

THE INTERACTION OF MODALITY, ASPECT AND NEGATION

IN PERSIAN

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Azita Hojatollah Taleghani

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As members of the Dissertation Committee, we certify that we have read the dissertation

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and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy

Dr. Heidi Harley Date: 05/08/2006

Dr. D.Terence Langendoen Date: 05/08/2006

Dr. Andy Barss Date: 05/08/2006

Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copies of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

Dissertation Director: Dr. Heidi Harley Date: 05/08/2006

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Azita Hojatollah Taleghani

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ABSTRACT

This dissertation investigates the verbal system of Persian and is focused on the interaction of modality, tense, aspect and negation in this language. The dissertation challenges the idea that the syntactic structure maps on to the semantic interpretation or vice-versa.

It is argued that modals are raising constructions in some languages (Wurmbrand 1999). Modals in Persian, which do not have subject-raising constructions, show different behavior. First, the root complex modals are generally syntactic control in Wurmbrand's (1998, 2001) proposal. There are just a few gaps with respect to dynamic root modals. Second, all epistemic modals which are either defective auxiliary modals or complex modals take default agreements and are pseudo-raising constructions. Third, the syntactic structures of modals show that there is no one-to-one correspondence between the structural positions and semantic interpretations of modals in Persian except in the auxiliary modal *bâyad* 'must'.

The second contribution of this dissertation is that the class of restructuring verbs varies across languages. German semantic control verbs are instances of restructuring constructions (Wurmbrand 2001) while the only case of restructuring in Persian is the functional restructuring which appears in auxiliary modals such as *bâyad* 'must' and *šâyad* 'may' since they are mono-clausal and do not have a CP.

This dissertation also investigates the structure of complex verbal forms in Persian. It is argued that Persian future tense is an instance of Serial Verb Constructions. However, progressives which are bi-clausal constructions are Aspectual Complex predicates.

In the case of the structural analysis of the interaction of Persian modals and negation, this dissertation shows that the syntactic structure maps on the semantic interpretation or vice-versa. There are just a few gaps with respect to the scope possibilities of particular modals.

The final contribution of this dissertation is related to the problem of the word order of NV elements and LV within complex predicates. This research provides three suggestions regarding the clausal complement position in complex predicates, and suggests that the vP remnant movement is the most reasonable one, since it is compatible with the recent trends of syntactic theories and suggested for some other languages (Mahajan 2003).

LIST OF ABBREVIATIONS

Acc = Accusative	Inf =infinitive
BCPr = Bi-Clasual Predicate	ms = Masculine
D.Obj = Direct Object	Nom = Nominative
Dur = Durative	pl = Plural
CPr = Complex Predicate	Prf = Perfect
Eph = Emphatic	Prs = Present
Erg = Ergative	Prt = Participle
EZ = Ezâfe	Pst = Past
fm = Feminine	Rel = Relative Marker
Incl = Inclusive	sg =Singular
Ind =Indicative	Subj = Subjunctive
Ind.Obj = Indirect Object	VCPr =Verbal Complex Predicate

SPECIFIC CODES

- * ungrammatical
- # grammatical, but pragmatically ill-formed
- ? marginal

CHAPTER 1

INTRODUCTION

1. The Goal of the Research¹

Persian has a rich morphology. Its morphological system includes many different affixes, which are productive for creating different forms or new words. The verbal inflection system is one of the best examples that show the richness of this.

This dissertation investigates the verbal system of Persian and is focused on the interaction of operators such as modality, tense, aspect and negation in this language within the Minimalist program (henceforth MP) (Chomsky 1995, 1999, 2001, 2004). The main question which is addressed in this research is: Does the morpho-syntactic structure of operators, especially modals, map on their semantic interpretation or vice-versa?

This chapter is organized as follows: Section 2 is devoted to an overview of the phrase structure of Persian. In this section, I discuss the head position of Persian phrases then I have a brief discussion of passive, raising and expletive constructions in Persian based on Karimi (2005). In Section 3, I present different data regarding tense, aspect and modality and their interactions with negation. In Section 4, I provide a brief overview of the theoretical framework of the dissertation.

¹ The data in this research are Tehrani form of colloquial Farsi, one of the variants of Persian. The data in formal Farsi will be specified.

2. Persian Phrase Structure

In this section, I will present an overview of the word order in Persian. I also show how passive, raising and expletive constructions work.

2-1. Persian as an SOV Language

Persian² has an SOV order. This means that the object³ (internal argument) immediately precedes the verb, and indirect objects also precede the verb being represented by prepositional phrases (PP) as illustrated in (1).

	Indirect object	Direct object	
1)	Sârâ be Sâsân	ketâb	dâd.
	S. to S.	book	gave-3 rd sg.
	‘Sârâ gave this book to Sâsân.’		

Despite being an SOV language, Persian does show some head initial properties such as complement phrase (CP) follows the verb rather than precedes it.

Kayne (1994:6) proposes that word order in general reflects universal structural hierarchy, claiming that word order can be derived his proposed Linear Correspondence Axiom (LCA). He assumes that there is a universal order of Specifier-Head-Complement (S-H-C), and any other word order is derived. His proposal implies that all

² Modern Persian is a member of the Indo-Iranian language group, which is a branch of the Indo-European family. It is spoken in Afghanistan, Iran and Tajikistan and it is named: Dari, Farsi, and Tajiki, respectively in each of these regions.

³ Direct objects are marked by *râ* if they are specific. This is illustrated by the following example.

i) Sârâ ketâb-ro be Sâsân dâd.
 S. book-râ-ACC to S. gave-3rdsg.
 ‘Sârâ gave this book to Sâsân.’

It is worth noting that the particle *râ* is a specificity marker that appears with nominal elements that receive accusative Case. In spoken language, *râ* is employed as *ro* and *o*. (See Lazar 1992, Ghomeshi 1997, Karimi 1990, 1996, 1999 for detailed analysis.)

SOV languages must be derived from an SVO order. Every instance of OV order results from movement. He assumes a distinct head for every moved phrase such the moved element can adjoin to its projection as its specifier. If Kayne's proposal is true, then Persian SOV order is a derived order, not an underlying order. Let us consider this proposal.

- 2) a. Sârâ *in keik-ro* *barâ-ye tavalod-e Sâsân* *poخته*.
 S. this pastry-râ for -EZ⁴ birthday-EZ S. cooked-3rdsg.
 'Sârâ has cooked this cake for Sâsân's birthday.'
- b. Sârâ *poخته/POXTE* *in keik-ro* *barâ-ye tavalode Sâsân*.
 S. cooked-3rdsg. this pastry-râ for -EZ birthday S.
 'Sârâ has cooked this cake for Sâsân's birthday.'

The sentence in (2a) shows the default Persian word order and the direct object precedes the verb. If SOV is derived from SVO, why is the former unmarked semantically and discursively in (2a), while the latter, as shown in (2b), receives an additional interpretation such as contrastive focus or topic?

Based on Kayne (1994), SOV orders are created by the movement of the object from the base-position to the higher phrase (Spec-vP), receiving Case. But what about the following sentence in which the PP appears before the V? How can Kayne's proposal give an account for the movement of PP, since this movement can not be motivated by Case?

- 3) Sârâ *barâ-ye tavalode Sâsân* *in keik-ro* *poخته*.
 S. for -EZ birthday S. this pastry-râ has cooked-3rdsg.
 'Sârâ has cooked this cake for Sâsân's birthday.'

⁴ EZ represents EZAFE particle "e" that is structurally utilized as a link between the head and its modifier and the possessor NP (Ghomeshi 1997, Samiiian 1983, 1994).

However, it is worth noting that the position of clausal complement –as mentioned above– of the verb is compatible with Kayne’s proposal. Consider (4).

- 4) Sârâ fekr mi-kon-e (ke) dar emtehân qabul be-š-e.
 S. thought Dur-do-3rdsg. (that) at exam pass Subj-become-3rdsg.
 ‘Sârâ thinks that she will pass the exam.’

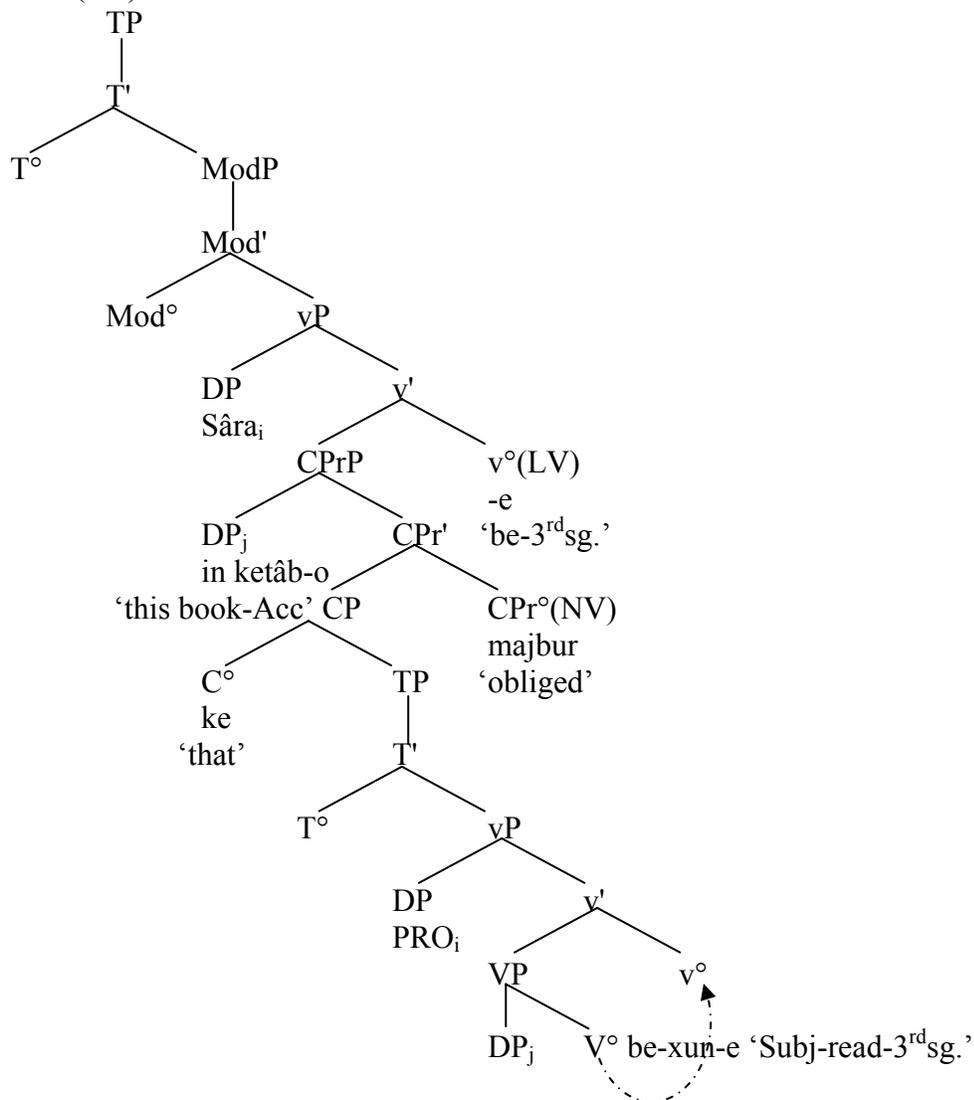
A question that arises here is if Persian is an SOV language, how can we account for the sentence (4) in which the clausal complement follows the verb?

A specific case of this problem arises with respect to the data that this dissertation focuses on, as we will see in Chapter 3 of this research. In the case of complex modal verbs such as *majbur budan/šodan* ‘to be obliged/to become forced’ or *momken budan* ‘to be necessary,’ if we consider Persian default word order to be SOV then we predict the wrong order of CP with respect to the non-verbal element and light verb in complex modals. Consider the following sentence and its structure⁵.

- 5) *Sârâ (ke) in ketâb-o be-xun-e majbur-e.
 S. that this book-ACC Subj-read-3rdsg. obliged-be-3rdsg.
 ‘Sârâ is obliged to read this book.’

⁵ It is worth noting that in all the subjunctive cases there is a MoodP before vP in tree diagrams which is omitted for the simplicity of the structure.

DIAGRAM (1-1)



In Chapter 6 of the dissertation, based on Kayne's (1994) and Karimi's (2005) analysis, I will provide a detailed discussion regarding the position of the clausal complements in general and in complex predicates in particular.

In the next sub-section I present an overview of some syntactic constructions in Persian which are critical to the core discussion of this research. These constructions include passive, raising, and expletives.

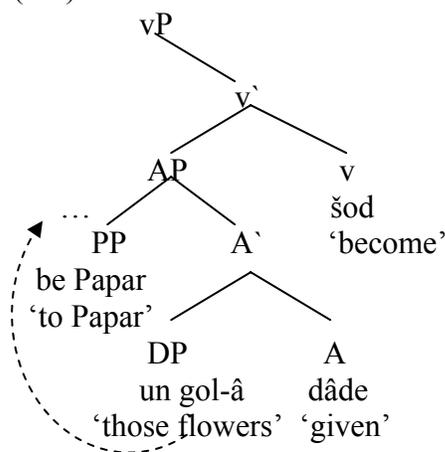
2-2. Passive in Persian

There are some controversies regarding passive constructions in Persian. Some linguists believe that Persian has structural passive similar to what we observe in English (Soheili Isfahani 1976, Hajatti 1977, Dabir Moqadam 1985). On the other hand, Moyne (1974), Karimi (1989, 2005), and Ghomeshi (1997, 2001) suggest that Modern Persian lacks passive constructions. Folli, Harley, and Karimi (henceforth FHK) (2005) propose that the Persian passive construction is just an instance of a Complex Predicate construction (henceforth CPR) with a past participle as its nonverbal (henceforth NV) element. Consider the following sentence.

- 6) un gol-â be Parviz dâde šod.
 that flower-pl to P. given was
 ‘Those flowers were given to Parviz.’

(FHK 2005:1395, 72)

DIAGRAM (1-2)



(FHK 2005:1395, 73)

In diagram (1-2), *dâde* ‘given’ has adjectival properties and the complement of the verbal adjective moves into the Spec-vP since it is specific. FHK (2005:1376) suggest that one of the supportive pieces of evidence that there is no real passive construction in Persian is that certain agentive light verbs are replaced by inchoative or unaccusative

light verbs in a CPr in which receives a passive interpretation. Consider the following sentence.

- 7) a. Parviz xuna-ro xarâb kard.
 P. house-râ destroyed did-3rdsg.
 ‘Parviz destroyed the house.’
 b. xune xarâb šod.
 house destroyed became-3rdsg.
 ‘The house was destroyed.’
 c. *xune xarâb karde šod.
 house destroyed made-Prt became-3rdsg.

(FHK 2005:1306, 75)

As (7) shows, the agentive light verb *kardan* ‘do/make’ is replaced by the inchoative verb *šodan* ‘become.’ In the ungrammatical structure (7c), the CPr light verb *kardan* has been turned into a past participle, as in the heavy verb passive in (6). This is ill-formed, showing that there is no room for two no-verbal elements at the head of CPr in the constructions. This supports the claim that passive constructions are instances of CPr.

In the next sub-section we have an overview of Persian raising constructions.

2-3. Raising Construction in Persian

The main property of raising constructions is that they do not have an external argument and the surface subject originates from the embedded clause. There are some controversies in the literature on the raising construction in Persian. Hashimipour (1989), Karimi (1999, 2005), and Ghomeshi (2001) argue that Persian lacks raising constructions. Darzi (1996), on the other hand, suggests that Persian exhibits raising constructions.

Darzi (1996) provides a piece of evidence showing that the subject position of the matrix verb can be filled with the demonstrative *in* ‘this’, which he considers to be an expletive. He assumes that in the presence of *in*, no embedded element can move into the matrix clause. Consider the following examples from Darzi (1996:93-4).

- 8) a. (*in*) lâzem-ast [CP ke [Ali ketâb-râ be u be-dah-ad]].
 it necessary is that A. book-râ to him Subj-give-3rdsg.
 ‘It is necessary that Ali gives the book to him.’
- b. (**in*) Ali_i (**in*) lâzem-ast [CP ke [t_i ketâb-râ be u be-dah-ad]].
 It A. it necessary-is that book-râ to him Subj-give-3rdsg.

Darzi (1996: 94) suggests that (8b) is ungrammatical since the embedded subject has moved into the matrix subject position. If this is the case this is an example of a true A-movement and raising constructions.

On the other hand, Karimi (2005:12-14) among others argues that Persian lacks raising, based on the following evidence:

- A) The embedded subject does not need to move into the matrix clause.
- B) The embedded subject agrees with the embedded verb.
- C) There is no agreement between the matrix verb and the moved embedded subject.
- D) Any other phrasal element may move into the matrix clause in these constructions.

These facts are exemplified in (9).

- 9) a. be nazar mi-y-ad/*mi-y-an (ke) bačče-hâ in film-o dide bâ-š-an.
 to view Dur-come-3rdsg/Dur-come-3rdpl. that child-pl this movie-râ seen Subj-be-3rdpl
 ‘It seems that the children have seen this movie.’

- b. *bačče-hâ be nazar mi-y-ad/*mi-y-an* (ke) *in film-o dide bâ-š-an.*
 child-pl to view Dur-come 3rdsg./Dur-come-3rdpl. that this movie-râ seen Subj-be-3rdpl.
 ‘The children seem to have seen this movie.’
- c. *in film-o be nazar mi-y-ad/*mi-y-an* (ke) *bačče-hâ dide bâ-š-an.*
 this movie-râ to view Dur-come 3rdsg./Dur-come-3rdpl. that child-pl.seen Subj-be-3rdpl.
 ‘The children seem to have seen this movie.’

As (9a) shows, the embedded subject *bačče-hâ* ‘child-pl’ is plural and agrees with the embedded verb *dide bâš-an* ‘seen-Prt-be-3rdpl.’ not with the matrix verb *be nazar mi-yâ-d* ‘to view-Dur-come- 3rdsg.’. The sentence in (9c) shows that the object of the embedded clause move into the matrix clause and the subject of the embedded clause remains in-situ and the sentence is grammatical.

Based on the above discussion, I conclude with Karimi (2005) that Persian lacks raising constructions, however, embedded elements can move into the matrix clause for discourse reasons. It could be argued that the subject position in matrix clause can be filled by covert expletives. This is the topic of our discussion in the next sub-section.

2-4. Expletives in Persian

The lack of the subject in raising constructions arises the question of whether the subject position is filled by an expletive in these constructions.

As we saw in Section (2-3), Darzi (1996) provides a piece of evidence showing that the subject position of the matrix verb in raising constructions can be filled with the demonstrative *in* ‘this’, which he considers to be an expletive. We argued above that *in* ‘this’ cannot be an expletive since it is optional.

Moreover, as Karimi noted the post verbal clause may appear in the matrix clause, following *in*. In this case the presence of *in* is obligatory as illustrated in (10b) (p.91).

