MINISTRY OF EDUCATION AND TRAINING
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AN INVESTIGATION INTO LINKING THE
SEMANTIC AND SYNTACTIC
REPRESENTATIONS IN SIMPLE SENTENCES
(ENGLISH VS VIETNAMESE)

Field : THE ENGLISH LANGUAGE
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M.A. THESIS IN THE ENGLISH LANGUAGE
(RESEARCH REPORT)

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CHAPTER 1
INTRODUCTION

1.1. RATIONALE

To communicate effectively, the learners must grasp how structure, meaning and communicative function interact in that language. They also understand what the roles of semantics in analyzing syntax are and that there is an interaction between semantics and syntax when making an utterance. Let's consider the following examples:

a. I ask the number of students in the class.

b. I inquire the number of students in the class.

Obviously, the two sentences above have the same meaning because *ask* and *inquire* are synonyms. In fact, the sentence *b* is not correct in grammar due to the fact that the verb *inquire* can't have an object as a concealed question. Therefore, only semantics is impossible to explain the difference between the sentences above.

As another example, a speaker wants to express that Sandy transferred some flowers to Chris at a party. First, he chooses the verb (maybe *present, give, offer* ...). He must realize the specific communicative intention and consequently whether the sentence will be active or passive, declarative or interrogative, the formulation of the semantic representation and concomitant syntactic template selection. Next, he thinks of the discourse status of the referents on the NPs. And finally he gives the output which takes place in the lexicon like this:

$< _{IF}DEC<_{TNS}PAST<$**be-at'** (party $_{ACS}$, [[**do'** (Sandy$_{ACV}$, ø)] CAUSE [BECOME **have'** (Chris$_{ACS}$, flowers$_{ACV}$)]])>>>.

To help learners explore the syntax, semantics and pragmatics interface in the grammatical systems of human language, in other words, the production process and comprehension process so that they can have a good insight into the language and communicate effectively, we decide to choose this topic. We do this research in the hope that we can also help learners get a high level of reproducing the language they have learned.

1.2. AIMS AND OBJECTIVES

1.2.1. Aims

The fundamental aim of the research is to raise Vietnamese learners' awareness of the linking between the semantic and syntactic representations in simple sentences and provide them with the knowledge of similarities and differences on the linking.

1.2.2. Objectives

The study is expected to find out the syntactic and semantic representations in English and Vietnamese simple sentences, the linking between the semantic and syntactic representations of a sentence, the similarities and differences between the two languages in linking algorithms, and some suggestions to learning and teaching foreign languages.

1.3. RESEARCH QUESTIONS

- What are the syntactic and semantic representations in simple sentences?
- What are linking algorithms in the semantic and syntactic representations of a sentence?
- What are the similarities and differences between the two languages in linking algorithms?

- What are some implications of the study to Vietnamese teachers and learners of English?

1.4. SIGNIFICANCE OF THE STUDY

To help Vietnamese learners of English have a profound understanding of semantics and syntax in English and Vietnamese simple sentences and the interaction between them.

To help them gain the final goal of learning English: communicating effectively.

1.5. SCOPE OF THE STUDY

In this thesis we only study the linking between the semantic and syntactic representations in simple sentences by using an explanatory framework according to the *Role and Reference Grammar- based* theory.

1.6. ORGANIZATION OF THE STUDY

The thesis will consist of five chapters:

Chapter 1 – Introduction

Chapter 2 – Literature Review and Theoretical Background

Chapter 3 – Methods and Procedures

Chapter 4 – Findings and Discussion

Chapter 5 – Conclusion

CHAPTER 2
LITERATURE REVIEW AND
THEORETICAL BACKGROUND

2.1. LITERATURE REVIEW

Jackendoff (2002) suggests a view on which semantic structures and syntactic structures are independently generated, and the interface conditions may be quite complex.

Van Valin R.D and LaPolla (1997) assume that the relationship between the semantic representation and the syntactic representation is not derivational. Rather, the two independent representations are linked to each other, in the sense that argument variables in the semantic representation are associated with referring expressions in the syntactic representation, and vice versa.

Bresnan and Kanerva (1989) propose Lexical-Mapping Theory to correlate the syntactic structures and representations with the predicate argument structure of verbs.

In the study '*A Relational Syntax – Semantics Interface Based on Dependency Grammar,*' Ralph Debusmann, Denys Duchier, Alexander Roller, Mavco Kuhlmann, Gert Smolka and Stefan Thater propose a syntax – semantics interface that realizes the mapping between syntax and semantics as a relation and does not make functionality assumptions in their direction.

