the two juncts in this type of construction, so the construction is a clausal juncture.

     As for its nexus type, the non-matrix junct with *hây* cannot be substituted for the argument position of the matrix verb, as shown by the *What*-question test, so it is not argument subordination. To illustrate,

(103) A: *phon   dɯɯŋ   ʔaray
          *Phon   pull   what
          *'What did Phon pull?'
      B: nuan   dɯɯŋ   hây dâːy   khàːt
          Phon   pull   give thread be torn
          'Phon pulled it/them$_{i/j}$ in order for the thread$_j$ to be apart .'

The above data show that we cannot replace the *hây* non-matrix junct with a question word to compose a question. Thus, (103A) is not a compatible question for an answer in (103B). A compatible question for (103B) would be the question in (104) as follows:

(104) A: phon   dɯɯŋ   thammay
          Phon   pull   why
          'Why did Phon pull?'

The question in (104), with the question word *thammay* 'why', is acceptable for an answer that is a purposive construction with *hây* as in (103B). Therefore, the relationship between the matrix verb and the *hây* core juncture is not the argument subordination.

The following is to find out whether the purposive construction is coordination or cosubordination. Since the purposive construction is a clausal juncture, operators to be used would be clausal operators. Crucially, the last junct is not allowed to be independently modified by temporal operators.

Consider the following examples.

(105) nuan tɕàʔ   khàyàw   tóʔ   hây kɛ̂ːw   klîŋ paymaː
      Nuan FUT   shake   table give glass roll DIR
      'Nuan shook the table in order for the glass to roll back and forth.'

(106) *nuan khàyàw   tóʔ   hây   kɛ̂ːw   tɕàʔ   klîŋ   payماː
       Nuan shake   table give glass FUT   roll   DIR

From the above we see that sentence (105) has a future marker modifying the matrix verb *khàyàw* 'shake'. However, when we modify the ultimate junct with the same marker, as in (106), the sentence is not acceptable. Note that the ultimate state of affairs is a result intended by the participant, expressed by the subject NP, to occur subsequently. Therefore, the ungrammaticality of (106) cannot be ascribed to semantic factors.

It should be noted that in a purposive construction with a conjunction *phɯ̂a* 'for (conj.)' has an irrealis marker, which is a clausal operator, as shown below.

(107) nuan   khàyàw   tóʔ   phɯ̂a   kɛ̂:w   tɕàʔdây   klîŋ payma:
       Nuan   shake   table for (conj) glass   IRR   roll   DIR
       'Nuan shook the table in order that the glass would roll back and forth.'

Sentence (105) shows that an irrealis modifier *tɕàʔdây* occurs in the non-matrix clause.

However, comparing the two kinds of purposive constructions in terms of temporal modification, we find that the one with a conjunction must be overtly marked for irrealis, while the one with *hây* cannot have an overt marker, but the irrealis reading is implied by virtue of the construction type. To illustrate,

(108) *nuan   khàyàw   tóʔ   phɯ̂a   kɛ̂:w   klîŋ payma:
       *Nuan   shake   table for (conj) glass   roll   DIR
       *'Nuan shook the table in order that the glass would roll back and forth.'

(109) nuan   khàyàw   tóʔ   hây   kɛ̂:w   klîŋ payma:
       Nuan   shake   table give   glass   roll   DIR
       'Nuan shook the table in order for the glass to roll back and forth.'

Therefore, the operator modification in the ultimate clause in a purposive construction with *hây* is not independent, rather it relies on the overall construction. We conclude that the nexus type of the purposive construction with *hây* is cosubordination.

Thus, we can formulate the semantic representation of this type of construction as follows:

(110) [**want′** $(x, LS_2)] \wedge [DO (x, [LS_1$ cause $LS_2])]$

The schema proposed by Jolly (1993) is adopted. The participant represented by the *x* argument has intent for a state of affairs represented by LS_2 that is caused to occur by an action represented by LS_1.

The following illustrates the semantic representation of the purposive construction.

(111) nuan   khàyàw tóʔ   hây kɛ̂ːw klîŋ paymaː
       Nuan   shake   table   give glass roll DIR
       'Nuan shook the table in order for the glass to roll back and forth.'

(111′) [**want′** (nuan, [**do′** (kɛ̂ːw, [**roll′** (kɛ̂ːw)])])] ∧ [DO (nuan, [**shake′** (nuan, tóʔ)
        CAUSE <$_{DIR}$ [**do′** (kɛ̂ːw, [**roll′** (kɛ̂ːw)])])]>])]

Sentence (111) is represented as a semantic structure in (111′), which has two arguments, a lexical argument and a core.

5.4 The syntactic category of *hây*: A verb or a marker

We have seen that *hây* occurs after three kinds of verbs, forming three types of construction: jussive, propositional attitude and purposive. The last question for this analysis is whether *hây* itself is a verb or a clausal linkage marker.

According to Van Valin & LaPolla (1997), linkage markers (LM) are category of markers that function as linking subclausal units, including such elements as adpositions, determiners and case markers. Clausal linkage markers tend to occur in core and clausal junctures, not in nuclear junctures.