10) a. (in) bar hame âškâr-e ke Kimea doxtar-e xubi-ye.
 this to all obvious that K. girl-Ez good-be-3rdsg.
 ‘It is obvious to everyone that Kimea is a good girl.’

b. in ke Kimea doxtar-e xubi-ye bar hame âškâr-e.
 this that K. girl-Ez good-be-3rdsg. to all obvious-be-3rdsg.
 Intended meaning: ‘It is obvious to everyone that Kimea is a good girl.’

(Karimi 2005: 91, 92; 65, 68)

in can also be attached to the complementizer *ke* ‘that’, and in this context the presence of *in* is also obligatory.⁶ This is shown in (11).

11) man be *in* [CP ke Sârâ dar in mosâbeqe barande mi-š-e] imân dâr-am.
 I to this that S. in this competition winner Dur-become-3rdsg. belief have-1stsg.
 ‘I believe that Sârâ will win this competition.’

Rizzi (1982/1986a) suggests that null subject languages do not have overt expletives since they license *pro*, and they can therefore license empty non-referential subjects like covert expletives. Since Persian is a null subject language, one expects that it should have covert expletives. Karimi (2005:93), however, shows that there is no evidence that Persian has covert expletives. One piece of evidence comes from the fact that Persian is not subject to the Definiteness Effect, as illustrated in (12).

12) ma’mulan Kimea tu ketâbxune dars mi-xun-e.
 usually K. in library lesson Dur-read-3rdsg.
 ‘Kimea usually studies in the library.’

(Karimi 2005:94, 77)

⁶ See the detailed discussion of the clitic and non-clitic functions of *ke* ‘that’ in Mohammad and Taleghani (2005).

Karimi (2005: 124) argues that sentential adverbs appear on the left edge of vP in Persian. In the example (12), the entire sentence is focused and the definite subject *Kimea* is inside the vP. This indicates that Persian is not subject to Definiteness Effect while languages like English which have expletives cannot violate this effect. This is illustrated in (13).

13) *There is Peter at the library.

As we saw above, Persian does not have overt expletives but if it had even covert expletives, it should be the subject of Definiteness Effect. Therefore, we can conclude that Persian does not have the covert expletives either.

In the next section, I introduce the main topic of this research, i.e., tense, aspect, modality and negation.

3. Data: Tense, Aspect, Modality, and Negation

3-1. Tense and Aspect

Consider the following sentences in present tense (14), past imperfect tense (15), colloquial present and past progressives (16, 17) and future tense (18).

- 14) qazâ -ro *mi*-xor-am. (Present tense)
 food râ Dur-eat-Prs.Stm-1stsg.
 ‘I am eating the food.’
- 15) qazâ-ro *mi*-xord-am. (Past imperfect)
 food râ Dur-eat-Pst.Stm-1stsg.
 ‘I was eating the food.’
- 16) dâr-am qazâ-ro *mi*-xor-am (Present progressive)
 have-1stSg. food râ Dur-eat-Prs.Stm- 1stsg.
 ‘I am eating the food.’

- 17) *dâšt-am qazâ-ro mi-xord-am.* (Past progressive)
 had-1stSg. food râ Dur-eat-Pst.Stm-1stsg.
 ‘I was eating the food.’
- 18) *qazâ-ro xâh-am xord.* (Future tense)
 food râ want-1stsg eat
 ‘I will eat the food.’

There are two main puzzles that I will address below: First, the nature of *mi-*, and second, the nature of the auxiliary *dâštan* ‘to have’ in the progressive. As for *mi-*, notice that in every given tense except future the prefix *mi-* occurs. Persian linguists and grammarians have different proposals on the function of *mi-*. Some linguists have suggested that *mi-* shows the on going nature of the event. (Ghomeshi 2001:27). Others assume that *mi-* refers to a habitual event either in present and past tense (Lambton 1961, Windfuhr 1979). Mahutiyan (1999:228) categorizes *mi-* as the marker of both habitual and imperfect aspects. In Section 4 of Chapter 4 of this research, I propose that *mi-* is an Aspect marker and semantically refers to both habituality and continuity of an action. Syntactically, *mi-* is located in the head of AspP.

Turning to the auxiliary *dâštan* ‘to have’ in the progressive, as sentences (16) and (17) show both *dâr/dâšt* ‘have/had’ and main verbs in the progressive forms receive subject agreements, while in future tense, as illustrated in (18), the auxiliary *xâh* ‘will’ receives the subject-agreement. What is the status of *dâr* ‘have’ and *dâšt* ‘had’ in the progressive tense? If *dâr* and *dâšt* function as the auxiliary in Persian progressive verbs, why do both auxiliary and the main verb receive agreement? I propose the following hypotheses for the morpho-syntactic constructions of the colloquial progressive tense in Persian.

- 1) These constructions are bi-clausal sentences.
- 2) These constructions are Serial Verbs Constructions.

I will consider these two hypotheses and show that the second one is compatible with Persian phrase structure in Section 4 of Chapter 4 of the dissertation.

3-2. Negation

The semantics of negation needs to be investigated because of its complex and systematic interaction with other operators, especially with modals, quantifiers and tense. In English, negation is located within the TP projection between TP and vP. Pollock (1989) suggests that negation is a functional element which serves as a head. He suggests that negation projects its own phrasal category, and is represented as the head of NegP. Following Pollock (1989), Zanutinni (1991) adopts the idea that preverbal negative markers are X⁰ heads of the functional category NegP, and proposes that the post-verbal adverb-like negatives appear as XP adjuncts.

Haegeman (1995:7) suggests that the position of NegP is parameterized with respect to TP, the representation of tense. Variation among languages with respect to the position of negation is restricted to whether both or either of the two elements of NegP is realized lexically (Haegeman 1995:126-127).

Laka (1994: 4) also proposes that negation is parameterized as to whether it can occur in the TP projection, as in English, or the CP projection as in Basque. In Chapter 4 of the dissertation, I analyze Persian negation semantically and syntactically, and I argue that negative marker *na-* ‘not’ in Persian is located in the head of the NegP. In the second part of this chapter, I show the interaction of negation with different tenses

in Persian. Finally, in Chapter 6, I will discuss the interaction of negation with modality in Persian.

3-3. The Interaction of Tense and Negation

Consider the following sentences.

- 19) qazâ-ro ne-mi-xor-am (Simple present tense)
 food râ not-Dur eat-Prs.Stm- 1stsg.
 ‘I do not eat the food.’
- 20) qazâ-ro na-xord-am. (Simple past tense)
 food-râ not eat-Pst.Stm-1stsg
 ‘I did not eat the food.’
- 21) qazâ-ro na-xâh-am xord. (Future tense)
 food râ not want-1stsg eat
 ‘I will not eat the food.’
- 22) a. *dâr-am qazâ-ro ne-mi-xor-am. (Present progressive)
 have-1stsg. food râ not-Dur eat-Prs.Stm- 1stsg.
 ‘I am not eating the food.’
- b. *na-dâr-am qazâ-ro mi-xor-am.
 not-have-1stsg. food râ Dur eat-Prs.Stm- 1stsg.
 ‘I am not eating the food.’
- 23) a. *dâšt-am qazâ-ro ne-mi-xord-am. (Past progressive)
 had-1stsg. food râ not-Dur eat-Pst.Stm- 1stsg.
 ‘I was not eating the food.’
- b. *na-dâšt-am qazâ-ro mi-xord-am.
 Not-had-1stsg. food râ Dur eat-Pst.Stm-1stsg.
 ‘I was not eating the food.’
- 24) qazâ-ro ne-mi-xord-am (Past imperfective)
 food-râ not-Dur- eat-Pst.Stm-1stsg
 ‘I was not eating the food.’

In (19), (20), and (24) the negative marker *ne-/na-* attaches to the main verb with or without *mi*. The negative marker *na/ne* attaches to the auxiliary *xâh* ‘will’ in (21). In

the case of the progressive forms (22, 23), the negative marker cannot attach to the *dâr/dâšt*, nor can it attach to the main verb: there is no negative of eth progressive form. In fact, the negative form of the present tense—as illustrated in (19) – is used for the negative present progressive tense, and the negative imperfect past tense—as shown in (20)– is used for the past progressive forms. A question of interest is whether semantic or morpho-syntactic reasons underlie the ungrammaticality of (22) and (24).

In the discussion of the syntactic position of the negation in Section 4 of Chapter 4 of this research, I show how negation interacts with other functional heads like T and Asp in Persian syntactic structure. Then I elaborate on negation’s interaction with different modals and I discuss how different positions of negation affect the different interpretation of propositions in Chapter 5.

3-4. Modality

Two main chapters of the dissertation are dedicated to mood and modality. Modality is concerned with the status of the proposition that describes the event. Semantically, modals are interpreted as either epistemic or root readings. Epistemic modals involve a speaker-oriented qualification or modification of the truth of a proposition. Root modals are sometimes called event modals (Palmer 2001:8) and involve the ability, permission or obligation to do some action or bring about some state of affairs.

Morpho-syntactically modals have different behaviors in different languages. In Persian modal concepts are expressed by 1) Verbal modals which are classified into two categories: A) simple verbal modals such as: *bâyad* ‘must,’ *šâyad* ‘may,’ and

tavânsetan/tunestan ‘can,’ and B) Complex verbal modals such as *ehdiyâj dâştan* ‘to need,’ *majbur budan/šodan* ‘to be obliged/become forced,’ *momken-budan* ‘to be possible,’ *lâzem-budan* ‘to be necessary,’ and *ehtemâl/ emkân dâştan* ‘to be possible/likely’. 2) Adverbial modals like *motma’enan* ‘certainly,’ *hatman* ‘certainly,’ *ehtemâlan* ‘probably’.

Semantically, modals are classified into two main groups: 1) Root modals, and 2) Epistemic modals. Root modals involve the will, ability, permission or obligation to perform some actions or bring about some state of affairs. They are called event modals (Palmer 2001:8) and can be divided into two sub-classes: 1) deontic, and 2) dynamic. In deontic modality the conditioning factors are external to the relevant individual. Thus, the deontic modality relates to the obligation or permission emanating from an external source. In dynamic modality the conditioning factors are internal. Thus, the dynamic modality relates to the ability or willingness from the individual concerned. This is illustrated below:

- 25) a. Sârâ *majbur-e* (ke) bištar dars be-xun-e.
 S. obliged-be-3rdsg. (that) more lesson Subj-read-3rdsg.
 ‘Sârâ is obliged to study more.’
- b. Sârâ *majbur-e* (ke) kâr be-kon-e.
 S. obliged-be-3rdsg. (that) work Subj-do-3rdsg.
 ‘Sârâ is obliged to work.’

The root modal *majbur-e* ‘to be obliged’ in (25a) refers to the obligation emanating from the external source, while it refers to the internal obligation in (25b).

Another case where multiple varieties of the root interpretation can be seen is the modal *tunestan* ‘can/be able to.’ This is illustrated in (26).

- 26) a. *Sârâ mi-tun-e dar in emtehân movafaq be-š-e.* (Root/ability)
 S. Dur-can-3rdsg. in this exam success subj-become.3rdsg.
 ‘Sârâ can/is able to pass this exam.’
- b. *Sârâ mi-tun-e tu xune be-mun-e.* (Root/permission)
 S. Dur-can-3rdsg. in home Subj-stay-3rdsg.
 ‘Sârâ can/ is permitted to stay at home.’

Epistemic modals involve a speaker-oriented qualification or modification of the truth of a proposition. Epistemic modalities include possibility and probability, and in some cases they show inferred certainty, which is used to indicate belief that the statement is true. Consider the following epistemic modals.

- 27) *šâyad Sârâ be in mehmuni bi-y-âd.*
 perhaps S. to this party Sub-come-3rdsg.
 ‘Perhaps, Sârâ comes to this party.’
- 28) *motma’enan Sârâ be in mehmuni mi-y-âd.*
 certainly S. to this party Ind-come-3rdsg.
 Literal meaning: ‘For sure, Sârâ comes to this party.’
- 29) *hatman Sârâ be in mehmuni mi-y-âd.*
 certainly S. to this party Ind-come-3rdsg.
 Literal meaning: ‘For sure, Sârâ comes to this party.’
- 30) *ehtemâlan Sârâ be in mehmuni mi-y-âd.*
 Probably S. to this party Ind-come-3rdsg.
 Literal meaning: ‘It is possible that Sârâ comes to the party.’
- 31) *Sârâ momken-e (ke) mariz bâ-š-e.*
 S. possible-be-3rdsg. (that) sick- Subj-be-3rdsg.
 ‘Sârâ may be sick.’
- 32) *ehtemâl dâr-e (ke) Sârâ be in mehmuni bi-y-âd.*
 possible have-3rdsg. (that) S. to this party Sub-come-3rdsg.
 ‘It is possible that Sârâ comes to this party.’

As sentences (25-32) show, the categorization of modals is not restricted to root and epistemic readings in all contexts. I will give a detailed categorization of Persian modals

with respect to the external vs. internal source, possibility, obligation, necessity, certainty and ability in Chapter 2 of the dissertation.

Another noticeable issue in the above data is that from morpho-syntactic point of view, all root modals in Persian occur with subjunctive verbs in their complements while epistemic modals co-occur with both indicative and subjunctive verbs. In Section 3 of Chapter 2 of the dissertation, I address the question of how modality overlaps with mood in Persian grammar.

In Section 4 of Chapter 2, I discuss the event structure of Persian complex modals and I show the interaction of the event structure of the main verb with simple and complex modals.

From the syntactic perspective, I show that there is no one-to-one correspondence between syntactic representations and semantic interpretations of modals in Persian. Modal verbs have been suggested to be raising verbs in many languages (Wurmbrand 1998, 2001). A question that arises there is: is this proposal compatible with topic prominent languages like Persian, which do not have subject-raising constructions? If not, how are Persian verbal modals represented syntactically? This is one of the topics which will be discussed in Chapter 3 of this dissertation.

3-5. The Interaction of Modality and Negation

The interaction of modals as operators with other operators such as negation, in Persian is another topic which is worth investigating carefully. In the following sentences, the negative marker *na-* can be attached to either modal or the main verb. I

address the following question in this part of the dissertation: How does the position of negation affect the interpretation of the sentence? Consider the following sentences:

- 33) a. Sârâ bâyad tu xune na-mun-e. (Root)
 S. must at home not-stay-3rdsg.
 ‘Sârâ needn’t stay at home.’
- b. Sârâ na-bâyad tu xune be-mun-e. (Root)
 S. not-must at home Subj-stay-3rdsg.
 ‘Sârâ mustn’t stay at home.’

In (33a), negative marker *na-* attaches to the main verb, and has narrow scope. In (33b), *na-* attaches to the modal verb and has wide scope over the proposition. How does the scope distinction affect the interpretation of the sentences? This question is addressed in Chapter 5 of the dissertation.

4. Theoretical Framework

My theoretical framework in the syntactic discussion of Persian modals is Chomsky’s Minimalist Program (henceforth MP) (1999, 2001, 2004).

The MP is motivated not only by the search for the explanatory adequacy but also for a certain level of formal simplicity. The formal simplicity shows up in two different ways: First, derivations and representations conform to an ‘economy’ criterion. Second, the theory itself is developing in the direction of minimality: ‘Affect α ’ in place of a variety of distinct earlier transformations (See Laznik 1999:26). In recent version of MP– i.e., Phase Theory–there is multiple Spell-out and multiple transfers, and when the building of certain syntactic constituents is finished, the material is sent to PF and LF. This certain syntactic constituent is called *the phase*. It should be noted that the sent-off material is no longer available for further operations within ‘narrow syntax’ in the

higher phase. Chomsky (2001) suggests that phases are propositional, and there are two strong phases: 1) The lexical phase or v*P (transitive/unergative vP) which includes VP, and 2) The functional phase or CP containing TP (i.e. tensed clauses and control infinitives). The head of the phases (i.e., v and C) may be assigned an EPP feature to trigger movement.

Within MP, any feature of lexical items that is not interpretable at the interface requires elimination/ checking. There are LF uninterpretable inflectional features that enter into agreement relations with interpretable features. Thus the Φ -features of T (Tense) are uninterpretable and agree with the interpretable Φ -features of a nominal that may be local or remote, yielding the surface effect of noun-verb agreement. Therefore, we can conclude that an agreement relation removes the uninterpretable features from the narrow syntax, allowing derivations to converge at LF while remaining intact for the phonological component. Movement (i.e., displacement in Chomsky's term) is implemented by selecting a target and a featurally related category to be moved to a position determined by the target. The target also determines the kind of category that can be moved to this position.

The question of interest is where the positions of modals are in MP? Wurmbrand (1998) assumes two different positions for German modals: one associated with the head of TP, i.e., T° , and one with the head of ModP, i.e., Mod° . In Chapter 3 of this research, I show that Persian root and epistemic complex modals are located in vP and check the operator feature via Agree with the head of ModP (i.e., Mod°) or the head of TP (i.e., T°). Then I show that the defective auxiliary modal *bâyad* 'must' in its

epistemic reading and the epistemic defective auxiliary modal *šâyad* ‘may’ are base-generated in T°. However, the root defective auxiliary modal *bâyad* is base generated in Mod°. Finally, I argue that the structure of Persian modals indicates that there is not one-to-one correspondence between syntactic structure and semantic interpretation of modals.

CHAPTER 2

MOOD AND MODALITY IN PERSIAN: MORPHO-SYNTACTIC AND SEMANTIC VIEW

Introduction

Most previous studies on mood and modality are concerned with their semantic aspects cross-linguistically. However, Persian mood and modality not only interact with each other semantically but also morphologically and syntactically.

In this chapter, I show how modals function semantically and morpho-syntactically in Persian grammar. The chapter is organized as follows: In Section 1, I define modality in general and the morpho-syntactic properties and classifications of Persian modals in particular which is followed by the semantic categorization of Persian modals in Section 2. In Section 3, I present the interaction of modals with mood. In this section, I will show that root modals are only compatible with present subjunctive forms while epistemic modals are compatible with both present and present perfect subjunctive forms. Section 4 is devoted to the event structure of complex modals and the interaction of simple and complex modals with telic and atelic eventive verbs and with stative verbs. Section 5 concludes this chapter.

1. Persian Modals: Morpho-Syntactic Classifications

Modality is concerned with the status of the proposition that describes the event. (Palmer 2001:1). In this section, I focus, first on the morpho-syntactic aspects of Persian modals. Morpho-syntactically, I categorize them into two main categories: 1) Verbal modals, and 2) Adverbial modals. Verbal modals are sub-classified into two groups: A)

Auxiliary modal verbs⁷, and B) Complex modal verbs. Examples of auxiliary modal verbs are *bâyad* ‘must’, *šâyad* ‘may’, and *tunestan* ‘can’⁸. Consider the following examples with two auxiliary modals *bâyad* ‘must’ and *šâyad* ‘may.’

- 1) a. Sârâ *bâyad* tu xune be-mun-e.
S. must in house Subj-stay-3rdsg.
‘Sârâ must stay at home.’
- b. Sârâ *bâyad* tu xune bâ-š-e.
S. must in house Subj-be-3rdsg.
‘Sârâ must be at home.’
- 2) Sârâ *šâyad* be in mehmuni bi-y-âd.
S. may to this party Subj-come-3rdsg.
‘Sârâ may come to this party.’