Many linguistic researchers have investigated this problem in English in comparison with other languages. In Vietnamese, there have been some linguistic researchers who have brought out some views on this field.

2.2. THEORETICAL BACKGROUND

2.2.1. Syntactic Representation in English Simple Sentences

2.2.1.1. The Layered Structure of the Clause in Simple Sentences

a. Universal Distinctions in Clause Structure

The predicate and non-predicating elements, and those NPs and adpositional phrases which are arguments of the predicate and those are not are represented graphically.

The primary constituent units of the clause are the 'nucleus', the 'core', and a 'periphery'. These distinctions constitute the layered structure of the clause as in the figure 2.2.

CLAUSE

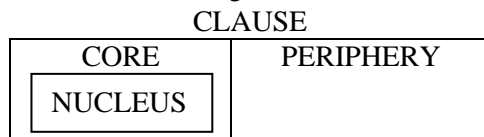| CORE | PERIPHERY |
| NUCLEUS | |

Figure 2.2: Components of the Layered Structure of the Clause

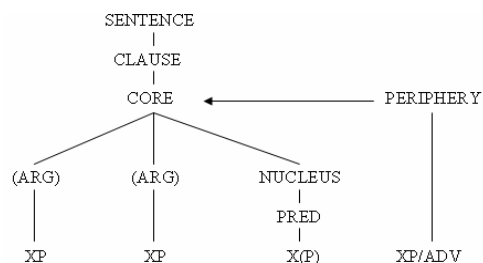b. *Formal Representation of the Layered Structure of the Clause*

Figure 2.3: Formal Representation of the Layered Structure of the Clause

- Non-universal aspects of the layered structure of the clause.

The non-universal aspects consist of the detached phrases, the extra-core slots.

c. *Operators and their Representation*

Elements which are important parts of each sentence, representing grammatical categories, but are not attached to anything are considered as **operators** modifying different layers of the clause.

2.2.1.2. *The Layered Structure of Adpositional and Noun Phrases*

a. *Adpositional Phrases*

There are two basic types of adpositions: predicative and non-predicative.

b. *Noun Phrase Structure*

The layered structure for NPs is similar but not identical to that for clauses.

2.2.2. Semantic Representation in English Simple Sentences

2.2.2.1. *A Typology of Sates of Affairs and their Participants*

There are four basic types of states of affairs: *Situations*, *Events*, *Processes*, *Actions.*

2.2.2.2. *The Lexical Representation of Verbs and their Arguments*

a. *Verb Classes*

Robert D. and Van Valin, JR proposed four basic classes: states, achievements, accomplishments and activities.

b. *Lexical Representation for Verbs*

These distinctions among the basic *Aktionsart* types may be represented in table 2.4.

Table 2.4: Lexical Representations for the Basic Aktionsart Classes

Aktionsart class	Logical structure
STATE	**predicate'** (x) or (x, y)
ACTIVITY	**do'** (x, [**predicate'** (x) or (x, y)])
ACHIEVEMENT	INGR **predicate'** (x) or (x, y), or
	INGR **do'** (x, [**predicate** (x) or (x, y)])
SEMELFACTIVE	SEML **predicate'** (x) or (x, y)
	SEML **do'** (x, [**predicate'** (x) or (x, y)])
ACCOMPLISHMENT	BECOME **predicate'** (x) or (x, y)
	or BECOME **predicate'** (x, [**predicate'** (x) or (x, y)])
ACTIVE ACCOMPLISHMENT	**do'** (x, [**predicate$_1$'** (x, (y))] & INGR **predicate$_2$'** (z, x) or (y)
CAUSATIVE	α CAUSE β, where α, β are logical structures of any type

c. The Semantic of Predicate- argument Relations

The interpretation of an argument is a function of the class or subclass of the predicate and its position in the logical structure.

- Recipients, Goals and Sources

The denifitions of RECIPIENT, GOAL and SOURCE are shown in (2.11)

(2.11) a. RECIPIENT: first argument in LS configuration '…BECOME / INGR **have'** (y, z)'

b. GOAL: first argument in LS configuration '…BECOME / INGR **be-loc'** (y, z)'

c. SOURCE: first argument in LS configuration '…BECOME / INGR NOT **have'** / **be-loc'** (y, z)'

2.2.2.3. Semantic Macroroles

The generalized AGENT-type role is called **actor** and generalized PATIENT-type role is termed **undergoer**

The relation between macroroles and logical structure argument positions is captured in the actor-undergoer hierarchy in figure 2.11.