Since these three constructions are either core or clausal junctures, *hây* in these cases could be analyzed as LM. However, *hây* in purposive and propositional attitude constructions, on the one hand, and *hây* in jussive constructions, on the other, are different with respect to its occurrence in question. To illustrate,

(112) phon   bɔ̀ːk hây jǔm tham   ʔaray
       Phon   tell give Jum do   what
       'What did Phon tell Jum to do?'

(113) phon   tɔ̂ŋkaːn   ʔaray
       Phon   want   what
       'What does Phon want?'

(114) phon   dɯɯŋ   thammay
       Phon   pull   why
       'Why did Phon pull?'

From the above, to ask about a desire, which is presumably to be answered in a propositional attitude form, we do not include *hây* in a question. Likewise, to ask about a purpose, with an intended answer in a purposive form, *hây* is not expressed in a question. However, it is not the case for jussive, in which we do not have any other ways to express a question in such a form that it would not include *hây*. It is concluded that *hây* in a jussive construction functions as a verb proper while in a propositional attitude construction and a purposive construction it is a LM.

Another evidence is from the fact that the restriction on the semantic class of verbs in the ultimate core in a jussive construction is the same as that of the construction with *hây* as a matrix verb. That is, both a jussive construction and a construction with *hây* as a matrix verb do not allow state verbs or achievement verbs to occur in the ultimate core. In other words, the *hây* core juncture is simply conjoined to the matrix verb of communication; *hây* retains its semantic properties as a verb in this type of construction. However, in a propositional attitude construction and a purposive construction, a semantic class of a verb in an ultimate core or clause, respectively, is not restricted, rather it can be any class, an activity, accomplishment, state, or achievement. This confirms that only *hây* in a jussive construction is a verb, while in a propositional attitude construction or a purposive construction *hây* is a clause linkage marker.

To sum up, a *hây* subclausal unit occurs after verbs of various kinds, making up three different types of constructions. A jussive construction, composed of matrix verbs of communication followed by the *hây* core juncture, is core coordination. A propositional attitude construction is core subordination. It is formed by conjoining a matrix core of psych-action verb with another core by the LM *hây*; and, the non-matrix core is an argument. A purposive construction, which is a clausal cosubordination, has two clauses conjoined by the LM *hây*.

6. Conclusion

This paper investigates *hây* complex constructions, aiming to find out the nature of the clausal linkage between the *hây* construction and other verbs in the construction. It proposes that in order to achieve such a goal, semantic properties of the lexical item in various types of constructions should be investigated in a unified manner. *hây*, as a verb in simple constructions, is a verb of possession transfer, and has a component of causation in its semantic structure. Besides, it is a beneficiary marker, indicating deputative and recipient beneficiaries, which has two semantic components, namely, intent and causation. As a focus of interest, *hây* is also a matrix verb in a complex construction, involving the intent of one participant for an action performed by another participant to occur. Considering these three usages, we find shared semantic properties among them: *hây* requires an animate subject with an intent towards an action of another participant. When the semantics of *hây* is as a verb of possession transfer or a beneficiary marker is compositionally represented in the semantic structure while it is overtly realized when *hây*, together with other verbs, forms a complex construction. This corresponds to the schema proposed by Jolly (1993) for a purposive marker for in English, as shown in (115).

(115) $[\textbf{want}' \ (x, LS_2)] \wedge DO \ (x, [\ LS_1 \wedge CAUSE \ LS_2])]$

When we investigate complex constructions with respect to these semantic components, we find that each construction has different restrictions on each component. A jussive construction, which is a core coordination, has the most restrictions on the semantic classes of LS_2, and an obligation on the other participant is required. A core coordination, with *hây* as a matrix verb, requires LS_2 to be only an activity or accomplishment as well, but does not impose a necessary obligation on the other participant. The psych-action construction has no semantic restriction on LS_2. But as an argument of the matrix verb, LS_2 is not structurally independent. Ina purposive construction, the non-matrix clause marked by *hây* is structurally independent but it is operator-dependent in the sense that its temporal setting can be implicational only, by

virtue of the construction type. The juncture and nexus type of each construction can be summarized in the table below.

	Properties	Causative	Jussive	Propositional Attitude	Purposive
Verb class	1. Activity & Accomplishment	Yes	Yes	Yes	Yes
	2. State & Achievement	No	No	Yes	Yes
	Syntactic category	*Verb*	*Verb*	*LM*	*LM*
Juncture	1. Obligatorily shared argument	Yes	Yes	No	No
	2. Intervention of adverbs between cores	No	No	No	Yes
	Juncture type	*Core*	*Core*	*Core*	*Clausal*
Nexus	1. What-test	No	No	Yes	No
	2. Independently modified by operators	Yes	Yes	Yes	No
	Nexus type	*Coordination*	*Coordination*	*Subordination*	*Cosubordination*

This paper suggests that studying complex constructions in Thai requires an analysis of various kinds of semantic properties. The lexical item *hây* can be classified as a verb and a marker. Considering only its syntactic behaviors is not adequate to account for its wide range of usages. RRG provides a consistent framework for both its semantics and syntax to yield a unified account for this phenomenon.

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