The modals in (1a) and (1b) (i.e., *bâyad* ‘must/have to’) are auxiliary verbs in Persian, and do not take number and person agreement. The verb *šâyad* in (2), functions like the modal verb *bâyad* ‘must’. Historical evidence shows that both *bâyad* and *šâyad* are the only remaining forms of the defective verbs *bâyestan* ‘must/to have to’ and *šâyestan* ‘may’ which functioned as modals (Lambton 1961, Lazard 1992). Since *bâyad* and *šâyad* do not behave like other verbs one may suggest that they behave similar to adverbial modals like *motma’enan* ‘for sure,’ *ehtemâlan* ‘possibly’. But there are two main problems with this approach. First, *bâyad* in both formal and spoken Persian and *šâyad* in literary language, have negative forms while adverbs do not have a negative form. Consider the following sentences.

- 3) a. Sârâ na *bâyad* be in mehmuni be-r-e.
S. not must to this party Subj-go-3rdsg.
‘Sârâ must not go to the party.’

⁷ Auxiliary verbs, unlike main verbs, appear at the left periphery of the sentence.

⁸ It is worth noting that the formal form of *tunestan* ‘can/be able’ is *tavânestan*.

- b.na-šâyad ke nâm-at nah-and âdami
not-may that name-your put-3rd sg. human being
'....you may not be called human being.'
- c. *Sârâ na motma'enan be in mehmuni mi-r-e.
S. not certainly to this party Ind-go-3rd sg.

Secondly, Persian adverbial modals co-occur with indicative verbs while *bâyad* and *šâyad* appear with subjunctive verbs. This is illustrated in (4).

- 4) a. Sârâ motm'anenan be in mehmuni mi-r-e.
S. certainly to this party Ind-go-3rdsg.
Intended meaning: 'for sure, Sârâ goes to the party.'
- b. Sârâ bâyard be in mehmuni be-r-e.
S. must to this party Subj-go-3rdsg.
'Sârâ must go to the party.'
- c. Sârâ šâyad be in mehmuni be-r-e.
S. may to this party Subj-go-3rdsg.
'Sârâ may go to the party.'

Based on the above discussion, we cannot consider *bâyad* and *šâyad* to be adverbial modals.

Another auxiliary modal is *tunestan* 'may/can.' As we see in (5a) and (5b), this auxiliary modal takes full agreement inflection (i.e., *mi-tun-e* 'Dur-can/is able-3rdsg.'). There are some auxiliaries like *tunestan* 'can, be able to' in Persian which take the agreement inflection. In addition, the auxiliary modal *bâyad* does not have past tense form *tunestan* does: the past tense form of *mi-tun-e* is *mi-tunest* 'could/ was-able-3rdsg.'

- 5) a. Sârâ *mi-tun-e* dar in emtehân movaffaq be-š-e.
S. Dur-can-3rdsg. in this exam success subj-become.3rdsg.
'Sârâ can/is able to pass this exam.'
- b. Sârâ *mi-tun-e* tu xune be-mun-e.
S. Dur-can-3rdsg. in home Subj-stay-3rdsg.
'Sârâ can/ is permitted to stay at home.'

In contrast to auxiliary modals discussed above, Persian complex predicates occur clause finally. They are composed of a nonverbal element (henceforth NV) and a light verb (henceforth LV). NV elements can be nouns, adjectives, adverbs and prepositional phrases (Folli, Harley, Karimi 2005:1356). Modals in the form of complex predicates like other complex predicates in Persian are also formed of a non-verbal (NV) element, and a light verb (LV). Modal verbs which are in the form of complex predicates can be classified into two sub-classes based on whether the NV element is nominal or adjectival.

1) Nominal-NV elements are [*ehiyâj* ‘need’ *dâštan* ‘to have’] = ‘to need’, [*ejâze* ‘permission’ *dâštan* ‘to have’] = ‘to permit/may’, [*ehemâl* ‘possibility’ *dâštan* ‘to have’] = ‘to have possibility,’ [*emkân* ‘probability’ *dâštan* ‘to have’] = ‘to have probability, to be likely’, and [*lâzem* ‘necessary’ *budan* ‘to be’] = ‘to be necessary’.

Consider the following sentences.

- 6) Sârâ *ehiyâj dâr-e* (ke) bištar dars be-xun-e.
S. need have-3rdsg. (that) more lesson Subj-read-3rdsg.
‘Sârâ needs to study more.’
- 7) Sârâ *ejâze dâr-e* (ke) be in mehmuni bi-y-âd.
S. permission has-3rdsg. (that) to this party Subj-come-3rdsg.
‘Sârâ may come to the party.’
- 8) Sârâ *ehemâl dâr-e* (ke) be in mehmuni bi-y-âd.
S. possible have-3rd sg. (that) to this party Sub-come-3rdsg.
‘It is possible that Sârâ will come to the party.’
- 9) Sârâ *emkân dâr-e* (ke) be in mehmuni bi-y-âd.
S. possible have-3rd sg. (that) to this party Sub-come-3rdsg.
‘It is probable/likely that Sârâ will come to the party.’

The modal CPRs in (6) and (7) (i.e., *ehtiyâj dâr-e* ‘to need’, and *ejâze dâr-e* ‘to have permission’) take agreement inflection with their subjects while *ehtemâl dâştan* ‘to have possibility,’ *emkân dâştan* ‘to have probability,’ and *lâzem budan* ‘to be necessary’ are defective: they always take third person singular agreement even with a plural surface subject. This is illustrated in (10).

- 10) a. bačče-hâ *ehtemâl dâr-e* (ke) be in mehmuni bi-y-ân.
 child-pl. possibility have-3rd sg. that to this party Subj-come-3rdpl.
 ‘It is possible that the children will come to the party.’
- b. bačče-hâ *emkân dâr-e* (ke) be in mehmuni bi-y-ân.
 child-pl. probability have-3rd sg. that to this party Subj-come-3rdpl.
 ‘It is probable that the children will come to the party.’
- c. bačče-hâ *lâzem-e* (ke) bištar dars be-xun-an.
 child.pl necessary-be-3rdsg. (that) more lesson Subj-read-3rdpl.
 Literal meaning: ‘It is necessary that children will study more.’
- d. bačče-hâ *ehtiyâj dâr-an* (ke) bištar dars be-xun-an.
 children-pl. need have-3rdpl. (that) more lesson Subj-read-3rdpl.
 ‘Children need to study more.’
- e. bačče-hâ *ejâze dâr-an* (ke) be in mehmuni bi-yâ-n.
 children-pl. permission have-3rdpl. (that) to this party Subj-come-3rdpl.
 ‘Children may come to the party.’

As (10a-c) show, when the surface subject is plural (i.e., *bačče-hâ* ‘child-pl.’), the agreement is defective, appears as third person singular in the modal CPRs *ehtemâl dâştan*, *emkân dâştan*, and *lâzem budan* while when the surface subject is plural in (10d & e), the agreement in the modals CPRs *ehtiyâj dâştan*, and *ejâze dâştan* is full inflecting for third person plural.

2) Adjectival-NV elements are [*majbur* ‘obliged, forced’ *budan* ‘to be’] = ‘to be obliged, have to’, [*majbur* ‘obliged, forced’ *šodan* ‘become’] = ‘to become forced,’ and [*momken* ‘possible’ *budan* ‘to be’] = ‘to be possible’. Consider the following sentences:

- 11) a. *Sârâ majbur-e* (ke) *bištar dars be-xun-e*.
 S. obliged-be-3rdsg. (that) more lesson Subj-read-3rdsg.
 ‘Sârâ is obliged/has to study more.’
- b. *Sârâ majbur-e* (ke) *kâr be-kon-e*.
 S. obliged-be-3rdsg. (that) work Subj-do-3rdsg.
 ‘Sârâ is obliged/has to work.’
- 12) *Sârâ majbur-šod* (ke) *bištar dars be-xun-e*.
 S. obliged-became-3rdsg. (that) more lesson Subj-read-3rdsg.
 ‘Sârâ is forced to study more.’
- 13) *Sârâ momken-e* (ke) *mariz bâ-š-e*.
 S. possible-be-3rdsg. (that) sick- Subj-be-3rdsg.
 ‘Sârâ may be sick.’

Both *majbur-e* ‘is obliged’, and *majbur-šod* ‘became forced’ take agreement inflection, while *momken-e* ‘is possible’ is defective always appearing in the third person singular form even with plural surface subjects. This is illustrated in the following sentences:

- 14) a. *bačče-hâ momken-e* (ke) *mariz bâ-š-an*.
 child.pl possible-be-3rdsg. (that) sick- Subj-be-3rdpl.
 Literal meaning: ‘It is likely/ probable that the children will be sick.’
- b. *bačče-hâ majbur-an* (ke) *kâr be-kon-an*.
 child-pl. obliged-be-3rdpl. (that) work Subj-do-3rdpl.
 ‘Children are obliged/has to work.’
- c. *bačče-hâ majbur-šod-an* (ke) *kâr be-kon-an*.
 child-pl. forced-became-3rdpl. (that) work Subj-do-3rdpl.
 ‘Children are forced to work.’

It is worth noting that all the above complex predicates either with nominal or adjectival NV elements are considered main verbs morpho-syntactically, but semantically they are

modals and express the status of the proposition described by the clause which they subcategorize for.

The second group of Persian modals is adverbial modals, such as *motma'enan* 'certainly', *hatman* 'certainly', *ehtemâlan* 'probably'. Consider the following sentences in which all modals are adverbial:

- 15) *motma'enan* Sârâ be in mehmuni mi-y-âd.
 certainly S. to this party Ind-come-3rdsg.
 Literal meaning: 'For sure, Sârâ comes to this party.'
- 16) *hatman* Sârâ be in mehmuni mi-y-âd.
 certainly S. to this party Ind-come-3rdsg.
 Literal meaning: 'For sure, Sârâ comes to this party.'
- 17) *ehtemâlan* Sârâ be in mehmuni mi-y-âd.
 probably S. to this party Ind-come-3rdsg.
 Literal meaning: 'Probably, Sârâ comes to this party.'

I will review the semantic categorization of Persian modals in the next section.

2. Persian Modals: Semantic View

In this section, first I present an overview of the semantic values of modals in general; then I categorize Persian modals particular based on these values.

2-1. Modals: Semantic View

The semantic content of modals, as Papafragou (1998:11), following Kratzer (1981, 1991) suggests, consists of two components: a logical relation R (basically: entailment or compatibility), and a domain D of propositions. What a modal does is to convey that a certain proposition P bears a certain logical relation R to the set of propositions in some propositional domain D. This is illustrated in (18).

18) R (D, P)

Semantically, modals are interpreted with either epistemic or root readings. Epistemic modals involve a speaker-oriented qualification or modification of the truth of a proposition. Epistemic modalities indicate possibility and probability, and in some cases they show inferred certainty, being used to indicate belief that the statement is true. Root modals are called event modals (Palmer 2001:8) and can be divided into two sub-classes: 1) deontic, and 2) dynamic. Palmer suggests that in deontic modality the conditioning factors are external to the individual denoted by the subject, whereas in dynamic modality they are internal. Thus, deontic modality relates to obligation or permission emanating from an external source, whereas dynamic modality relates to ability or willingness originating from the individual concerned. (p.9) Root modals thus involve the ability, permission or obligation to do some action or bring about some state of affairs. The given description of modals is exemplified in the following sentences.⁹

- | | | |
|--------|--|-----------------------------|
| 19) a. | You must go if you want to catch the flight. | (Root, deontic, obligation) |
| b. | John must be sick. | (epistemic, necessity) |
| c. | Everybody can come in casual dress. | (Root, deontic, permission) |
| d. | Jane can tap-dance. | (Root, dynamic, ability) |
| e. | John may have been in his room. | (epistemic, possibility) |

Based on this characterization, in the next sub-section I provide the semantic description of Persian modals.

2-2. Persian Modals: Semantic Categorization

I begin with the semantic description and categorization of modals with simple modal verbs.

⁹ Van de Auwera and Plungian (1998:80-86) expand Palmer's categorization and present a new classification in terms of external or internal participant. In this classification, the terminology 'participant' is intended to include those cases in which the subject of the sentence is not actually an agent.

2-2-1. Auxiliary Modals

bâyad (must)

- 20) Sârâ bâyad be madrese be-r-e. (root, deontic, obligation)
 S. must to school Subj-go-3rdsg.
 ‘Sârâ must go to school.’
- 21) Sârâ bâyad be madrese rafte bâ-š-e. (epistemic, necessity)
 S. must to school gone Subj-be-3rdsg.
 ‘Sârâ must have gone to school.’

In (20), *Sârâ* as a subject has an obligation to do some action which is ‘going to school’.

Thus, in this sentence the modal *bâyad* ‘must’ has a root, deontic reading because the obligation is emanating from an external source. In (21), the speaker infers from some pieces of evidence that *Sârâ has gone to school*. In this sentence, *bâyad* shows the speaker’s attitude towards the truth of the proposition. Therefore, in this sentence, *bâyad* has an epistemic reading with a necessity interpretation. Based on the above discussion, the modal *bâyad* can be semantically as follows:

22) *bâyad* → [root, deontic, obligation] = (20)

23) *bâyad* → [epistemic, necessity] = (21)

Consider next the modal *tunestan* ‘can /to be able’.

tunestan/tavânestan (can/to be able)

- 24) Sârâ *mi-tun-e* dar in mosâbeqe barande be-š-e. root, dynamic
 S. Dur-can-3rdsg. in this game winner Subj-become.3rdsg.
 ‘Sârâ can/is able to win the game.’
- 25) Sârâ *mi-tun-e* be in mehmuni bi-y-âd. root, deontic
 S. Dur-can-3rdsg. to this party Subj-come-3rdsg.
 ‘Sârâ may/ is permitted to come to the party.’

In (24), *mi-tun-e* ‘can/to be able’ relates to the ability or willingness of the individual concerned and it is a root modal. Since this ability is internal and does not originate from an external source, it is a dynamic rather than a deontic modal. In (25), *mi-tun-e* is a root modal relating to permission, and hence here is a deontic modal¹⁰.

Based on this discussion, I present the following classifications for the modal *tunestan*.¹¹

26) *tunestan* → [root, dynamic, ability] = (24)

27) *tunestan* → [root, deontic, permission] = (25)

šâyad (may)

28) Sârâ *šâyad* be in konferâns be-r-e/ raft-e bâ-š-e.
S. may to this conference Subj-go-3rdsg/ gone-Prt Subj-be-3rdsg.
‘Sârâ may go/may have gone to the conference.’

In (28), *šâyad* shows the attitude of the speaker towards the truth value of the proposition i.e., the possibility of *Sârâ*’s going to the conference. Therefore, it is an epistemic modal. It is worth noting that there are no root readings available for *šâyad*. The semantic properties of *šâyad* are as follows:

29) *šâyad* → [epistemic, possibility] = (28)

Now, consider the following complex modals with a nominal nonverbal element.

¹⁰ If we want to translate internal and external source based on thematic relations, internal source is represented by an experiencer thematic role, while external source is represented by an agent thematic role.

¹¹ Unlike English ‘may,’ *tunestan* has no epistemic reading.

2-2-2. Complex Modals: Nominal NV Element

ejâze dâştan (may/have a permission)

- 30) Sârâ *ejâze dâr-e* (ke) tu xune be-mun-e.
 S. permission have-3rdsg. (that) in home Subj-stay-3rdsg.
 ‘Sârâ may stay at home.’

In (30), *ejâze dâştan* ‘to have permission’ implies the existence of an external permission (i.e., a permitter) and is thus a root modal with deontic reading. This complex modal does not have epistemic reading. The semantic features of *ejâze dâştan* are as follows:

- 31) *ejâze dâştan* → [root, deontic, permission] = (30)

ehtemâl/emkân dâştan (to have a possibility/probability)

- 32) Sârâ *ehtemâl/emkân dâr-e* (ke) be in konferâns bi-y-âd.
 S. possibility have-3rdsg. (that) to this conference Sub-come-3rdsg.
 ‘It is possible/ probable that Sârâ will come to the conference.’

In the above sentence, the speaker shows his attitude towards the truth value of the sentence. Therefore, they are epistemic modals, and they do not have root reading..

- 33) *ehtemâl/emkân dâştan* → [epistemic, possibility] = (32)

ehtiyâj dâştan (need to have)

Persian *ehtiyâj dâştan* ‘to need’, in contrast to English ‘need’ (Terry Langendoen p.c.), refers to an internal obligation. Consider the following examples in English:

- 34) a. John needs to practice. (Internal obligation)
 b. This rock needs to move. (External obligation)

In (34a), *John* is the needee and need originates internally to *John* himself. In (34b), the subject *this rock* is not an appropriate needee. In this case, a needee must be supplied.

Thus, (34b) has the following interpretation:

There needs to be someone or something that makes this rock move.

The need, in this case, originates externally to the implied needee and *the rock* itself.

Now consider the following examples in Persian:

- 35) a. Sârâ *ehdiyâj dâr-e* (ke) bištar dars be-xun-e.
 S. need have-3rdsg. (that) more lesson Subj-read-3rdsg.
 ‘Sârâ needs to study more.’
- b. in xune *ehdiyâj* be ta’mir *dâr-e*.
 this house need to repair have-3rdsg.
 ‘This house needs to be repaired.’

In (35a), *Sârâ* needs to study more because of her internal weakness. In (35b) although *the house needs to be repaired* due to its internal structural defects, but this shows an obligation on somebody to do the repairing. Thus, *ehdiyâj dâštan* like English ‘to need’ is dynamic with both external and internal obligation. This modal does not have deontic and epistemic readings. Therefore, we can classify *ehdiyâj dâštan* in the following way:

36) *ehdiyâj dâštan* → [root, dynamic, need] = (35a, b)

lâzem budan “to be necessary”

- 37) a. Sârâ *lâzem-e* (ke) bištar tamrin be-kon-e.
 S. necessary-be -3rdsg. (that) more practice Subj-do-3rdsg.
 Literal meaning: ‘It is necessary that Sârâ practices more.’
- b. in xune *lâzem-e* ta’mir be-š-e.
 this house necessary-be-3rdsg. repairing Subj-be-3rdsg.
 Literal meaning: ‘It is necessary that this house to be repaired.’

In (37a), *Sârâ* should do more practice because of her internal weakness. In (37b) the needee is *the house* itself and imposes an obligation to some body to do the repairing.

Therefore, *lâzem-e* has a dynamic interpretation similar to *ehdiyâj dâštan* ‘to need’. This

modal does not have deontic reading, and in contrast to English does not have epistemic reading either. This is illustrated in (38).

38) *lâzem budan* → [root, dynamic, need] = (37)

2-2-3. Complex Modals: Adjectival NV Element

Consider the following complex modals with adjectival nonverbal element.

majbur budan/šodan (to be obliged/ to be forced)

- 39) a. *Sârâ majbur-e* (ke) *bištar tamrin be-kon-e*.
 S. obliged-be-3rdsg. (that) more practice Subj-do-3rdsg.
 ‘Sârâ is obliged/has to practice more.’
- b. *Sârâ majbur-e* (ke) *in davâ-ro bo-xor-e*.
 S. obliged-be-3rdsg. (that) this medicine Subj-eat-3rdsg.
 ‘Sârâ is obliged/has to take the medicine.’