ACTOR				UNDERGOER
Arg. of DO	1st arg. of **do'** (x, …	1st arg. of **pred'** (x, y)	2nd arg. of **pred'** (x, y)	Arg. of state **pred'** (x)
[→' = increasing markedness of realization of argument as macrorole]				

Figure 2.11: Actor-undergoer Hierarchy (preliminary)

2.2.2.4. Valence, Transitivity and Macrorole Assignment

Valence means how many arguments a verb takes.

Transitivity can be defined in terms of the number of macroroles that it takes.

2.2.2.5. Lexical Entries for Verb

The logical structure of the verb is the heart of its lexical entry.

2.2.2.6. The Representation of Adjuncts and Operators

- Adjuncts: Adpositions and Adverbs

+ Adpositions

Typologically, there are three types of prepositions: (1) argument-marking prepositions; (2) adjunct prepositions; and (3) argument-adjunct prepositions.

+ Adverbs

Semantically, they are treated as one-place predicates which take a logical structure or subpart of a logical structure as their argument.

- Operators

The general scheme is given in (2.16).

(2.16) *<IF***DEC***<*EVID***HS***<*TNS***PAST***<*STA***REAL***<*NEGø*<*MOD***O BLG***<*DIRø*<***PERFPROG***<*LS>>>>>>>>>*

2.2.2.7. Lexical Rules

There are some lexical rules mentioned in (2.17).

(2.17) a. Activity [motion] → active accomplishment: given an activity LS **do'** (x, [**pred'** (x)], add '& BECOME **be-Loc'** (y, x)' to form an active accomplishment LS.

b. Activity [consumption] → active accomplishment: given an activity LS **do'** (x, [**pred'** (x, y)]) '& BECOME **consumed'** (y)' to form an active accomplishment LS.

c. Activity [creation] → active accomplishment: given an activity LS **do'** (x, [**pred'** (x, y)]) '& BECOME **exist'** (y)' to form an active accomplishment LS.

2.2.2.8. The Semantic Representation of Nouns and Noun Phrases

- Possessive Phrases and NP Adjuncts

- Pronouns and Reflexives

- NP Operators

2.2.3. Syntactic Relations and Case Marking

2.2.3.1. Privileged Syntactic Arguments

The markedness of privileged syntactic argument choice is captured in RRG in terms of the privileged syntactic argument selection hierarchy, given in (2.22).

(2.22)   Privileged syntactic argument selection hierarchy:

arg. Of DO > 1st arg. Of **do'** > 1st arg. Of **pred'**(x, y) > 2nd

arg. Of **pred'** (x, y) > arg. Of **pred'** (x)

2.2.3.2. Case Marking and Agreement

The casemarking rules cover regular case marking and are given in (2.25). They apply to direct core arguments only.

(2.25)   Case assignment rules for accusative constructions:

a.   Assign nominative case to the highest ranking macrorole argument (in terms of (2.22)).

b.   Assign accusative case to the other macrorole argument.

2.2.3.3. Other Syntactic Functions

CHAPTER 3

METHODS AND PROCEDURES

3.1. RESEARCH DESIGN

Since a contrastive analysis of the linking between the semantic and syntactic representations in English and Vienamese will be executed in this paper, descriptive and contrastive analyses are considered as the main supporting methods.

3.2. METHODS OF THE STUDY

The thesis is carried out with a combination Descriptive, Analysis and Contrastive methods.

3.3. PROCEDURES

Phase 1: Data is collected, time is planned and procedure is estimated.

Phase 2: The second phase is to find the documents.

Phase 3: Documents are planned to read thoroughly.

Phase 4: The linking between the semantic and syntactic representations is described carefully. These features are analyzed in contrast with each other in both languages.

Phase 5: Similarities, differences, conclusion of the whole work and some implications are given.

3.4. DATA COLLECTION AND DATA ANALYSIS

Data collection for the study is collected from prose and grammar books in English and Vietnamese. The main materials used in the study are collected from the sources including the novels and short stories, the grammar books written by English and Vietnamese linguists, the English – Vietnamese and Vietnamese – English dictionaries, the studies published in linguistic journals, the academic writing such as linguistic research papers, the internet sources.

3.5. RELIABILITY AND VALIDITY

We have carried out a careful literature review of the theory by means of some standard books and researches, typically *Exploring the Syntax – Semantics Interface* by Van Valin R.D, *Syntax: Structure, Meaning and Function* by Van Valin R.D & LaPolla…. In addition, the system of linguistic theory is available. All these things set up a sound theoretical background for the study.

Since simple sentences used for analysis in the thesis are the basic and common from reliable theoretical story books in English as well as in Vietnamese, the analysis of layered structure and logical structure is hardly mistaken. Therefore, the applications in the thesis are reliable and valid.

CHAPTER 4
FINDINGS AND DISCUSSION

4.1. LINKING THE SYNTACTIC AND SEMANTIC REPRESENTATIONS IN ENGLISH AND VIETNAMESE SIMPLE SENTENCES
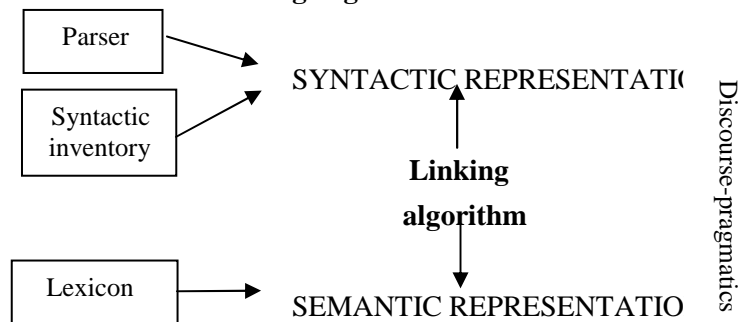
4.1.1. The Linking Algorithm

Figure 4.2: Organization of Role and Reference Grammar

4.1.2. Constructional Schemas

The English passive and WH-question constructions are good examples of interaction of the general and the language-specific.

4.1.3. From Semantics to Syntax

4.1.3.1. Linking Procedure

The Summary of the linking procedure from semantics to syntax is clearly presented in 5 steps.

The linking in the sentence "*Pat gave the book to Chris*" is an *example.* First, the speaker is realizing a specific communicative intention. Then he figures into the formulation of the semantic representation along with syntactic template selection. The activation level of the referents of the NPs is also represented in the semantic representation. The result of step (1) is given in Figure 4.3.

$$<_{IF}DEC <_{TNS}PAST < [\textbf{do'} (Pat_{ACV}, \text{ø})] \text{ CAUSE } [\text{BECOME } \textbf{have'} (Chris_{ACS}, book_{ACV})]>>>$$

Figure 4.3 Output of Step 1 in (4.3)

The second step is actor and undergoer assignment.

$$\ldots [\textbf{do'} (ACT: Pat_{ACV}, \text{ø})] \text{ CAUSE } [\text{BECOME } \textbf{have'} (NMR: Chris_{ACS}, UND: book_{ACV})]$$

Figure 4.4 Output of Step 2 in (4.3)

The third step is to determine privileged syntactic argument selection and case/adposition assignment.

… [**do'** (ACT: Pat$_{ACV}$, ø)] CAUSE [BECOME **have'** (NMR: Chris$_{ACS}$, UND: book$_{ACV}$)]
[PSA: NOM] Active, 3sg [ACC] [ACC]

Figure 4.5 Output of Step 3 in (4.3)

Step 4 is syntactic template selection showed in Figure 4.6
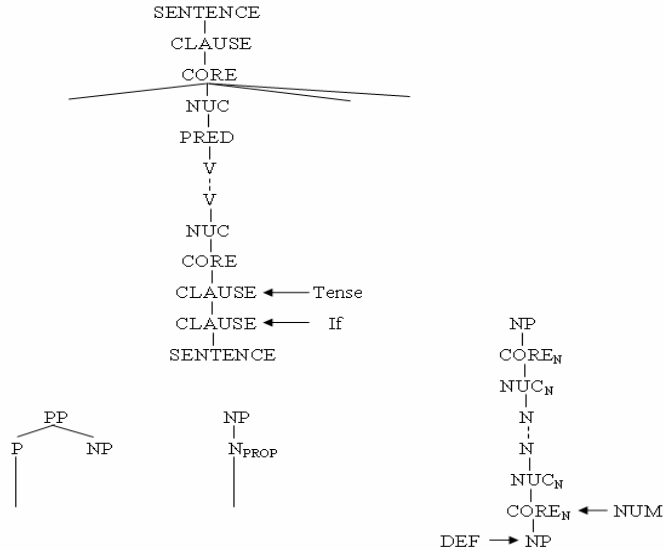
Figure 4.6: Output of Step 4 in (4.3)