As we can see in (39a, b), *majbur-e* ‘is obliged to/has to’ refers to an internal obligation. In (39a) *Sârâ* has some weakness that she can fix by practicing and in (39b) *Sârâ* is sick and needs to take medicine to become healthy. The sentence in (39a) can express external obligation, for example in a situation when her trainer or her parents force *Sârâ* to practice more. Thus (39a) is ambiguous between internal and external obligation.

This modal does not have epistemic reading and we can classify it as follows:

40) *majbur budan* → [root, deontic, obligation] = (39a)
 [root, dynamic, need] = (39a, b)

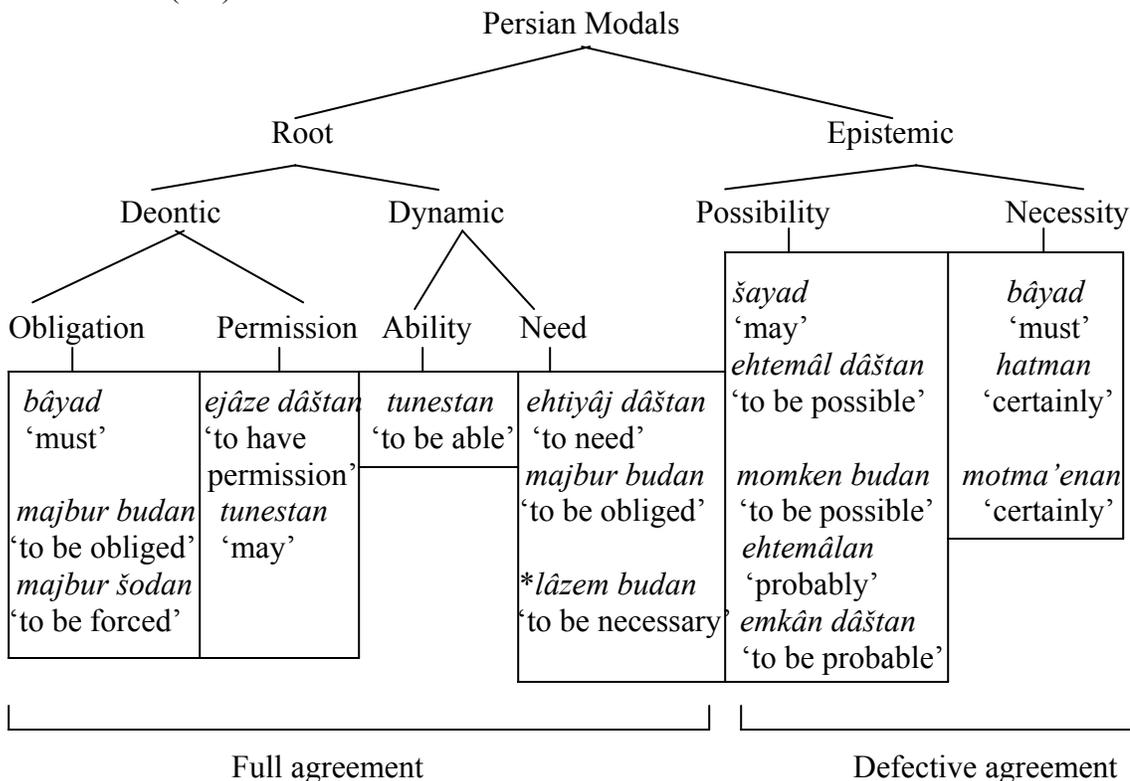
Now consider the following sentence with the modal *majbur šodan* ‘to become forced’.

- 41) *Sârâ majbur-mi-š-e* (ke) *in davâ-ro bo-xor-e*.
 S. forced-Dur-be-3rdsg. (that) this medicine Subj-eat-3rdsg.
 ‘Sârâ is forced to take the medicine.’

The sentence in (41) is also ambiguous, since the obligation may be either external or internal. In the case of the internal obligation reading, these modals function like the

The above semantic categorization of Persian modals is shown in diagram (2-1).

DIAGRAM (2-1)



*= The exceptional case in agreement with the syntactic subject

As I will discuss later, for most cases the morpho-syntactic property of agreeing with the syntactic subject corresponds to the availability of a root reading. The exceptions are *bâyad* 'must' which is defective and has both readings, and *lâzem budan* 'to be necessary' which is dynamic and defective. We will see later that these two modals are exceptional in other respects as well.

2-3. Summary

In the last two sections, first, I have presented a morpho-syntactic categorization of Persian modals in terms of their different morpho-syntactic properties. Then, I have

categorized Persian modals semantically based on their root and epistemic interpretations and their expression of modal concepts such as obligation, necessity, possibility, and ability. In the next two sections, first I discuss the interaction of mood and modality in Persian. Then I show how the event structure of the main verb in the sentence affects the interpretation of modals.

3. The Interaction of Mood and Modality

Mood indicates the realis or irrealis nature of an assertion, and generally takes two forms: 1) Indicative, which refers to real, factual events, and 2) Subjunctive which refers to unreal, hypothesized events. (Palmer 2001:1, De Haan 2004: 12).

Persian has both an indicative and a subjunctive mood, indicated by verbal inflection: 1) Indicative mood is shown by the prefix *mi-*, as in *mi-bar-e* ‘Ind-win-3rdsg.’ 2) Subjunctive mood is shown by the prefix *bo/be/bi-* such as *bo-xor-e* ‘Subj-eat-3rdsg.,’ *be-gir-e* ‘Subj-take-3rdsg.,’ and *bi-yâr-e* ‘Subj-bring-3rdsg.’ (see Lazard 1992, Mahutiyan 1999, among others).

It is worth noting that in contrast to the English subjunctive which is morphologically neutral with respect to the tense and aspect, Persian subjunctive has both a present, and a perfective form. Present subjunctive indicates an action, in the present time or future, which may or may not happen. This is illustrated in (49).

- 49) *šomâ mi-tun-in in kâr-ro be-kon-in.*
 you dur-can-2ndsg. this work-râ Subj.Prs-do-2ndsg.
 ‘You can do this (work).’

The perfective form shows an action which started in the past but the speaker is not certain whether it is completed or not. This is shown in (50).

- 50) *šâyad* *Sârâ* *be* *madrese* *rafte* *bâ-š-e*.
 may S. to school gone-Prt Subj.Prf-be-3rdsg.
 ‘Sârâ may have gone to school.’

In this section, I show how Persian modality interacts with mood affixes in different modal contexts. We start with auxiliary modals. Consider again the sentences in (1), repeated in (51):

- 51) a. *Sârâ bâyard* *tu* *xune* *be-mun-e*. (root, deontic)
 S. must in house Subj.Prst-stay-3rdsg.
 ‘Sârâ must stay at home.’
- b. *Sârâ bâyard* *tu* *xune* *munde* *bâ-š-e*. (epistemic, necessity)
 S. must in house stayed Subj.Prf-be-3rdsg.
 ‘Sârâ must have stayed at home.’

In (51a), *bâyad* ‘must’ is a root-deontic modal auxiliary and the main verb which it modifies is in the present tense, while *bâyad* in (51b) has an epistemic reading and the main verb appears in the present perfect form.

Now, consider the epistemic possibility modal *šâyad* ‘may’ which co-occurs with both present subjunctive and present perfect subjunctive forms of the verb in (52).

- 52) a. *Sârâ šâyad* *be* *in* *konferâns* *bi-yâ-d*.
 S. perhaps/may to this conference Subj.Prst-come-3rdsg.
 ‘Sârâ may come to the conference.’
- b. *Sârâ šâyad* *be* *in* *konferâns* *umade* *bâ-š-e*.
 S. perhaps/may to this party come-Prt Subj.Prf-be-3rdsg.
 ‘Sârâ may have come to the conference.’

So far, the above data show that root readings are compatible with the present subjunctive, while epistemic readings are compatible with both present and present perfect subjunctives. This observation is supported by the inflecting auxiliary modal *tunestan* ‘can/to be able’ in (53).

- 53) a. Sârâ *mi-tun-e* dar in emtehân movafaq be-š-e. (root, dynamic)
 S. Dur-can-3rdsg. in this exam success Subj.Prs-become.3rdsg.
 ‘Sârâ can/is able to pass the exam.’
- b. Sârâ *mi-tun-e* tu xune be-mun-e. (root, deontic, permission)
 S. Dur-can-3rdsg. in home Subj.Prs-stay-3rdsg.
 ‘Sârâ can/ is permitted to stay at home.’
- c. *Sârâ *mi-tun-e* tu xune munde. bâ-š-e (epistemic, possibility)
 S. Dur-can-3rdsg. in home stay-Prt Subj.Prpf-stay-3rdsg.
 ‘Sârâ can/may have stayed at home.’

As we can see in (53) the root modal *tunestan* either in deontic or dynamic readings is compatible only with the present subjunctive, since it has no epistemic reading.

Now consider the following sentences with complex modals.

- 54) a. Sârâ *majbur-šod* (ke) kâr be-kon-e. (root, deontic)
 S. obliged-became-3rdsg. (that) work Subj.Prs-do-3rdsg.
 ‘Sârâ was forced to work.’
- b. *Sârâ *majbur-šod* (ke) kâr karde bâ-š-e.
 S. obliged-became-3rdsg. (that) work done-Prt Subj.Prpf-be-3rdsg.
 ‘Sârâ was forced to work.’
 Literal meaning: ‘Sârâ was forced to have worked.’
- 55) a. Sârâ *majbur-e* (ke) kâr be-kon-e. (root, deontic)
 S. obliged-be-3rdsg. (that) work Subj.Prs-do-3rdsg.
 ‘Sârâ is obliged to work.’
 Literal meaning: ‘Sârâ was obliged to have worked.’
- b. *Sârâ *majbur-e* (ke) kâr karde bâ-š-e.
 S. obliged-be-3rdsg. (that) work done-Prt Subj.Prpf-be-3rdsg.
 ‘Sârâ was obliged to work.’
 Literal meaning: ‘Sârâ is obliged to have worked.’

(54b) and (55b) are ungrammatical since *majbur-e/šod* are root modals and may only appear with present perfect complements, which we have observed above are only possible with epistemic modals. We can see the same observation in (56b) and (57b).

- 56) a. *Sârâ ehtiyâj dâr-e* (ke) *bištar dars be-xun-e.* (root, dynamic)
 S. need have-3rdsg. (that) more lesson Subj.Prs-read-3rdsg.
 ‘Sârâ needs to study more.’
- b. **Sârâ ehtiyâj dâr-e* (ke) *bištar dars xunde bâ-š-e.*
 S. need have-3rdsg. (that) more lesson read-Prt Subj.Prf-be-3rdsg.
 ‘Sârâ needs to have studied more.’
- 57) a. *Sârâ ejâze dâr-e* (ke) *be sinemâ be-r-e.* (root, deontic)
 S. permission-have-3rdsg. (that) to cinema Subj.Prs-go-3rdsg.
 ‘Sârâ may go to the movie.’
- b. **Sârâ ejâze dâr-e* (ke) *be sinemâ rafte bâ-š-e.*
 S. permission-have-3rdsg. (that) to cinema gone-Prt Subj.Prf-be-3rdsg.
 ‘Sârâ had permission to go to the movie.’
 Literal meaning: ‘Sârâ has permission to have gone to the movie.’

In the above sentences, the modals are root modals with both deontic and dynamic readings. When the complement verbs are in present subjunctive forms, the sentences are grammatical, but not when they are in the perfect form. This observation confirms that root modals are compatible with present subjunctive complements, while epistemic modals are compatible with both present and present perfect subjunctive complements. In the case of *lâzem-budan* ‘to be necessary’ which has a root dynamic reading, we expect that it is only compatible with present subjunctive on its complement verb. Our prediction is borne out.

- 58) a. *lâzem-e* (ke) *Sârâ bištar tamrin be-kon-e.*
 necessary-be-3rdsg. (that) S. more practice Subj.Prs-do-3rdsg.
 ‘Literal meaning: ‘It is necessary that Sârâ will practice more.’
- b. **lâzem-e* (ke) *Sârâ bištar tamrin karde- bâ-š-e.*
 necessary-be -3rdsg. (that) S. more practice done-Prt Subj.Prf-be-3rdsg.
 Literal meaning: ‘It is necessary that Sârâ has practiced.’

The other Persian modals *momken budan* ‘to be possible’ and *ehtemâl/ emkân dâštan* ‘to have probability’ are epistemic and are compatible with both present and present perfect subjunctives, as we expect. Consider the following sentences.

- 59) a. *Sârâ momken-e be ta’tilât be-re.*
 S. possible-be-3rd sg. to vacation Subj.Prs-be-3rdsg
 ‘It is possible that Sârâ will go on vacation.’
- b. *Sârâ momken-e be ta’tilât rafte bâ-š-e.*
 S. possible-be-3rd sg. to vacation gone-Prt Subj.Prf-be-3rdsg
 ‘It is possible that Sârâ has gone on vacation.’
- 60) a. *Sârâ ehtemâl/emkân dâr-e be ta’tilât be-r-e.*
 S. possibility/ probability-have-3rd sg. to vacation Subj.Prs-be-3rdsg
 ‘It is possible/ probable that Sârâ may go on vacation.’
- b. *Sârâ ehtemâl/emkân dâr-e be ta’tilât rafte bâ-š-e.*
 S. possibility/ probability-have-3rd sg. to vacation gone-Prt Subj.Prf-be-3rdsg
 ‘It is possible/ probable that Sârâ has gone on vacation.’

In the above sentences, we have epistemic readings. In (59a, 60a), the speaker is not certain that *Sârâ is going on vacation* in the future, while in (59b, 60b), he is doubtful about *Sârâ having gone on vacation* in the past.

With adverbial modals the story is different. Consider the adverbial modals which have epistemic readings.

- 61) *hatman/motma’enan Sârâ be in konferâns mi-y-âd.*
 certainly S. to this conference Ind-come-3rdsg.
 Literal meaning: ‘For sure, Sârâ is coming to the conference.’
- 62) *ehtemâlan Sârâ be in konferâns mi-y-âd.*
 probably S. to this conference Ind-come-3rdsg.
 Literal meaning: ‘Sârâ is probably coming to the conference.’

In (61), the speaker shows his certainty about Sârâ’s coming to the conference and the main verb is indicative which shows the realis nature of the assertion. In (62), however,

the speaker has doubts about it and the verb is in indicative mood instead of being in subjunctive mood. In fact, the subjunctive form of the verb makes the sentence ungrammatical. This is illustrated in (63).

- 63) *ehtemâlan Sârâ be in mehmuni bi-y-âd.
 Probably S. to this party Subj-come-3rdsg.
 Literal meaning: ‘Probably, Sârâ will come to the party.’

The question that arises here is why can’t the main verb of the sentence be in the subjunctive form with adverbial modals? In order to answer this question, consider the following sentences in which we have possibility expressed both in complex modal and adverbial modal forms.

- 64) a. ehtemâl/emkân dêr-e (ke) Sârâ be in konferâns bi-y-âd.
 possibility/probability have-3rdsg. (that) S. to this conference Subj.Prs-come-3rdsg.
 ‘It is possible that Sârâ will come to the conference.’
- b. ehtemâlan Sârâ be in konferâns mi-y-âd.
 probably S. to this conference Ind-come-3rdsg.
 ‘Probably, Sârâ is coming to the conference.’

I suggest that the distinction between these two sentences originates from the different syntactic positions of verbal and adverbial modals. Verbal modals take a complement VP or complement clause. When the modal element is adverbial, however, the main verb is really the main verb of the sentence and it must be in indicative form, since the tense/speech act morphology of the entire sentence must be marked on the verb of the root clause. In other words, in Persian root clauses the choice of mood is determined syntactically rather than semantically. Subjunctive is not a possible mood for the root clause of a sentence.

3-1. Summary

In this section, I have discussed the interaction of mood and modality and I have shown that root modals are compatible with present subjunctive complements while epistemic modals are compatible with both present and present perfect subjunctive complements. I have also shown that in Persian, the choice of mood in the root clause appears to be fully grammatically determined.

We see how the event structure of the main verb affects the interpretation of modals.

4. Persian Modals and Event Structure

Event structure relates to predicate telicity and situation aspect or Aktionsart. Aktionsart refers to event types such as activity, accomplishment, achievement, state and semelfactive. (see Dowty 1986)¹². Consider the following examples with accomplishment and achievement verbs:

- 65) a. John ate an apple. (accomplishment)
 b. John reached the finish line. (achievement)

Both accomplishment and achievement predicates are telic or bounded in the sense of Verkuyl (1993). This means that the event has a (natural, inherent) terminal endpoint. Other classes of events such as activities and states are atelic or unbounded since the event does not have an inherent terminal endpoint. Consider the following sentences with unbounded event structures.

- 66) a. John ate apples. (activity)
 b. John is a doctor. (stative)

¹² For detailed discussion in accomplishment vs. achievement verbs see Dowty (1986, 1979), Hoekstra (1992), and Van Valin (1990).

In this section, I show how event structure interacts with modal interpretations. Let's start with root verbal modals.

4-1. Event Structure and Auxiliary Modal Verbs

Let's consider auxiliary modals.

- 67) a. Sârâ bâyad zabân-e farânse yâd be-gir-e.
 S. must language-EZ French memory Subj.Prs-take-3rdsg.
 'Sârâ must learn French.'
yâd gereftan → telic
bâyad → root, deontic, obligation
- b. #Sârâ bâyad zabân-e farânse be-dun-e.
 S. must language-EZ French Subj.Prs-know-3rdsg.
 'Sârâ must know French.'
dunestan → stative atelic
bâyad → root, deontic, obligation
- c. Sârâ bâyad âvâz be-xun-e.
 S. must song-râ Subj.Prs-read-3rdsg.
 'Sârâ must sing.'
âvâz xundan → eventive atelic

In (67a), *bâyad* 'must' has a root deontic reading, and co-occurs with the eventive telic verb *yâd gereftan* 'learn' while in (67b) the main verb is atelic and stative and the sentence is semantically unacceptable. In (67c) *bâyad* appears in a sentence which has an atelic eventive verb *âvâz xundan* 'sing' and the sentence is grammatical and acceptable. This data show that root deontic modals are compatible with eventive verbs whether telic or atelic.

Now, consider the following sentences in which *bâyad* has epistemic readings.

- 68) a. Sârâ bâyad zabân-e farânse yâd gerefte bâ-š-e.
 S. must language-EZ French memory taken-Prt Subj.Prf-3rdsg.
 'Sârâ must have learned French.'

- b. Sârâ bâyad zabân-e farânse be-dun-e.
S. must language-EZ French Subj-Prs-know
'Sârâ must know the French.'
- c. *Sârâ bâyad zabân-e farânse duneste b â-š-e.
S. must language-Ez French known-Prt Subj-Prf-be-3rdsg.
'Sârâ must have known French.'
- d. Sârâ bâyad in âvâz-o xunde- bâ-š-e.
S. must this song-râ read-Prt Subj.Prf-be-3rdsg.
'Sârâ must have sung.'