The final step is shown in Figure 4.7, involving linking the XPs into the structure.
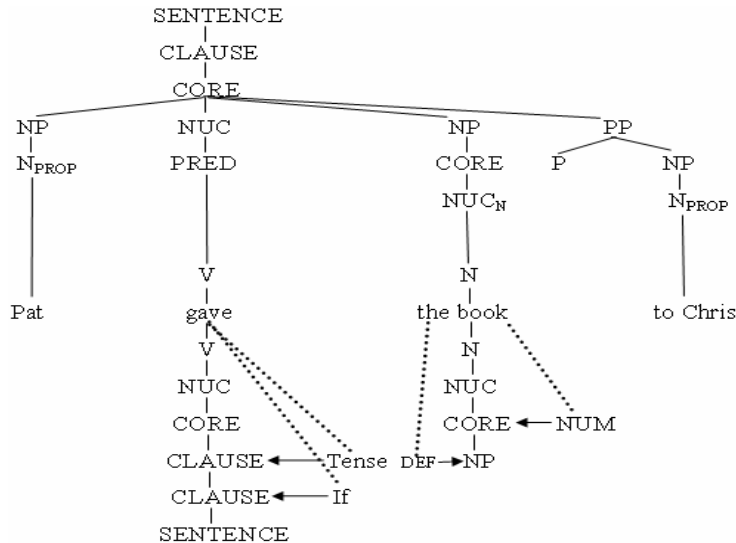

Figure 4.7: Output of All Steps in (4.3)

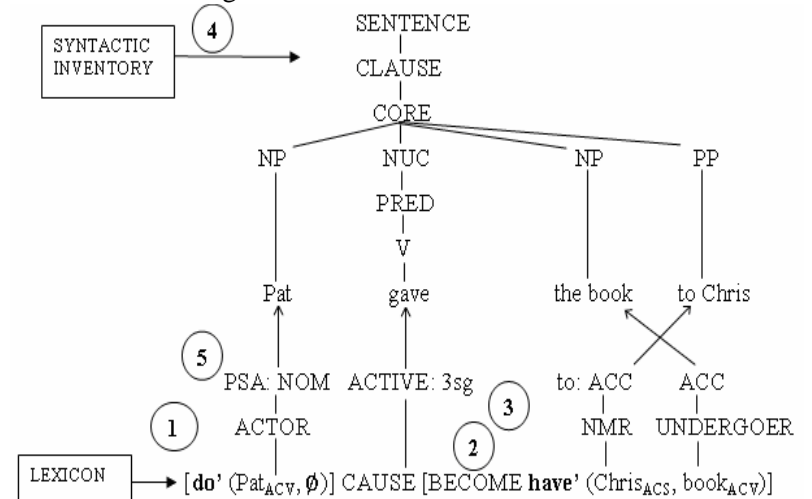All of the relevant linking information from Figures 4.3 – 4.7 is abbreviated in Figure 4.8 below.

Figure 4.8: Abbreviated Linking Diagram Summarizing Figure 4.3-4.7

4.1.3.2. Application

In this part, we only give the linking of three-place predicate constructions.

(4.15)   *He placed the baby on the woman's lap.*

From the general semantic representation for three-place predicate constructions, we have the logical structure of this sentence: [**do'** (3sg, ø)] CAUSE [BECOME **be-on'** ([**have.as.part'** (woman, lap)], baby)]. The leftmost argument on the logical structure "*3sg*" is selected as actor and the rightmost argument "*the baby*" is undergoer: this is the unmarked choice selection. The oblique argument "*lap*" marked by an adposition "*on*" is non-microrole argument because in RRG, actor and undergoer are never oblique arguments within the core. 'Goal' may be defined as the location

argument in the logical structure. The linking in (4.15) is represented in Figure 4.21.
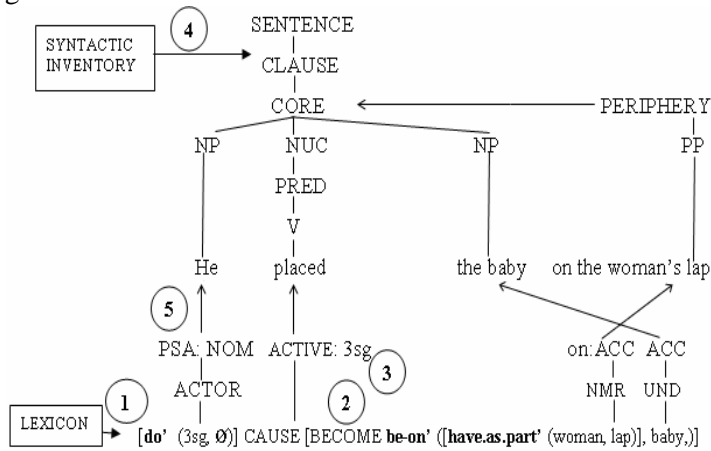
Figure 4.21: Semantics to Syntax Linking in the English Sentence with Three-place Predicate Construction

A similar three-place predicate construction in Vietnamese is analyzed as follows:
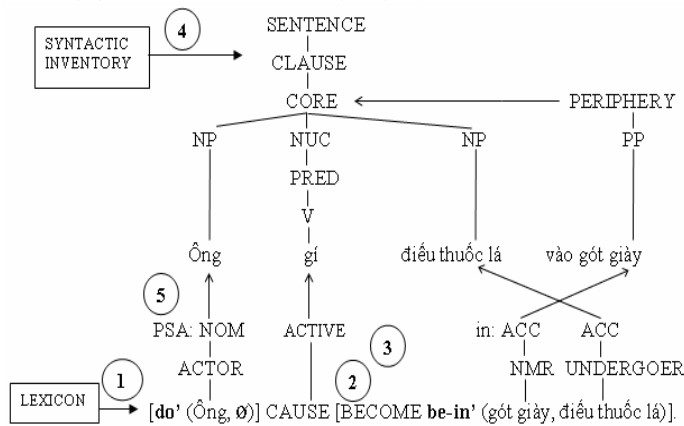
(4.16)   *Ông gí điếu thuốc lá vào gót giày.*

Figure 4.22: Semantics to Syntax Linking in the Vietnamese Sentence with Three-place Predicate Construction

Because this sentence has the same structure as the English one in (4.15), so the actor is "*Ông*" functioning as the privileged syntactic argument, "*điếu thuốc lá*" is the   undergoer and "*gót giày*" is a non-microrole core argument marked by an adposition. The linking is represented in Figure 4.22.

4.1.4. From Syntax to Semantics

4.1.4.1. Linking Procedure

There are so many steps in the linking algorithm and for any particular language it will involve only steps that are relevent to that language.

The application of this linking algorithm to English can be illustrated with a simple sentence like *Max melted the ice*. The first step is to identify the verb and its voice: *melt* is a transitive verb and unmarked voice, which means that the privileged syntactic argument is the actor and the direct object following the verb is the undergoer. The second step is to retrieve the logical structure of *melt* from the lexicon, [**do'** (x, ø)] CAUSE [BECOME **melted'** (y)], in which x = actor and y = undergoer. In step 3 the arguments from the sentence are linked to the logical structure arguments resulting in 'x = *Max*' and 'y = *the ice*'. This is illustrated in Figure 4.35.
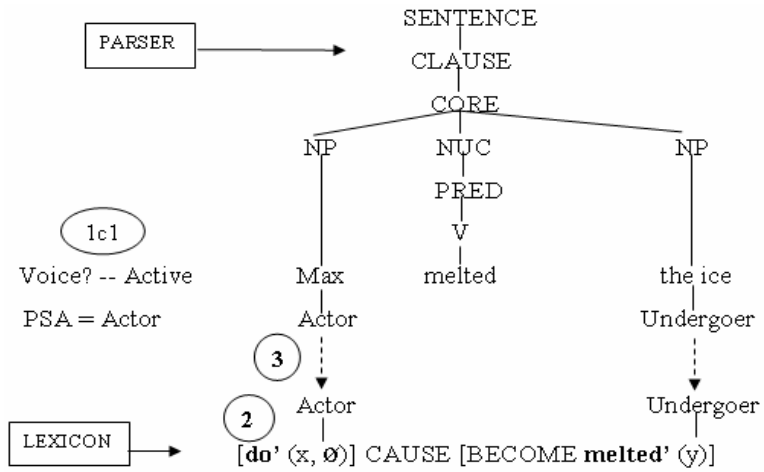
Figure 4.35: Syntax to Semantics Linking in the English Sentence with a Transitive Verb

4.1.4.2. Application

The first sentence we want to analyze contains variable undergoer selection.
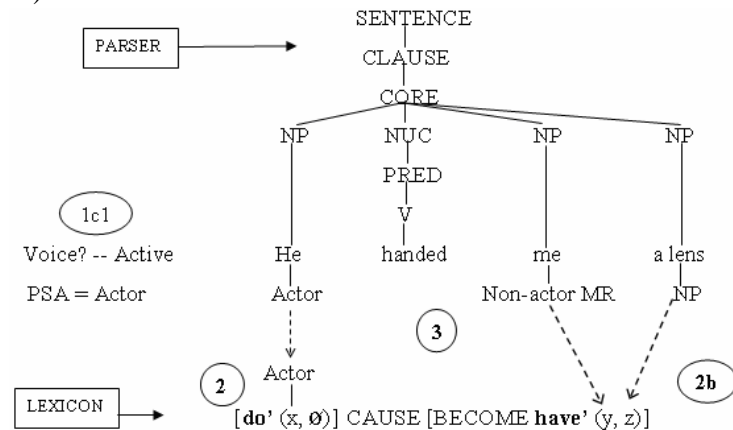
(4.30)   *He handed me a lens.*