The above sentences show that the epistemic modal *bâyad* 'must' is compatible with telic verbs as well as atelic stative and eventive verbs. In other words, *bâyad* in its epistemic reading is compatible with any event type of the main verb. Interestingly, however, there is an interaction between event class and the aspectual marking of the complement verb. In epistemic reading, stative complements are ungrammatical with perfect (e.g., 68c) thus they must occur in the present. Eventive complements, however, are grammatical with perfect and they occur in the perfect form. On the epistemic reading of *bâyad* (e.g., 68) we saw this and we will see this again below with other epistemic modals.

The next sentences with the modal *tunestan* 'can/be able to' support the claim that root modals are compatible with eventive telic and atelic complements, but not with stative complements.

- 69) a. Sârâ mi-tun-e zabân-e farânse yâd be-gir-e.
S. Dur-able-be-3rdsg language-EZ French memory Subj.Pr-s-take-3rdsg.
'Sârâ is able to learn swimming.'

yâd gereftan → *telic*
tunestan → *root, dynamic, ability*

- b. #Sârâ mi-tun-e zabân-e farânse be-dun-e.
 S. Dur-able-be-3rdsg. language-EZ French Subj.Prs-know-3rdsg.
 ‘Sârâ is able to know French.’
dunestan → stative, atelic
tunestan → root, permission
- c. Sârâ mi-tun-e âvâz be-xun-e.
 S. Dur-able-be-3rdsg. song Subj.Prs-read-3rdsg.
 ‘Sârâ is able to sing.’
âvâz xundan → eventive atelic
mitune → root, dynamic, ability
mitune → root, permission

The above sentences show that the modal *tunestan* ‘can/ to be able to’ in its root readings—as illustrated in (69a, c)—is compatible with both telic and eventive atelic complements but is not compatible with stative atelic complements as in (69b).

Now consider the following sentences with the epistemic-possibility modal *šâyad* ‘may.’

- 70) a. Sârâ šâyad zabân-e farânse yâd be-gir-e.
 S. may language-EZ French memory Subj.Prs-take-3rdsg.
 ‘Sârâ may learn French.’
yâd gereftan → telic
šâyad → epistemic, possibility
- b. Sârâ šâyad zabân-e farânse be-dun-e.
 S. may language-EZ French Subj.Prs-know-3rdsg.
 ‘Sârâ may know French.’
dunestan → stative atelic
šâyad → epistemic, possibility
- c. Sârâ šâyad in âvâz-o be-xun-e.
 S. may this song-râ Subj.Prs-read-3rdsg.
 ‘Sârâ may have sung.’
âvâz xundan → eventive atelic
šâyad → epistemic, possibility

As the above sentences show, the epistemic-possibility modal *šâyad* ‘may’ is compatible with both telic and atelic, stative and eventive verbs. Again as with the

epistemic reading of *bâyad* ‘must’ above, we see an interaction between event type and aspectual marking of the complement verb in (71a-c).

- 71) a. Sârâ šâyad zabân-e farânse yâd gerefte bâ-š-e.
 S. may language-EZ French memory taken-Prt-Subj.Prf-be-3rdsg.
 ‘Sârâ may have learned French.’
- b. *Sârâ šâyad zabân-e farânse duneste bâ-š-e.
 S. may language-Ez French known-Prt Subj-Prf-be-3rdsg.
 ‘Sârâ may have known French.’
- c. Sârâ šâyad in âvâz-o xunde- bâ-š-e.
 S. may this song-râ read-Prt Subj.Prf-be-3rdsg.
 ‘Sârâ may have sung.’

As the sentences in (70) and (71) show, the eventive complements of an epistemic modal must occur in the perfect, while stative complements must occur in the present. Therefore, we can say that making a verb perfective is tantamount to making it stative. We discuss this issue in detail in complex modals in the next section.

So far, the data in auxiliary modals show that root modals are compatible with eventive complements, while epistemic modals are compatible with both stative and eventive complements.

Next, we examine the situation of complex predicates and their interaction with the event structure of the complement verb. Since Persian complex modals are main verbs, first I focus on their event structures then I show how they interact with event structure of the complement verbs in the sentence.

4-2. Event Structure of Persian Complex Modals

Folli, Harley and Karimi (2005:1356) (hence forth FHK) argue that although the LV determines the agentivity and the eventiveness of the complex predicate (henceforth

CPr), it fails to completely determine the event structure and the telicity of the whole CPr. Therefore, FHK argue that when the LV allows for event type variation, it is the category of the NV element that determines the event structure of the whole CPr. They summarize the event structures of Persian complex predicates as follows:

TABLE (2-1)

Category of NV	Telic	Atelic
Noun (if not eventive)	*	√
Adj/Adv Particle/PP	√	*

FHK (2005:1356)

FHK note that there are also cases where the event type of the complex predicate is determined by the LV alone, and not the NV element. This is the case of *šodan* ‘become’ which gives rise only to accomplishments and achievements, due to its inherently telic meaning which does not allow for aspectual variation. (p.1356)

In this section, we see how FHK’s proposal works with Persian modal complex predicates. I list them again below:

- 72) a. *majbur budan* ‘to be obliged’
Adj
b. *majbur šodan* ‘to become forced’
Adj
c. *ejâze dâštan* ‘to have permission’
Eventive-N
d. *ehtiyâj dâštan* ‘to need’
Eventive-N
e. *ehtemâl/emkân dâštan* ‘to have possibility/ probability’
Eventive-N
f. *lâzem budan* ‘to be necessary’
Adj

g. *momken budan* 'to be possible'
Adj

In spite of the fact that the NV element in the above modal complex predicates is either an adjective or an eventive noun, the above modal complex predicates are stative and atelic with one exception¹³, because the LV in these complex predicates is either *budan* 'to be' or *dâštan* 'to have,' which are stative verbs, both in their heavy and light verbs. As the examples in (73-75) show, these complex predicates are atelic. Furthermore, they are ungrammatical in the progressive form, which shows that they are states.

- 73) *Sârâ dâr-e *majbur-e* (ke) kâr bo-kon-e.
S. have-3rdsg.obliged-be-3rdsg. (that) work Subj.Prs-do-3rdsg.
*'Sârâ is being obliged to work.'
- 74) *Sârâ dâr-e *ehiyâj dâr-e* (ke) bištar dars be-xun-e.
S. have-3rdsg. need have-3rdsg. (that) more lesson Subj.Prs-read-3rdsg.
*'Sârâ is needing to study more.'
- 75) *Sârâ dâr-e *ehemâl dâr-e* (ke) be in konferâns bi-yâ-d.
S. have -3rdsg possible have-3rdsg.(that) to this conference Subj.Prs-come-3rdsg.
*'Sârâ is being possible to come to the conference.'

The above data show that the LV in the modal verbs in (73-75) (either *budan* 'to be' or *dâštan* 'to have') does determine the eventiveness of the CPr. The data in (76-78) supports this claim too.

- 76) *Sârâ dâr-e *ejâze dâr-e* (ke) be sinemâ be-r-e.
S. have-3rdsg. permission-Dur-has-3rdsg. (that) to cinema Subj.Prs-go-3rdsg.
'Sârâ is having permission to go to the movie.'

¹³The exception is *majbur šodan* 'to become forced' in which *šodan* 'to become' provides a telic meaning to the CPr.

- 77) *dâr-e lâzem-e (ke) Sârâ bištar tamrin be-kon-e.
 have-3rdsg. necessary-be -3rdsg. (that) S. more practice Subj-do-3rdsg.
 Literal meaning: *‘It is being necessary that Sârâ will practice more.’
- 78) *Sârâ dâr-e momken-e (ke) be ta’tilât be-r-e.
 S. have-3rdsg. possible-be-3rdsg. that to vacation Subj.Prs-go-3rdsg.
 *‘Sârâ is being possible to go to the vacation.’

As (76-78) show, since the LV is stative, the modal complex predicates are also stative.

This shows that in the case of stative LVs *budan* ‘to be’ and *dâštan* ‘to have’, the LV determines the event structure and the telicity of the CPr. Therefore, I suggest that in Persian complex modals, the LV is responsible for determining the event structure of the CPr in line with FHK’S proposal.

Next, I turn to the exceptional eventive, telic modal CPr *majbur šodan* ‘to become forced.’ Consider the following sentence with the complex modal *majbur šodan* in progressive form.

- 79) Sârâ dâr-e majbur-mi-š-e (ke) bištar kâr bo-kon-e.
 S. have-3rdsg.obliged-be-3rdsg. (that) more work Subj.Prs-do-3rdsg.
 ‘Sârâ is being forced to work more.’

As the sentence in (79) shows, the complex modal *majbur šodan* is compatible with progressive form, thus it is not stative.

As the discussion of this section shows, all Persian complex modals are stative except the complex modal *majbur šodan*. The complex modal *majbur šodan* ‘to become forced’ is a passive form of the causative complex predicate *majbur kardan* ‘to force’. Since *majbur šodan* is the only telic modal and shows particular behaviour with respect to the eventive structure, thus I suggest that although the complex predicate *majbur šodan* semantically functions like modal verbs but morphosyntactically is not a true

modal and in fact, it is a passive form of the causative complex predicate *majbur kardan*.

I summarize the event structure of Persian complex modals in the following table:

TABLE (2-2)

Modal Complex Predicates	Telic	Atelic
<i>majbur budan</i> ‘to be obliged’	*	√
<i>majbur šodan</i> ‘to become forced’	√	*
<i>ehtiyâj dâštan</i> ‘to need’	*	√
<i>ejâze dâštan</i> ‘to have permission’	*	√
<i>lâzem budan</i> ‘to be necessary’	*	√
<i>momken budan</i> ‘to be possible’	*	√
<i>ehtemâl/emkân dâštan</i> ‘to have possibility/ probability’	*	√

In the next section, we see how these complex modals interact with the event structure of the complement.

4-3. The Interaction of Complex Modals with Event Structure

Consider the following sentences in which I test the interaction of each complex modals with the telic eventive verb *yâd gereftan* ‘to learn’, atelic stative verb *dunestan* ‘to know’, and atelic eventive verb *âvâz xundan* ‘to sing’. I start with root complex modals.

- 80) a. Sârâ majbur-šod zabân-e farânse yâd be-gir-e.
 S. forced- become- 3rdsg. language-EZ French memory Subj.Prs-take-3rdsg.
 ‘Sârâ is forced to learn French.’

yâd gereftan → telic
majbur šod → root, dynamic, obligation

- b. *Sârâ majbur-šod zabân-e farânse be-dun-e.
 S. forced- become-3rdsg language-EZ French Subj.Prs-know-3rdsg.
 ‘Sârâ is forced to know French.’

dunestan → stative atelic
majbur šod → root, dynamic, obligation

- c. Sârâ majbur- šod (ke) âvâz be-xun-e.
 S. obliged- become-3rd sg. that song Subj.Prs-read-3rdsg.
 ‘Sârâ is forced to sing.’

âvâz be-xun-e → *atelic eventive*

- 81) a. *Sârâ majbur-šod zabân-e farânse yâd gerefte bâ-š-e.
 S. forced-become-3rdsg. language-EZ French memory taken-Prt Subj.Prf-be-3rdsg.
 ‘Sârâ was forced to learn French.’

Literal meaning: ‘Sârâ was forced to have learned French.’

- b. *Sârâ majbur-šod zabân-e farânse duneste bâ-š-e.
 S. forced-become-3rdsg language-EZ French known-Prt Subj.Prf-be-3rdsg.
 ‘Sârâ was forced to know French.’

Literal meaning: ‘Sârâ was forced to have known French.’

- c. *Sârâ majbur- šod (ke) âvâz xunde bâ-š-e.
 S. obliged- become-3rd sg. that song sung-Prt Subj.Prf-be-3rdsg.
 ‘Sârâ was forced to sing.’

Literal menaing: ‘Sârâ was forced to have sung.’

As the sentences in (80) and (81) show, the root complex modal *majbur šodan* ‘to become forced’ is compatible with eventive and present complements. Examples (82) and (83) with the root complex modal *ejâze dâštan* ‘to have permission’ also show the same result.

- 82) a. Sârâ ejâze dâr-e zabân-e farânse yâd be-gir-e.
 S. permission have-3rdsg. language-EZ French memory Subj.Prs-take-3rdsg.
 ‘Sârâ has permission to learn French.’

yâd gereftan → *telic*
ejâze dâre → *root, deontic*

- b. #Sârâ ejâze dâr-e zabân-e farânse be-dun-e.
 S. permission have-3rdsg language-EZ French Subj.Prs-know-3rdsg.
 *‘Sârâ has permission to know French.’

dunestan → *stative atelic*
ejâze dâre → *root, deontic*

- c. Sârâ ejâze dâr-e in âvâz-o be-xun-e.
 S. permission-have-3rd sg. this song-râ Subj.Prs-read-3rdsg.
 ‘Sârâ has permission to sing.’

âvâz xundan → *atelic eventive*

- 85) Sârâ ehtiyâj dâr-e (ke) be-raqs-e.
 S. need have-3rdsg. that Subj.Prs-dance-3rdsg.
 ‘Sârâ needs to dance.’

The same interpretation is obtained in the sentences in (86a-d) with eventive atelic verbs such as *qadam zadan* ‘to walk’, *kâr kardan* ‘to work’, *tamrin kardan* ‘to practice’, and *neveštan* ‘to write’. In these cases, *ehtiyâj dâštan* exactly behaves like *majbur budan* ‘to be obliged’ and it is compatible with telic eventive, atelic stative and atelic eventive verbs.

- 86) a. Sârâ ehtiyâj dâr-e (ke) qadam be-zan-e.
 S. need have-3rd sg. that walk Subj.Prs-hit-3rdsg.
 ‘Sârâ needs to walk.’
- b. Sârâ ehtiyâj dâr-e (ke) kâr be-kon-e.
 S. need have-3rd sg. that work Subj.Prs-do-3rdsg.
 ‘Sârâ needs to work.’
- c. Sârâ ehtiyâj dâr-e (ke) tamrin be-kon-e.
 S. need have-3rd sg. that practice Sub.Prs-do-3rdsg.
 ‘Sârâ needs to practice.’
- d. Sârâ ehtiyâj dâr-e (ke) be-nevis-e.
 S. need have-3rd sg. that Subj.Prs-do-3rdsg.
 ‘Sârâ needs to write.’

In (86a), *Sârâ* needs to walk to get some fresh air. Sentences in (86b, d) interpret as *Sârâ* needs to work or to write in order to make her living and she is suffering from a lack of money. Finally, in (86c), *Sârâ* needs to practice to improve her skills.

Furthermore, *ehtiyâj dâštan* ‘to need’ – in contrast to the dynamic ability verb *tunestan* ‘can/to be able’ it is also compatible with atelic stative verbs. This observation shows how these dynamic modals with internal sources of obligation, and ability are different from each other. This is outlined in the following table:

TABLE (2-3)

Dynamic Modals	Telic verbs	Stative atelic verbs	Eventive atelic verbs
1. Ability (tunestan)	√	*	√
2. Need (ehtiyâj dâştan)	√	√	√

As the sentences in (87) show, the root dynamic complex modal *ehtiyâj dâştan* ‘to need’ is not compatible with perfect complements.

- 87) a. *Sârâ ehtiyâj dâr-e zabân-e farânse yâd gerefte bâ-š-e
 S. need have-3rdsg. language-EZ French memory taken-Prt Subj.Prf be-3rdsg.
 ‘Sârâ needs to have learned French.’
 b. *Sârâ ehtiyâj dâr-e zabân-e farânse duneste bâ-š-e.
 S. need have-3rdsg. language-EZ French known-Prt Subj.Prf-be-3rdsg.
 ‘Sârâ needs to know French.’

Literal meaning: ‘Sârâ needs to have known French.’

- c. *Sârâ ehtiyâj dâr-e (ke) âvâz xunde bâ-š-e.
 S. need have-3rdsg. that song read-Prt Subj.Prf be-3rdsg.
 ‘Sârâ needs to sing.’

Literal meaning: ‘Sârâ needs to have sung.’

Consider the following sentences in which the modal is the dynamic modal *lâzem budan* ‘to be necessary’. Since *lâzem budan* ‘to be necessary’ refers to an internal need one expects it to be compatible with both present eventive and stative complements. This prediction is borne out by the data illustrated in (88) and (89).

- 88) a. Sârâ lâzem-e (ke) zabân-e farânse yâd be-gir-e.
 S. necessary-be 3rdsg. that language-EZ French memory Subj.Prs-take-3rdsg.
 Literal meaning: ‘It is necessary that Sârâ will learn French.’

yâd gereftan → *telic*
lâzeme → *root, dynamic, need*

- b. Sârâ lâzem-e (ke) zabân-e farânse be-dun-e.
 S. necessary-be-3rdsg. that language-EZ French Subj.Prs-know-3rdsg.
 Literal meaning: ‘It is necessary that Sârâ will know French.’
dunestan → *stative atelic*
lâzeme → *root, dynamic, need*
- c. Sârâ lâzem-e (ke) âvâz be-xun-e.
 S. necessary-be-3rdsg. that song Subj.Prs-read-3rdsg.
 Literal meaning: ‘It is necessary that Sârâ will sing.’
âvâz xundan → *atelic eventive*
- 89) a. *Sârâ lâzem-e (ke) zabân-e farânse yâd gerefte bâ-š-e.
 S. necessary-be-3rdsg. that language-EZ French memory taken-Prt Subj.Prf-be-3rdsg.
 Literal meaning: *‘It is necessary that Sârâ had learned French.’
- b. *Sârâ lâzem-e (ke) zabân-e farânse duneste bâ-š-e.
 S. necessary-be-3rdsg. that language-EZ French known-Prt Subj.Prf-be-3rdsg.
 Literal meaning: *‘It is necessary that Sârâ had known French.’
- c. *Sârâ lâzem-e (ke) âvâz xunde bâ-š-e.
 S. necessary-be-3rdsg. that song sung-Prt Subj.Prf-be-3rdsg.
 Literal meaning: *‘It is necessary that Sârâ had sung.’

Therefore, *lâzem budan* behaves like *ehitiyây dâştan* ‘to need’ with respect to the interaction with eventive vs. stative and present vs. perfect complements.

Now, we turn to how this observation works with the root modals *majbur budan* ‘to be obliged’ which has both dentic and dynamic readings.

- 90) a. Sârâ majbur-e zabân-e farânse yâd be-gir-e.
 S. obliged-be-3rdsg. language-EZ French memory Subj.Prs-take-3rdsg.
 ‘Sârâ is obliged to learn French.’
yâd gereftan → *telic*
majbure → *root, dynamic*
root, deontic
- b. Sârâ majbur-e zabân-e farânse be-dun-e.
 S. have to -3rdsg language-EZ French Subj.Prs-know-3rdsg.
 ‘Sârâ is obliged to know French.’
dunestan → *stative atelic*
majbure → *root, dynamic*

- c. Sârâ majbur-e (ke) âvâz be-xun-e.
 S. obliged- be-3rd sg. that song Subj.Prs-read-3rdsg.
 ‘Sârâ is obliged to sing.’