Figure 4.36: Syntax to Semantics Linking in the English   Sentence with Three- place Predicate Construction

The first step is to determine the voice of the verb; it is active voice, so the privileged syntactic argument is the actor. Because it is dative case, macrorole status to the other direct core argument is not assigned. The next step is to call up the logical structure for *hand* from the lexicon, [**do'** (x, ø)] CAUSE [BECOME **have'** (y, z)]. Step 2 is then carried out, with the result that x = the actor. Because there is a variable undergoer selection with the verb, undergoer cannot be assigned. The non-macrorole argument *a lens* is not marked by a locative-type preposition, so it is linked with the second argument position in the state predicate. And since the lack of a preposition impacts the same information as the occurrence of a non-locative preposition, i.e. the non-actor argument *me* does not link to the first argument potition in the two-place predicate in the logical structure of the verb. By step 3 the two actors may be linked; this leaves the non-actor MR in the clause and the y argument in the logical structure unassigned, and the two remaining arguments must be linked in order to satisfy the completeness constraint. The result is *He* = actor = x, *me* = undergoer = y, and *a lens* = z. The linking in (4.30) is shown in Figure 4.36.

A similar structure in Vietnamese is also given out to compare.

(4.31)   *Ông Xuân vừa gởi tôi một cái thư.*

This example follows the same steps and has the same interpretation as in the sentence in (4.30). Its syntactic and semantic represestations are linked in Figure 4.37.
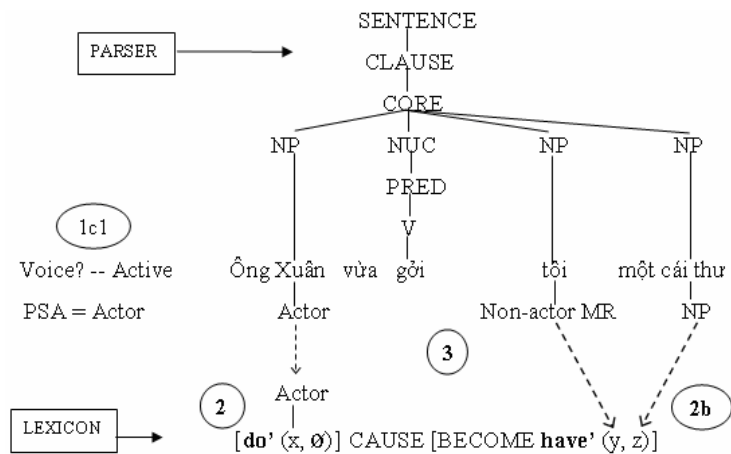
Figure 4.37: Syntax to Semantics Linking in the Vietnamese Sentence with Three-place Predicate Construction

4.2. SUMMARY

4.2.1. Similarities

One of the most important features both of the languages have is that both belong to accusative languages with the order SVO, in which the subject is marked with nominative case and the object is marked with accusative case. Moreover, both of the languages include a voice opposition. Consequently, when applying the theory RRG in Vietnamese, we can have the actor-undergoer choice, the privileged syntactic argument selection, and case or preposition assignment rules similar to English. More clearly, the analyzed examples in the last part show that the Vietnamese constructions which are analogous to the English ones almost have the similar linkings.

4.2.2. Differences

First, Vietnamese is a morphologically invariable language. Therefore, the assigning the agreement marking to the main or

auxiliary verb fails to be done in Vietnamese. Besides, in English, pronouns are irregular morphologically and they will be represented in terms of their relavant features, e.g. person, number, and gender. Vietnamese pronouns, on the other hand, are represented by the stem in logical structure.

As for the attributive predication construction, it is compulsory to use the copula "be" in English, but the copula "là", the equivalent of "be", is optionally used in Vietnamese.

In addition, in English WH-questions, question words always appear in the initial position of a sentence while Vietnamese WH-questions have interrogative pronouns which stand in the usual positions they replace as in the declarative. With the initial position, the 'precore slot' can be assigned to them, but in case of the other positions, they may function as other usual noun phrases.

Another difference is related to the passive voice. With the passive consisting of agent, Vietnamese does not have the linking as English does because of being considered as a kind of complex sentences.