âvâz xundan → *atelic eventive*
majbure → *root, deontic*

As the above sentences show, *majbur budan* ‘to be obliged’ in a root dynamic reading is compatible with the telic verb *yâd gereftan* ‘to learn,’ the atelic eventive verb *âvâz xundan* ‘to sing,’ and the stative atelic verb *dunestan* ‘to know;’ while in its root deontic reading is compatible with the eventive verb *yâd gereftan* and *âvâz xundan* ‘to sing’, but not with the stative verb *dunestan* ‘to know’. It is worth noting that the root complex modal *majbur budan* is incompatible with perfect complements. This is shown in the following sentences:

- 91) a. *Sârâ majbur-e zabân-e farânse yâd gerefte bâ-š-e.
 S. obliged-be-3rdsg. language-EZ French memory taken-Prt Subj.Prf-be -3rdsg.
 ‘Sârâ was obliged to learn French.’
 Literal meaning: ‘Sârâ is obliged to have learned French.’
- b. *Sârâ majbur-e zabân-e farânse duneste bâ-š-e.
 S. have to -3rdsg language-EZ French known-Prt Subj-Prf be-3rdsg.
 ‘Sârâ was obliged to know French.’
 Literal meaning: ‘Sârâ is obliged to have known French.’
- c. *Sârâ majbur-e (ke) âvâz xunde bâ-š-e.
 S. obliged- be-3rd sg. that song read-Prt Subj.Prf-be-3rdsg.
 ‘Sârâ was obliged to sing.’
 Literal meaning: ‘Sârâ is obliged to have sung.’

Now, consider the following sentences with complex modals in epistemic readings.

- 92) a. Sârâ momken-e zabân-e farânse yâd be-gir-e.
 S. possible-be-3rdsg. language-EZ French memory Subj.Prs-take-3rdsg.
 ‘It is possible that Sârâ will learn French.’

yâd gereftan → *telic*
momkene → *epistemic, possibility*

- c. Sârâ ehtemâl/emkân dâr-e in âvâz-o be-xun-e.
 S. possible -have-3rd sg. this song-râ Subj.Prs-read-3rdsg.
 ‘It is possible/ probable that Sârâ will sing.’

âvâz xundan → *atelic eventive*

- 95) a. Sârâ ehtemâl/emkân dâre zabân-e farânse yâd gerefte bâ-š-e .
 S. possible have-3rdsg. language-EZ French memory taken-Prt Subj.Prf-be-3rdsg.
 ‘It is possible/ probable that Sârâ had learned French.’
- b. *Sârâ ehtemâl/emkân dâr-e zabân-e farânse duneste bâ-š-e.
 S. possible -have-3rdsg. language-EZ French known-Prt Subj.Prf-be-3rdsg.
 ‘It is possible/ probable that Sârâ had known French.’
- c. Sârâ ehtemâl/emkân dâr-e in âvâz-o xunde bâ-š-e.
 S. possible -have-3rd sg. this song-râ read-Prt Subj.Prf-be-3rdsg.
 ‘It is possible/ probable that Sârâ had sung.’

All Persian complex modals which have the epistemic readings are compatible with both telic and atelic stative/eventive verbs.

5. Conclusion

In this chapter, after categorizing the Persian modals morphosyntactically and semantically I have shown that root modals are compatible with present subjunctive while epistemic modals are compatible with present and perfective subjunctives in Persian. The discussion of the interaction of mood and modality indicates that in Persian, the choice of mood appears to be fully grammatically determined in the root clause.

On event structure, I have shown that all Persian complex modals are atelic except *majbur šodan* ‘to become forced’ which is telic because of the inherently telic LV *šodan*. I have also suggested that atelicity of complex modals is determined by the LV rather than the NV element.

Furthermore, the interaction of modals and event structure has shown that root, deontic modals are compatible with eventive complements, while epistemic modals are compatible with both stative and eventive complements. In the case of root, dynamic modals, the results are somewhat different. The dynamic modal *ehitiyâj dâştan* ‘to need’ is compatible with eventive as well as stative complements, while dynamic modal *tunestan* ‘to be able’–like root, deontic modals– is compatible only with eventive complements.

The dynamic modals *Lâzem budan* ‘to be necessary,’ *ehitiyâj dâştan* ‘to need,’ and the doentic modal *majbur budan* ‘to be obliged’ show a restricted behavior with respect to the telicity of the embedded verb: in particular, when the embedded verb is stative. Root modals often compatible with eventive embedded verbs and incompatible with the stative embedded verbs, while these modals are also compatible with stative modals.

Interestingly, there is an interaction between the event class and the aspectual marking of the complement verb in Persian. Eventive verbs in complement of an epistemic modal must occur in the perfect while statives verbs must occur in the present. Therefore, we can say that making a verb perfective is tantamount to making it stative.

The interaction of mood with modality and modality with the event structure in Persian is outlined in the following table.

TABLE (2-4)

Interaction of Persian Modals with Mood and Event Structure

Modals	R/Ep	Evt.Telic	Evt.aTelic	Stat.aTelic	Prs-Subj	Prf-Subj
bâyad 'must'	R.De	√	√	#	√	#
majbur budan 'to be obliged'	R.De R.Dy	√	√	√	√	#
majbur šodan 'to become forced'	R.De R.Dy	√	√	#	√	#
ejâze dâštan 'to have permission'	R.De	√	√	#	√	#
ehtiyâj dâštan 'to need'	R.Dy	√	√	√	√	#
tunestan 'to be able'	R.Dy ability	√	√	#	√	#
tunestan 'to allow'	R. De	√	√	#	√	#
bâyad 'must'	Ep	√	√	√	√	√
šâyad 'may'	Ep	√	√	√	√	√
momken budan 'to be possible'	EP	√	√	√	√	√
lâzem budan 'to be necessary'	R.Dy need	√	√	√	√	#
ehtemâl dâštan 'to have possibility'	Ep	√	√	√	√	√
emkân dâštan 'to have possibility'	Ep	√	√	√	√	√

R= root
Ep= epistemic
Prs = present

Prf = perfect
Subj= subjunctive
R. De= root-deontic

R.Dy= root-dynamic
Evt=Eventive
Stat=Stative

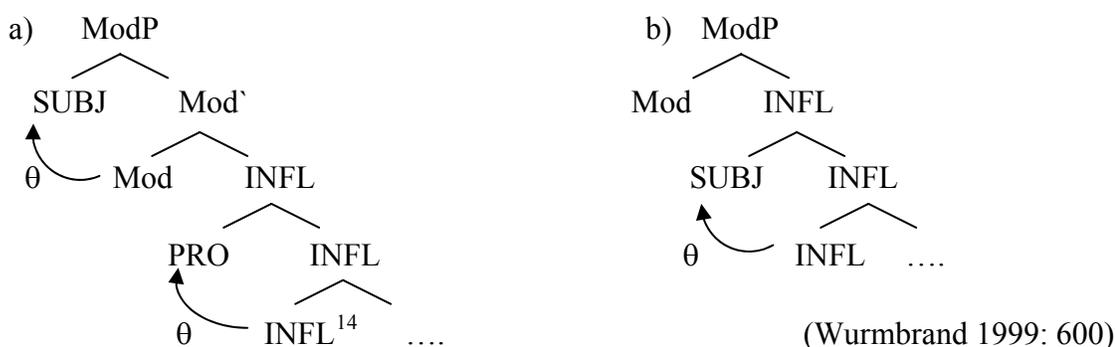
CHAPTER 3

PERSIAN MODALS: SYNTACTIC REPRESENTATION

Introduction

There are some controversies in the literature regarding the syntactic representation of modals. Ross (1969) assumes that root modals are transitive (i.e., assign two theta roles) whereas epistemic modals are intransitive (i.e., assign just one theta role). Roberts (1985), following Zubizarreta (1982), argues that epistemic modals do not assign a subject theta role, but deontic modals assign an adjunct theta role to the surface subject. Based on Theta Criterion, there should be a one-to one correspondence between arguments and theta-roles (Chomsky 1981). Wurmbrand (1999) suggests that according to Ross (1969), and Roberts (1985), root modals are represented by a structure such as (3-1a) since the root modal and the lower verb each assign a subject theta role, while in epistemic modals, as shown in (3-1b), there is only one subject theta role and one argument in the structure. Therefore, root modals are represented by control structures- as illustrated in diagram (3-1a) while epistemic modals are represented by raising structures shown in diagram (3-1b).

DIAGRAM (3-1)



The most recent counter argument to this position is presented by Wurmbrand (1999, 2001) who suggests that all modals—whether root or epistemic—are represented by the raising structure rather than the control structure—that is, no modal assigns an external argument. As the discussion of Chapter 1 of this research has shown, Persian is a topic prominent language, and it does not have an overt raising structure. In this chapter, I focus on the syntactic representation of Persian modals and discuss whether Wurmbrand’s (1999) proposal is compatible with a topic prominent language like Persian.

The chapter is organized as follows: I start the discussion with an overview of Wurmbrand’s (1999) proposal in Section 1. Section 2 shows that there are two types of modals in Persian. Persian complex predicate modals on the root interpretation are represented by control structures. Complex predicate modals with an epistemic interpretation, on the other hand, are represented by a construction similar to raising which I call a ‘pseudo raising’ structure. I also show that among auxiliary modals the verb *tunestan* ‘can/be able’ is represented by a control structure. On the other hand, the

¹⁴ Theta roles are assigned to arguments by the lexical heads (i.e., V, P) not functional heads. A question that arises here is how INFL, which is a functional head can assign theta role in diagram (3-1a, b)?

auxiliary modals *šâyad* ‘may’ and *bâyad* ‘must’ behave like pseudo raising structures in both epistemic and root readings. In Section 3, I address the question, are Persian complex predicate modals represented by control constructions instances of semantic control or syntactic control in Wurmbrand’s (1998, 2001) sense? The discussion of this section shows that Persian complex predicate modals shows inconsistent behavior in this regard. All the complex modals represented by control constructions are syntactic controls except one of them which is a semantic control construction. Wurmbrand (1999) suggests that semantic control verbs are instances of restructuring constructions and the complement of these verbs are VP not CP. In Section 4, I check the only Persian modal which is a semantic control and show that just two auxiliary modals *šâyad* ‘may’ and *bâyad* ‘must’ are instances of functional restructuring. In Section 5, I focus on the structural position of Persian modals based on Minimalist Program (Chomsky 1999, 2001, 2004). In this section, I show that root complex modals are located in vP since they are assigning theta roles to their arguments and check the operator feature via Agree with the head of ModP (i.e., Mod°). Epistemic complex modals are in vP but they check the operator feature with the head of TP (i.e., T°). Then I show that the defective auxiliary modal *bâyad* ‘must’ in its epistemic reading and the epistemic defective auxiliary modal *šâyad* ‘may’ are base-generated in T°. However, the root defective auxiliary modal *bâyad* is base generated in Mod°. I also show that morpho-syntactic behavior of *bâyad* helps to determine its interpretation. Finally, Section 6 concludes this chapter.

1. Modals as Raising Constructions: An Overview

Wurmbrand (1999:600) starts her discussion by arguing for the assumption that the subject in a modal construction starts out as an argument of the lower predicate and that the theta and case properties of the clause are determined by the lower verb rather than the modal. Therefore, all modals are raising structures.

The first argument that Wurmbrand presents in favor of the raising structure comes from expletive subjects in *there*-insertion. As the following example shows, modal constructions are compatible with expletive subjects.

- 1) a. There may be singing but no dancing on my premises.
- b. There can be a party as long as it's not too loud.
- c. There must be a solution to this problem on my desk, tomorrow morning!
- d. There will be no complaints when we go to Aunt Cassandra's!

(Wurmbrand 1999:600, 3a-d)

Wurmbrand explains that since the subject (i.e., *there*) must be base-generated inside the infinitival complement, these examples support the raising analysis for modal constructions.

The second argument that Wurmbrand presents for the raising structure for modals is drawn from the case of subjects in Icelandic modal constructions. The unmarked case for Icelandic subjects is nominative. In Icelandic, there are certain verbs that require a quirky case. For example, the verb *lack* can only occur with an accusative subject and the verb *like* occurs with a dative subject. This is illustrated in (2).

- 2) a. Harald /*Haraldur vanta peninga
 Harold-ACC/ *Harold-NOM lacks money
 ‘Harold tends to lack money.’

- b. Haraldi /*Haraldur líkar vel í Stuttgart
 Harld-DAT / *Harold-NOM like well in Stuttgart
 ‘Harold likes it in Stuttgart.’

(Wurmbrand 1999:601, 4a, b)

Wurmbrand shows, following Sigurðsson (1991), that when verbs which require quirky case– marked subjects appear in a control construction, the case of the matrix subject is determined by the higher verb–i.e., the verb that the overt subject’s theta role is associated with. If the higher verb is not quirky case assigner, the subject is realized with nominative as illustrated in (3a). On the other hand, in raising constructions the subject is only associated with the lower predicate, thus case is determined by the lower verb (3b); if the lower verb is not a quirky case assigner, the subject shows up with nominative.

- 3) a. Harald /*Haraldur vonast til að vanta ekki peninga
 Harold-NOM/ *Harold-ACC hopes for to lack not money
 ‘Harold hopes not to lack money.’

- b. Harald virðist vanta ekki peninga
 Harold-ACC seems lack not money
 ‘Harold seems not to lack money.’

(Wurmbrand 1999:601-2, 5a, c)

Therefore, in Icelandic, if quirky case from the lower verb is restrained, the construction involves raising. On the other hand, if the subject shows the case that the higher verb assigns, the construction involves control. When verbs requiring quirky case marked subjects are embedded under a modal, as illustrated in (4), the subject has to show up with quirky case and nominative is ungrammatical, but if the lower verb does not require a quirky case– marked subject, the subject is in nominative case.

- 4) a. Harald /*Haraldur vill vanta peninga
Harold-ACC/ *Harold-NOM will lack money
'Harold tends to lack money.'
- b. Haraldur /*Haraldur atlar að líka vel í Stuttgart
Harld-DAT / *Harold-NOM intends to like will in Stuttgart
'It looks like Harold will like it in Stuttgart.'

(Wurmbrand 1999:602, 6a, b)

Thráinsson & Vikner (1995) claim the examples in (4) allow only epistemic readings. However, Wurmbrand suggests that this effect is caused by the unnaturalness of a deontic interpretation in the above examples. If the context is a root/deontic context as in (5), the examples are grammatical and again, only quirky case is possible for the subject. Consider the following examples.

- 5) a. Harald /*Haraldur verður að líka hamborgarar
Harold-DAT /* Haraldur-NOM must to like hamburgers
'Harold must like hamburgers'
- b. Umsækjandann verður að vanta peninga
The-applicant-ACC must to lack money
'The applicant must lack money.'

(Wurmbrand 1999:602, 7a, b)

Wurmbrand states: "Assuming that quirky case is not assigned structurally but rather determined idiosyncratically by certain predicates, Icelandic provides supports for the claim that in epistemic as well as root modal construction, the surface subject is associated with the lower verb at some point in the derivation." (p. 602-3)

Another piece of evidence in favor of a raising structure for modals comes from the passive. Wurmbrand proposes that modal constructions display two main properties with respect to the passive: 1) modals cannot be passivized, and 2) the main predicates under modals can be passivized. (P. 603). Her discussion focuses on the passive in

German. In German, transitive and intransitive (unergative) predicates can be passivized however, unaccusative predicates cannot be passivized. This is illustrated in (6).

- 6) a. Er wurde am Tatort gesehen
 He was at-the crime-scene seen
 'He was seen at the crime scene.'
- b. Es wurde getanzelt
 it was danced
 'It was danced.'
- c. *Es wurde (rechtzeitig) angekommen
 it was (on time) arrived
 *'It was arrived.'

(Wurmbrand 1999:603, 9)

Wurmbrand generalizes that passive in German is possible iff the predicate has an underlying external argument. Since raising verbs do not have an (underlying) external argument, it is expected that passive is blocked in raising constructions. This prediction is borne out as illustrated in (7).

- 7) *Es wurde (zu) tanzen geschienen
 it was (to) dance seemed
 *'It was seemed to dance.'

(Wurmbrand 1999:604, 10b)

Wurmbrand suggests that since modals do not project an external argument, they do not allow passive (p. 604). This is illustrated in (8).

- 8) *weil der Kaviar essen gemußt/ gekonnt wurde
 since the caviar eat must-Prt can-Prt was
 *'Since the caviar was musted/canned to eat'
 'Since somebody had to eat/can/ the caviar.'

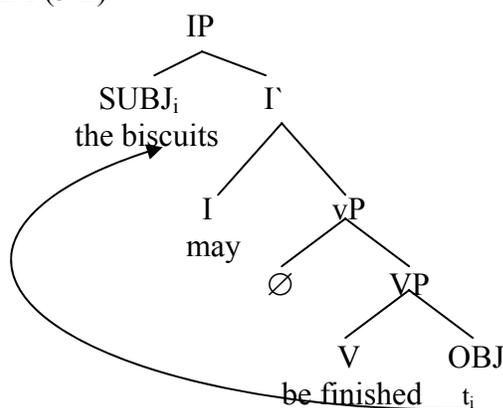
Turning to the second property related to passive in modal constructions, consider the following example from Wurmbrand (1999: p. 604, 11a-c).

- 9) a. The biscuits seem to have been finished by Paul.

- b. *The biscuits tried/decided to be finished by Paul.
- c. The biscuits may be finished by Paul.

(9a) is grammatical since there is no thematic relation between the raising verbs *seem* and the subject. (9b) is ungrammatical because verbs like *try*, *decide*, etc. have a thematic relation with an agentive external argument. Since the external argument is inanimate in (9b), the construction is ungrammatical because inanimates cannot be agents. Wurmbrand's account predicts that there is no thematic relation between the modal and the subject, thus (9c) is grammatical on a root reading. The structure of (9c) is illustrated in diagram (3-2).

DIAGRAM (3-2)



(Wurmbrand 1999:605, 12)

Next, we will see how this proposal works with Persian modal constructions. As I discussed in Chapter 1 of this research, Persian lacks overt, and covert expletives, and syntactic passive. I also showed that Persian does not have true raising constructions (cf. Hashimipour 1989, Karimi 1999, 2005, and Ghomeshi 2001). By keeping these facts in mind, we will test Wurmbrand's proposal with respect to the modal constructions in the next section.

2. Persian Modals: Raising or Control Construction?

In Section 1, we saw that a piece of evidence for considering modals to be raising constructions comes from the fact that *there* –as a subject expletive of the clause– appears in the infinitive complement. As discussed in Chapter 1, since Persian does not have overt and covert expletives this test is not compatible with Persian.

Wurmbrand also suggested that modals do not have passive forms because they do not project an external argument. Testing this suggestion with Persian modals is interesting since Persian passives are instances of complex predicates with a past participle serving as its non-verbal element (cf. Folli, Harley, and Karimi 2005) (henceforth FHK).