CHAPTER 5
CONCLUSION

5.1. CONCLUSIONS

Conclusions drawn from the process of investigation include the followings, in summary.

- The findings show that the syntactic representation is the presentation of the layered structure of the clause based on two fundamental contrasts: between the predicate and non-predicating elements, and between those NPs and adpositional phrases which are

arguments of the predicate and those are not. The primary constituent units of the clause are the 'nucleus', the 'core', and a 'periphery' and non-universal aspects consist of the detached phrases, the extra-core slots. When analyzing the layered structure of the clause in its representation, we find that Vietnamese mostly has the similar layered structure of the clause to English in the kinds of common simple sentences, except for some variations of the positions of argument adjunct prepositions.

- As for the semantic representation, it is the one which consists of the logical structure for verbs and their arguments, combined with the presentation of adjuncts and operators. The determination of semantic roles is very important in the semantic representation. Semantic macroroles are generalized roles, each of which subsumes a number of specific argument-types. The logical structure of the verb in English as well as in Vietnamese is refered to *the Lexical representations for the basic* Aktionsart *classes*, *the Definitions of thematic relations in terms of LS argument positions* and *the lexical entries for verbs.* Since this is an English theory, all the verbs analized in Vietnamese are interpreted into English so as to have their logical structure. Consequently, the lexical representations for both languages are similar if expressed with the similar meaning.

- There are more similarities than differences between English and Vietnamese. The majority of the structures in the scope of the investigation in the thesis have the similar syntactic representation.

- In spite of a number of similarities, there are some differences in the linking. Within the semantic representation, there is a small difference in the representation of pronouns. In English,

pronouns which are irregular morphologically will be represented in terms of their relevant features, e.g. person, number, and gender, while Vietnamese includes pronouns which seem to have an invariable stem; hence they will be represented by the stem in logical structure.

With regard to the syntactic representation, there are more differences than the semantic representation.

The first difference is the failure in the assignment of the agreement marking to the main or auxiliary verb due to the fact that Vietnamese is a morphologically invariable language.

Second, in the attributive predication construction, the copula "be" in English is always showed as an auxiliary verb in the syntactic representation, whereas the copula "là", the equivalent of "be", is optionally used in Vietnamese.

Third, English interrogative pronouns are always seen at the beginning of clause, that is, in the 'precore slot'; on the other hand, in Vietnamese WH-questions, interrogative pronouns stand in the usual positions they replace as in the declarative, they can be represented as the 'precore slot' or other usual noun phrases.

The passive voice with agent in Vietnamese does not have the same syntactic representation as that in English because in Vietnamese it is considered a complex sentence.

5.2. IMPLICATION FROM THE STUDY

This thesis is done in the hope that Vietnamese and English learners can grasp the linking between the actual structural form of utterances and the meaning of linguistic expressions. The findings of the thesis are also hoped to make a modest contribution to better

understanding and more effective use of the syntactic structure and its meaning in English and in Vietnamese by language users.

The RRG helps language learners turn to a new way to understand and analyze the grammar of the learnt language. This new theory takes a rather different view of grammatical relations from other theories and the syntactic function posited in RRG is not part of the same system of oppositions as the traditional notions of grammar relations. In addition, two types of semantic roles which play a crucial role in the linking system are thematic relations and semantic macroroles.

The thesis partly contributes to the discovery of the interaction among structure, meaning, and communicative function in English and Vietnamese.

Finally, the study proves to be a trustful reference for language users who wish to render correctly in their communication. It helps them gain the perfection of using a language by the combination between the form and its content.

5.3. LIMITATIONS

There are some following limited points in the research due to the limited time and sources of materials related to the problem under investigation, particularly English materials.

First, three elements: the syntactic representation, the semantic representation and discourse-pragmatics interact with each other in the linking algorithm. However, the aim of this reseach is to investigate the linking between the syntactic representation and the semantic representation, leaving the discourse-pragmatics unsatisfactorily explained. Furthermore, the information about Vietnamese based on the theory RRG for our reference is scarce;

therefore, in this research the Vietnamese simple sentences analyzed are only the ones which have the similar structures to the English simple sentences.

5.4. SUGGESTIONS FOR FURTHER STUDY

One aspect that is the most promising is *Linking the semantic and syntactic representations in English and Vietnamese complex sentences*.

Other aspects are *Locative Predicates in English and Vietnamese; The Role and Reference Grammar Analysis of Three-Place Predicates in English and Vietnamese; The Information Structure in the Linking Algorithm.*