As discussed in Chapter 1 FHK propose that certain light verbs are replaced by inchoative or unaccusative light verbs in a complex predicate when a passive interpretation is intended. Consider the following examples.

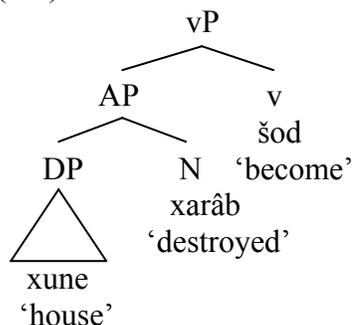
- 10) a. Parviz xuna-ro xarâb kard.
 P. house-râ destroyed did-3rdsg.
 ‘Parviz destroyed the house.’
- b. xune xarâb šod.
 house destroyed became-3rdsg.
 ‘The house was destroyed.’
- c. *xune xarâb karde šod
 house destroyed made became-3rdsg.

(FHK 2005:1387, 68)

The sentence (10a) is agentive with the light verb *kardan* ‘do/make’. This verb is replaced by the inchoative verb *šodan*. The ungrammaticality of the sentence (10c) shows that we have a complex predicate with the non-verbal element as the head of the

PredP. Therefore, the structure of (10b), which is shown in the diagram (3-3) is similar to unaccusative structures.

DIAGRAM (3-3)



(FHK 2005:1396, 75)

FHK's proposal predicts that there is no passive of atelic verbs with nominal non-verbal element. Since all Persian complex predicate modals with nominal non-verbal element are stative and atelic (cf. Chapter 3, Section 4-2) thus they do not have passive forms.¹⁵

¹⁵ This prediction is borne out by the following example.

- i) *Sârâ emkân dâšte šod (ke) kâr be-kon-e.
 S. possibility had-Prt became-3rdsg. (that) work Subj-do-3rdsg.
 *'Sârâ had been possible to work.'

As the above sentence shows, the complex modal *emkân dâstan* 'to have possibility' is stative and does not have the passive form. However, the light verb *dâstan* may be replaced by the eventive light verb *dâdan* 'to give' and makes a morphological passive of this complex predicate modal. Consider the following examples.

- ii) a. *Sârâ emkân dâšte šod (ke) kâr be-kon-e.
 S. possibility had-Prt became-3rdsg. (that) work Subj-do-3rdsg.
 *'Sârâ had been possible to work.'
- b. be Sârâ emkân dâde šod (ke) tu ketâbxune kâr be-kon-e.
 to S. possibility given-Prt became-3rdsg. (that) in library work Subj-do-3rdsg.
 '(to Sârâ) was given the possibility to work at the library.'

The substitution of the verb *dâstan* 'have' with *dâdan* 'to give' in this complex predicate and other complex predicate modals such as *ehtemâl dâstan* 'to have possibility,' and *ejâze dâstan* 'to have permission' is a piece of evidence in favor of Richards & Harley's proposal that there is the verb 'Have' inside the verb 'give'. For the detail discussion, see Harley (2000).

What about Wurmbrand's test of modals with respect to the passive? Is passive under modals possible? Since Persian does not have a syntactic passive form, we expect that the second property of modals is also impossible. However, the occurrence of morphological passive forms under modals shows that Persian morphological passive predicates are compatible with epistemic modals in Persian. Consider the following examples.

- 11) a. biscuit-hâ *bâjad* tamum be-š-e / šode bâ-š-e.
 biscuit-pl. must finish Subj-become-3rdsg.become-Prt Subj-be-3rdsg.
 'The biscuits must be/have been finished.'
 (epistemic, possibility)
- b. biscuit-hâ *šâyad* tamum be-š-e / šode bâ-š-e.
 biscuit-pl. may finish Subj-become-3rdsg become-Prt Subj-be-3rdsg.
 'The biscuits may be/ have been finished.'
 (epistemic, possibility)
- c. biscuit-hâ *momken-e* tamum be-š-e / šode bâ-š-e.
 biscuit-pl. possible-be-3rdsg finish Subj-become-3rdsg.become-Prt Subj-be-3rdsg
 'The biscuits may be /have been finished.'
 (epistemic, possibility)
- d. biscuit-hâ *etemâl/emkân dâr-e* tamum be-š-e / šode bâ-š-e.
 biscuit-pl.probable-have-3rd sg. finish Subj-become-3rdsg.become-Prt Subj-be-3rdsg.
 'It is likely that the biscuits would be/have been finished.'
 (epistemic, possibility)

However, morphologically passive predicates under the modals are not compatible with Persian root modals, as illustrated in (12).

- 12) a. *biscuit-hâ *mi-tun-e* tamum šode bâ-š-e.
 biscuit-pl. Dur-can-3rd pl. finish become-Prt Subj-be-3rdsg.
 *'The biscuits can be finished.'
 (Root, dynamic, ability)

- b. *biscuit-hâ *ehtiyâj dâr-e* tamum šode bâ-š-e.
 biscuit-pl. need-have-3rdpl. finish become-Prt Subj-be-3rdsg.
 ‘The biscuits need to be finished.’
 (Root, dynamic, obligation)
- c. *biscuit-hâ *majbur-e* tamum šode bâ-š-e.
 biscuit-pl. obliged-be-3rdpl. finish become-Prt Subj-be-3rdsg.
 *‘The biscuits are obliged to be finished.’
 (Root, deontic, obligation)
- d. *biscuit-hâ *majbur-šod* tamum šode bâ-š-e.
 biscuit-pl. obliged-became-3rdpl. finish become-Prt Subj-be-3rdsg.
 *‘The biscuits are forced to be finished.’
 (Root, deontic, obligation)
- e. *biscuit-hâ *ejâze dâr-e* tamum šode bâ-š-e.
 biscuit-pl. permission-have-3rdpl. finish become-Prt Subj-be-3rdsg.
 *‘The biscuits have the permission to be finished.’
 (Root, deontic, permission)

By comparing the sentences in (12a-e) with (9b), repeated in (13), we find some similarities between these modals and control verbs in (13).

13) *The biscuits tried/decided to be finished by Paul.

As Wurmbrand (1999:604) notes, the ungrammaticality of this sentence is because both *try* and *decide* have a thematic relation with an agentive external argument. This is also true in Persian root modals in (12a-e). Since the subject is inanimate in (12), the sentences are ill-formed. In other words, root modals in (12a-e) behave like control verbs in Persian. Therefore, in contrast to English (e.g., 9c) and German root modals, Persian root modals are control verbs rather than raising verbs.

The story of the modal *lâzem budan* ‘to be necessary’ is different, and shows some ambiguities. While it is impossible to have passive complex verbs like *tamum šodan* ‘to be finished’ with inanimate surface subject *biscuit-hâ* ‘biscuits’ under *lâzem*

budan–as in (14a)–as illustrated in (14b) when the subject is animate the morphological passive is permitted under this modal. In the following examples passive forms are italicic.

- 14) a. *biscuit-hâ *lâzem-e* tamum šode *bâ-š-e*.
 biscuit-pl. necessary-be-3rdsg finish become-Prt Subj-be-3rdsg.
 ‘It is necessary that the biscuits would be finished.’
- b. Sârâ *lâzem-e* (ke) be in konferâns *ferestâde be-š-e*.
 S. necessary-be-3rdsg. that to this conference sent Subj-become-3rdsg.
 Literal meaning: ‘It is necessary that Sârâ was sent to the conference.’

The core control verbs such as to decide also compatible with the animate subject since the control verbs needs agent. This is shown in (15).

- 15) sar dabir tasmim gereft (ke) in maqâle çâp *be-š-e*.
 editor decision take-Pst-3rdsg. (that) this article publication Subj.Prs-become-3rdsg.
 ‘The editor decided to be published the article.’

The contrast between animate and inanimate subject shows that the root dynamic modal *lâzem budan* ‘to be necessary’ has a selectional restriction with the subject theta role and should be categorized as a control verb like other root modals.

Furthermore, *lâzem budan* along with *momken budan* ‘to be possible’ and *ehtemâl/ emkân dâştan* ‘to have possibility,’ show the same behavior with respect to the subject-verb agreement. Consider the following sentences:

- 16) a. Sârâ *lâzem-e* (ke) be in konferâns *be-r-e*.
 S. necessary-be-3rdsg. that to this conference Subj-go-3rdsg.
 Literal meaning: ‘It is necessary that Sârâ will go to the conference.’
- b. bačče-hâ *lâzem-e* (ke) be in konferâns *be-r-an*.
 child-pl necessary-be-3rdsg. that to this conference Subj-go-3rdpl.
 Literal meaning: ‘It is necessary that children will go to the conference.’

- 17) a. *Sârâ momken-e* (ke) *Sârâ be in konferâns be-r-e.*
 possible-be-3rdsg. that S. to this conference Subj-go-3rdsg.
 ‘It is possible that Sârâ will go to the conference.’
- b. *bačče-hâ momken-e* (ke) *be in konferâns be-r-an.*
 child-pl. possible-be-3rdsg. that to this conference Subj-go-3rdpl.
 ‘It is possible that children will go to the conference.’
- 18) a. *Sârâ ehtemâl/emkân dâr-e* (ke) *be in konferâns be-r-e.*
 S. probable have-3rdsg. that to this conference Subj-go-3rdsg.
 ‘It is likely that Sârâ will go to the conference.’
- b. *bačče-hâ ehtemâl/emkân dâr-e* (ke) *be in konferâns be-r-an.*
 child-pl. probable have-3rdsg. that to this conference Subj-go-3rdpl.
 ‘It is likely that children will go to the conference.’

As the above sentences in (16b-18b) show, the topicalized embedded subject *bačče-hâ* ‘children’ agrees with the lower verb, rather than the matrix modal verbs. Since, in Persian, the agreement is checked within vP against the argument to which a verb assigns its external theta-role (Ghomeshi 2001, Karimi 2005), *Sârâ* and *bačče-hâ* in the above sentences—are the subjects of the embedded clause. This means that the subjects take the theta role and check the agreement on the embedded verb *be-r-e/an* ‘Subj-go-3rdsg./pl.’ Therefore, the subject must be derived from the lower predicates as in the raising constructions.

Based on the above discussion, the modal verbs *momken budan* ‘to be possible,’ and *ehtemâl/ emkân dâštan* ‘to be probable’ behave like raising structures thematically not but not in terms of agreement. Since Persian does not have a true raising construction, I suggest that the modal verbs *momken budan* and *ehtemâl/ emkân dâštan* are instances of ‘pseudo-raising’ constructions. In pseudo-raising constructions, the surface subject originates from the lower clause, checking agreement there, receives its

theta role and case from the lower verb then optionally moves into the matrix clause for discursive reasons (i.e., Topic or Focus)¹⁶.

In the case of *bâyad* ‘must’ and *šâyad* ‘may’, the situation is similar to that of *momken-budan* and *ehtemâl/emkân dâştan*, with some differences. Consider the following sentences.

- 19) a. *in tez bâyard tâ sevvom-e Agust tamum be-š-e.*
 this thesis must till third-Ez August finished Subj-become-3rd sg.
 ‘This thesis must be finished until August 3rd.’
- b. *in tez šâyad tâ sevvom-e Agust tamum be-š-e.*
 this thesis may till third-Ez August finished Subj-become-3rd sg.
 ‘This thesis may be finished until August 3rd.’
- 20) a. *bâyad Sârâ tu xune be-mun-e.* [TP *bâyad* [vP *Sârâ* [PP *tu xune*] *be-mun-e*]]
 must S. in house Subj-stay-3rd sg. ↑
 ‘Sârâ must stay at home.’ └───┬───┘
θ-role
- b. *bâyad Sârâ tu xune bâ-š-e.*
 must S. in house Subj-be-3rd sg.
 ‘Sârâ must be at home.’
- 21) a. *šâyad Sârâ be in mehmuni bi-y-âd.*
 may S. to this party Sub-come-3rd sg.
 ‘Sârâ may come to this party.’
- b. [TP *šâyad* [vP *Sârâ* [VP [PP *be in mehmuni*] *bi-yâ-d*]]] ↑
θ-role

As I noted in Chapter 2, and Section 1-1 of this chapter, *bâyad* and *šâyad* are defective verbs in Modern Persian and since nominative case and the external theta role are checked by the agreement in Persian (Karmi 2005, Ghomeshi 2001), these verbs cannot assign theta role or case to the subject. Thus, the subject takes the theta role from the

¹⁶ It is worth noting that Karimi (2005) consider these verbs as ‘subjectless constructions.’

lower predicates, and optionally moves into the matrix clause for discursive reason like topicalization. Therefore, I suggest that two simple modal verbs *bâyad* and *šâyad* are ‘pseudo raising’ verbs, since they do not assign theta role and case to their surface subjects.

To summarize, in this section, I have shown that, in contrast to Wurmbrand’s (1999) proposal, Persian root modals like *tunestan* ‘can/ be able’, *majbur budan* ‘to be obliged’ *majbur šodan* ‘to become forced’ *ehtijâj dâštan* ‘to need’ and *ejâze dâštan* ‘to have permission’ are all control constructions. This means that these modal verbs assign theta role and case to the surface subject. Persian epistemic modals such as *šâyad* ‘may’, *momken budan* ‘to be possible’, and *ehemâl/emkân dâštan* ‘to have possibility’, are all pseudo-raising constructions. In pseudo raising constructions, the modals are either defective or do not assign case and theta role to the subject. The surface subject originates from the lower clause and the lower verb assigns case and the theta role to the subject. Only the ambiguous modal *bâyad* ‘must’ behaves like Wurmbrand’s (1999) proposal—i.e., in root and epistemic readings is pseudo-raising structure.

In the next section, I consider the nature of the control relation in the subset of modals that we have identified as control modals—i.e., the root modals.

3. Syntactic vs. Semantic Control

Since Persian has both raising and control modals, a question that arises here is, what kind of control constructions are Persian control modals? Wurmbrand (1998:150) categorizes control constructions into two classes: 1) Syntactic control refers to infinitives that involve syntactic PRO-subject and 2) Semantic control refers to control

infinitives without embedded syntactic subject. This categorization is critical to our discussion here since Wurmbrand suggests that semantic control constructions are the instances of restructuring and Ghomeshi (2001: 25-28), following Wurmbrand (1998), proposes that Persian control constructions are instances of restructuring.

In this section, I address the following questions: Are Persian modals syntactic control or semantic control? If they are semantic control, are they instances of restructuring constructions?

First I present an overview of the literature regarding control constructions. I will start with control literature from early generative grammar, GB and the Minimalist Program (henceforth MP). In MP, I will focus on Chomsky and Lasnik's (1993) view on control. Then I will overview Hornstein (1999, 2001, 2003, 2004), Landau (2000, 2004), and Culicover & Jackendoff's (2001) approaches. Finally, I discuss Wurmbrand's (1999) proposal, which is based on syntactic versus semantic control constructions that I have adopted to describe Persian modals in this research. At the end of this section, I show how Wurmbrand's proposal fares in Persian.

3-1. Control Constructions: An Overview

Since the earliest days of generative grammar control and raising constructions have been treated differently. Control was considered to be Equi NP deletion. Rosenbaum (1967) was provided Standard Theory analyses of both raising and control. In the case of control constructions, for Rosenbaum, other than Equi itself no other additional transformations we required. Consider the following example.

- 22) a. The doctor condescended [_S ~~the doctor~~ to examine John].
 b. Burnett persuaded the doctor [_S ~~the doctor~~ to examine Tilman].
 (Davies & Dubinsky 2005: 24, 29 & 30)

In the derivation of (22a, b), the Equi transformation operates to erase the subject NP of the complement clause when it is identical to the subject in the case of *condescend* or the object in the case of *persuade*. Rosenbaum did not distinguish in this rule between object control verbs such as *persuade*, and subject control verbs such as *promise*.

Brame (1976) argues that the infinitival complements in both raising and control structures should be analyzed as VP. Focusing on the Standard Theory analysis of Equi NP Deletion (control), he argues that an analysis that includes Equi NP Deletion transformation requires at least seven stipulations and/or theoretical devices that are unnecessary if the complement is taken to be a VP. He asserts that there is no distinction between control and raising constructions if we assume that these verbs subcategorize in different ways. In the early days of the Extended Standard Theory (EST), Bach (1977) adopted an approach very similar to previous analysis and called it the NO- RULE HYPOTHESIS, on which neither raising nor control is derived transformationally.

Subsequent to the definitive syntactician differentiated between control and raising, analysts in the Extended Standard Theory (EST) proposed that control depends on the binding theory, namely in the binding of an abstract expression PRO. Later, in Government and Binding Theory (henceforth GB), the control sentence in (23a) has the structure (23b).

- 23) a. John decided to go.
 b. John_i decided [PRO_i to go].

As (23b) shows the relation between *John* and the embedded subject position is mediated through the binding of PRO.

In GB, PRO is base-generated and cannot be governed. The distribution of PRO is attributed to binding theory– the PRO Theorem, which is given in (24).

- 24) **PRO Theorem**
PRO is +anaphor (subject to Principle A), and a pronoun (subject to Principle B).

(Chomsky 1986)

Williams (1980) argues that there are two types of control; obligatory control (OC) and non-obligatory control (NOC). Consider the following sentences taken from Hornstein (1999:73).

- 25) a. *It was expected PRO to shave himself.
 b. *John thinks that it was expected PRO to shave himself.
 c. * John's campaign expects PRO to shave himself.
 d. *John_i told Mary_j PRO_{i+j} to wash themselves/each other.

(Hornstein 1999:73, 4)

The sentences in (25a, b) show that OC PRO must have a local antecedent. The sentences in (25c, d) show that the antecedent must c-command PRO and OC PRO can not have split antecedents. NOC does not share these properties with OC PRO. Consider the following sentences.

- 26) a. It was believed that PRO shaving was important.
 b. John_i thinks that it is believed that PRO_i shaving himself is important.
 c. Clinton's_i campaign believes that PRO_i keeping his sex life under control is necessary for electoral success.
 d. John_i told Mary_j [that [[PRO_{i+j} washing themselves/ each other] would fun]].

(Hornstein 1999:73, 6)

The sentences in (26a, b) indicate that NOC PRO does not require an antecedent and if it does have an antecedent, the antecedent does not need to be local. Sentences in (26c, d) show that the antecedent does not need to c-command the NOC PRO and the split antecedents are available in NOC contexts.

Hornstein (1999) started his discussion by highlighting the problems that GB theory and MP deal with respect to the distribution and the interpretation of PRO. He (1999:72) suggests that the GB account is less successful in dealing with PRO's interpretive characteristics. PRO can be replaced by reflexives and pronouns. Consider the following sentences.

- 27) a. *John_i expects himself_i /PRO_i to shave himself.
 b. Clinton's_i campaign believes that his_i //PRO_i keeping his sex life under control is crucial for electoral success.

Hornstein argues that PRO is actually ambiguous – an anaphoric expression in OC contexts and a pronominal in NOC contexts – rather than simultaneously a pronoun and an anaphor, as the PRO Theorem requires. Hornstein notes that this is against the reducing the distribution of PRO to the binding theory via PRO Theorem (p.74). From an MP perspective, however, the PRO Theorem is unappealing, since it relies on government. Thus Chomsky and Lasnik (1993) suggested a Case-theoretic solution for the distribution of PRO and they claim that PRO has 'null' case, which is a case special to PRO. Hornstein (1999) discusses the different problems of this solution. First of all, he suggests that Chomsky & Lasnik's (1993) proposal stipulates the distribution of PRO. Secondly, a null-case PRO fails to block contraction, as illustrated in (28), unlike other Case-marked empty categories (i.e., Wh-trace but not NP-trace).

- 28) a. I want PRO to leave.
 b. I wanna leave.

Another problem that Hornstein (1999:76) highlights is that the Case-theoretic account still requires a rather elaborate PRO module.

Furthermore, there is a problem with Case-theoretic account where PRO is in a position other than [Spec, IP] as illustrated in (29).

- 29) John_i washed/dressed/shaved (PRO_i/ himself_i)
 (Hornstein 1999:77, 16)

As Hornstein explains, (29) is problematic for Case-theoretic account of PRO since Chomsky & Lasnik (1993) suggest that the null Case is only possible from non-finite T.

Hornstein (1999:78) presents an account for the problems of control theories, and proposes that OC structures are also formed by movement. This means that PRO, like NP-trace, is the residue of movement. Hornstein assumes that theta-roles are features on verbs. This treats theta-roles as morphological features (p.78), and a D/NP receives a theta-role by checking a theta-feature of a verbal/predicative phrase that it merges with. He also suggests that there is no upper bound on the number of theta-roles a chain can have. Hornstein (1999:93) claims that the only difference between raising and control structures is that the former involve movement of a D/NP to a non theta-position whereas with the latter a D/NP moves into theta-position. Hornstein starts his discussion with the basic interpretive properties of OC structures, and he says that OC structures require c-commanding local antecedents. He argues that this is what one expects if OC PROs are NP-traces, as in the following structure.

- 30) a. John hopes to leave.

- b. [IP John [VP John [hopes [IP John to [VP John leave]]]]]]
 (Hornstein 1999:79, 19)

Hornstein (1999:79, 80) describes the derivation of the above sentence as follows: First, *John* merges with *leave*, thereby checking the verb's theta-role. *John* then raises to the embedded [Spec, IP] to check the D-feature of IP. This is not a Case-marking position, so the Case of *John* cannot be checked here. *John* raises again to [Spec, VP] of *hope* and checks the external theta feature of the verb. Each time *John* checks a theta-feature of a predicate, it assumes that theta role. Thus *John* has two theta-roles, the *leaver* theta role and the *hoper* theta role. *John* raises one last time to [Spec, IP] of the matrix clause, where it checks the D-feature of the IP and nominative Case. Hornstein suggests that the copy of *John* in the embedded [Spec, IP] corresponds to PRO, and the copy in the matrix [Spec, IP] is the antecedent. Treating obligatory control PRO as the residue of movement also derives the prohibition against split antecedents. Thus, to Hornstein, the following sentences are OC with PRO in the subject position of the embedded clause which is a residue of movement.

- 31) a. John_i expects t_i to win.
 b. John persuaded t_i PRO_i to win.

Landau (2000), on the other hand, presents a lexical semantic and syntactic categorization of different control verbs. According to Landau (2000, 2004), the obligatory versus non-obligatory distinction is syntactic rather than semantic: VP internal infinitives trigger obligatory control while VP external infinitives allow non-obligatory control.

Finally, Culicover & Jackendoff (2001:493) propose that the position of the controller in control constructions is determined—at least—in part by semantic constructions. They argue that there are certain cases of control constructions with two potential controllers in which a semantic account captures these generalizations in a manner impossible for a syntactic account. By presenting different data from control by nominals, control in adjunct clauses, and control by verbs; they show that in many cases the thematic structure of the matrix predicate has a quite precise effect on the choice of controllers. In other words, the lexical semantics of control predicates mostly determine the controller. For example, as illustrated in (32), in the case of the control verb *promise*, in the contrast to Hornstein's claim that this verb has a specific behavior with respect to the Minimal Distance Principle (henceforth MDP), Culicover & Jackendoff (2001:499) suggests that in the case of the verb *promise*, the controller is determined by the thematic properties of the verb selecting the complement.

- 32) a. John promised to shave himself/*oneself.
 b. John_i promised Fred_j to shave himself_j/*_i

It is worth noting that most of the recent works on control constructions assume that the complement of control constructions differs from the complement of raising or ECMs constructions, i.e., the complement of a control verbs is a CP. The only work which suggests that the complement in a control construction may lack a clause boundary and include a very small structure (e.g. VP) is Wurmbrand's (1998) proposal. Wurmbrand (1998), following Rosenbaum (1967), Brame (1976), and Bach (1977), suggests that the complement of some control constructions is not CP, but rather is VP and in these cases, is an instance of the restructuring process. Restructuring

constructions in Wurmbrand's (2003:991) sense involve "infinitive constructions which are characterized by the lack of clause boundedness effects (in languages in which infinitives otherwise show clausal behavior)." This means that restructuring constructions are mono-clausal.

Critical to our discussion is that Ghomeshi (2001) suggests that some core control verbs in Persian are instances of restructuring. Thus I choose Wurmbrand's proposal with respect to German control verbs to test whether Ghomeshi's (2001) proposal with respect to Persian control verbs is on the right track or not. If her proposal is on the right track, we will expect that those Persian complex modals which are control constructions may also be instances of restructuring constructions. Before discussing the restructuring constructions in detail in Section 3, let us see what Wurmbrand proposes regarding the control constructions. Wurmbrand's (1998, 1999, 2001) analysis is based on German data which will be presented in the next sub-section.

3-2. *Wurmbrand's (1998, 1999, 2001) Proposal*

Wurmbrand (1998:151) suggests that whenever a non-overt embedded subject has a variable interpretation; it has to be represented in the syntax. She calls this form of control, *syntactic control*. Syntactic control structures are the traditional control analysis, in which there are two NPs: an overt NP in the surface subject position of the matrix clause and an empty category PRO in the subject position of the embedded clause. When a non-overt embedded subject is obligatorily co-referential with a specific argument in the matrix clause, the infinitive does not involve an overt syntactic subject. Wurmbrand refers to this kind of control as *semantic control*. In contrast to syntactic

control, there is only one NP in semantic control, which is in the surface subject position and there is no overt or covert NP (i.e., PRO) in the subject position of the embedded clause. Wurmbrand presents the structure of control sentences in (33a, b) in the diagram (3-4a, b)¹⁷.

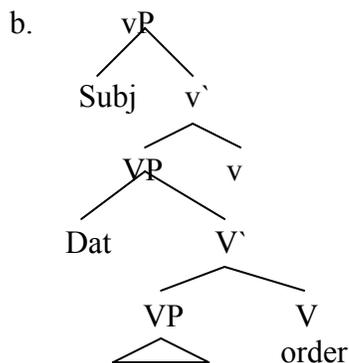
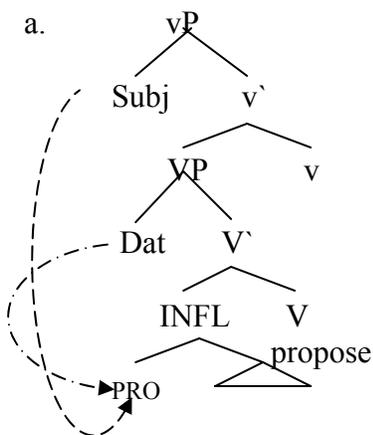
(Syntactic control)

- 33) a. Ich_i habe ihm_j vorgeschlagen [Subj_{i/j} mich zu erschießen]
 I_i have him_j-Dat propose me/myself to shoot
 ‘I proposed him to shoot myself.’
 ‘I proposed to him that I would shoot myself.’

(Semantic control)

- b. Ich_i habe ihm_j befohlen [Subj*_{i/j} mich zu erschießen]
 I_i have him_j-Dat order me/myself to shoot
 ‘I ordered him to shoot me.’
 *‘I ordered him that I should shoot myself.’

DIAGRAM (3-4)



(Wurmbrand 1998:155)

Wurmbrand (1998:155) explains that if a structure is subject to semantic control, there is no syntactic subject in the embedded infinitive and the interpretation of the

¹⁷ The glossary of the examples is based on Wurmbrand's glossary.

understood subject of the infinitive in (3-4b) is determined by the meaning of the matrix verb. Whatever argument binds or saturates the slot in the argument structure of a verb like *order* that is associated with the patient/goal argument, also binds the argument slot associated with the embedded external argument. This means that –as a part of their meaning– verbs like *order* associate the understood external argument of the infinitive with DAT-argument of the matrix clause. What is crucial here is that in a sentence with semantic control there is only one syntactic subject. The association of the embedded predicate with an external argument is the result of a semantic entailment relation imposed by the meaning of the control verb. In other words, the interpretation of the understood subject in embedded clause is subject to a semantic condition which is a part of the meaning of the control verb in the matrix clause.¹⁸

Wurmbrand claims that the basic difference between syntactic and semantic control (i.e., non-obligatory and obligatory control) is that syntactic control allows split antecedent –i.e., the reference of the embedded subject is determined by two arguments conjointly. She presents the test of adverb *together* which requires a plural antecedent in support of her claim.

34) a. Ich_i habe ihm_j vorgeschlagen [Subj_{i+j}¹⁹ gemeinsam zu musizieren]
 I_i have him_j-Dat propose together to make –music
 ‘I proposed to him to make music together.’

b. *Ich_i habe ihm_j befohlen [Subj_{i+j} gemeinsam zu musizieren]
 I_i have him_j-Dat order together to make –music
 ‘I ordered him to make music together.’

(Wurmbrand 1998:165, 19b, c)

¹⁸ For Wurmbrand, all NOC cases will involve syntactic control, since many of them involve adjunct clause not selected for the matrix predicate and they are not susceptible to semantic control.

¹⁹ The index ‘i+j’ shows that the embedded subject is bound by the arguments in the matrix clause.

The most natural interpretation for the sentence (34a) is a reading where the embedded subject refers to the combination of the matrix subject and DAT-argument. Wurmbrand explains that a clear contrast is seen in (34b) when the adverb *together* is embedded in an infinitive selected by a verb which triggers semantic control. The adverb requires a plural antecedent while the understood argument in the infinitive which is associated with the DAT-argument in the matrix clause is singular. The ungrammaticality of (34b) shows that the embedded subject cannot be associated with any argument other than the DAT-argument when it appears under a verb like *order*.

Wurmbrand tests the availability of split antecedent interpretations with single object infinitives (i.e., infinitives that are the internal argument of a verb.) Consider the following sentences from Wurmbrand (1998:168, 23a, b).

- 35) a. Hans hat gesagt daß sein vater beschlossen hat gemeinsam zu musizieren
 ‘John said that his father had decided to make music together.’
- b. *Hans hat gesagt daß sein vater versucht hat gemeinsam zu musizieren
 *‘John said that his father had tried to make music together.’

Wurmbrand (1998) explains that in (35), the plural adverb *gemeinsam* ‘together’ is compatible with the control verb *beschlossen* ‘decided’ while is incompatible with the control verb *versucht* ‘tried.’ This shows that infinitives selected by the verbs like *try* seem to involve semantic control, whereas the subject of an infinitive selected by the verbs like *decide* allows syntactic control.

Wurmbrand also presents a piece of evidence for split antecedents from the reciprocal pronoun *einander* ‘each other’ which has to be bound by a plural subject. Consider the following examples from Wurmbrand (1998:167, 20a, c).

- 36) a. Ich_i habe ihm_j angeboten [SUBJ_{i+j} einander zu helfen]
 I_i have him_j-DAT offered SUBJ_{i+j} each other to help
 ‘I offered him to help each other.’
- b. *Ich_i habe ihm_j befohlen [SUBJ_{i+j} einander zu helfen]
 I_i have him_j-DAT order SUBJ_{i+j} each other to help
 *‘I ordered him to help each other.’

As the above data shows when the verb is a syntactic control verb like *angeboten* ‘offered’ the reciprocal is bound by the dative pronoun and the subject and the sentence is grammatical, while in the case of the semantic control verb *befohlen* ‘ordered’ the binding of the reciprocal *einander* ‘each other’ is impossible, and the sentence is ungrammatical.

It is worth noting that in the case of German modals, Wurmbrand suggests that there is no syntactic category ‘modal’ in German, but there are various morphological and semantic modal properties. Different verbs show different subsets of those properties. She claims that all German modals are raising constructions, and are restructuring contexts (p.238).

In contrast to German modals, Persian root modals display properties of control constructions. Therefore, a question that arises here is, do Persian root modals exhibit syntactic or semantic control in the sense of Wurmbrand (1998, 1999, 2001)? This question is addressed in the next section.

3-3. *Persian Modals: Syntactic or Semantic Control*

Following Wurmbrand (1998, 2001) I use the split antecedent test for distinguishing semantic control verbs from syntactic ones. I start the discussion of this

section by testing the availability of the split antecedent with the reciprocal *hamdige*²⁰ ‘each other’ with respect to Persian control verbs *sa’y kardan* ‘to try’, and *tasmim gereftan* ‘to decide’. Then I show how each Persian modal verb works with respect to the split antecedent test. Consider the following sentences.

- 37) a. *Sârâ_i goft (ke) dust-eš_j s’ay kard-e [(ke) e²¹_{i+j} bâ hamdige dars be-xun-an.]
 S. said (that) friend-her try-did-3rdsg. that with each other lesson Subj-read-3rdpl.
 *‘Sârâ said that her friend has tried to study with each other.’
- b. Sârâ_i goft (ke) dust-eš_j tasmim gereft-e [(ke) e_{i+j} bâ hamdige dars be-xun-an.]
 S. said that friend-her decision-took-3rdsg. that with each other lesson Subj-read-3rdpl.
 ‘Sârâ said that her friend has decided to study with each other.’

As the above data shows, the control verb *s’ay kardan* ‘to try’ is not compatible with the reciprocal pronoun *hamdige* while the control verb *tasmim gereftan* ‘to decide’ is compatible with the reciprocal pronoun and both *Sârâ* and *dusteš* ‘her friend’ are bound by the reciprocal pronouns. This means that the former is a semantic control verb in Wurmbrand’s sense, while the latter is a syntactic control verb.

Now, we see how this test works with Persian control modals. Consider the following sentences.

- 38) a. *Sârâ_i goft (ke) dust-eš_j majbur-e [(ke) e_{i+j} bâ hamdige dars be-xun-an.]
 S. said that friend-her obliged-be-3rdsg. that with each other lesson Subj-read-3rdpl.
 ‘Sârâ said that her friend is obliged to study with each other.’
- b. Sârâ_i goft (ke) dust-eš_j majbur-šod-e [(ke) e_{i+j} bâ hamdige dars be-xun-an.]
 S. said that friend-her obliged-become-3rdsg. that with each other lesson Subj-read-3rdpl.
 ‘Sârâ said that her friend is forced to study with each other.’

²⁰ The adverb *bâham* ‘together’ and the reciprocal *bâ hamdige/hamdige* ‘each other’ are used interchangeably in Persian. Therefore, I only use the reciprocal *hamdige* in the examples.

²¹ ‘e’ means empty category PRO in the case of the syntactic control or nothing in the case of semantic control in subject position of the embedded clause.

As the above data show, split antecedent is not compatible with the root modal *majbur budan* ‘to be obliged’ while it is compatible with *majbur šodan* ‘to become forced’²². In (38a), the reciprocal pronoun *hamdige* ‘each other’ is bound by *Sârâ* and the *dusteš* ‘her friend’, and the sentence is ungrammatical, while in (38b), the reciprocal *hamdige* is bound by both *dusteš* and *Sârâ* and the sentence is grammatical. This observation shows that *majbur budan* is a semantic control verb, and *majbur šodan* is a syntactic control verb since it is compatible with the reciprocal pronoun *hamdige*.

This observation provides a piece of supporting evidence for Folli, Harley, and Karimi’s (henceforth FHK, 2005) proposal regarding the structure of Persian complex predicate. FHK propose that in the case of eventive light verbs like *kardan* ‘to do’ and inherently telic light verbs like *šodan* ‘to become’, the non-verbal element is responsible for the telicity/atelicity of the compound verb, while in the case of stative verbs such as *budan* ‘to be’ and *dâštan* ‘to have’ the light verb is responsible for the entire event structure of the compound verb.²³

Back to the availability of split antecedents with other modals, consider the data of modals *ehdiyâj dâštan* ‘to need’, and *ejâze dâštan* ‘to have permission’, which show an interesting property.

²² As I noted in chapter 2, *majbur šodan* ‘to become forced’ is not a real modal but it is a passive form of the causative complex predicate *majbur kardan* ‘to force’.

²³ It is worth noting that the split antecedent test shows that causative complex predicate *majbur kardan* ‘to force’ is an instance of the syntactic control. Consider the following sentence.

i) *Sârâ*_i goft (ke) modir dust-eš_j-o majbur-kard-e [(ke) PRO_{i+j} bâ hamdige dars be-xun-an.]
S. said that principal friend-her-Acc obliged-did-3rdsg. that with each other lesson Subj-read-3rdpl.
‘Sârâ said that the principal has forced her friend to study with each other.’

As the above data shows, the causative complex predicate *majbur kardan* ‘to force’ is compatible with the reciprocal pronoun *hamdige* ‘each other.’

39) Sârâ_i goft (ke) dust-eš_j ejâze dâr-e [(ke) e_{i+j} bâ hamdige dars be-xun-an.]
 S.said that friend-her permission-has-3rdsg.that with eachother lessonSubj-read-3rdpl.
 ‘Sârâ said that her friend has permission to study with each other.’

40) Sârâ_i goft (ke) dust-eš_j ehtiyâj dâr-e [(ke) e_{i+j} bâ hamdige dars be-xun-an.]
 S. said that friend-her need-has-3rd sg. that with each other lesson Subj-read-3rdpl.
 Literal meaning: ‘Sârâ said that her friend needs to study with each other.’

As (39) and (40) show the modals in the above sentences all exhibit syntactic control, since they allow a split antecedent with respect to the reciprocal pronoun *hamdige* ‘each other’.

Now, consider the root dynamic modal *lâzem budan* ‘to be necessary,’ which behaves like control verbs thematically but according to the agreement is similar to pseudo-raising constructions.

41)*Sârâ_i goft (ke) dust-eš_j lâzem-e [(ke) e_{i+j} bâ hamdige dars be-xun-an.]
 S. said that friend-her necessary-be-3rdsg. that with eachother lesson Subj-read-3rdpl.
 Literal meaning: ‘Sârâ said that her friend is necessary to study with each other.’

As (41) shows, the dynamic root modal *lâzem budan* is not compatible with the reciprocal *hamdige* ‘each other’. Thus it is a semantic control.

So far we have seen that all root modals—whether deontic or dynamic— are compatible with split antecedent test, except *majbur budan* ‘to be obliged,’ and *lâzem budan* ‘to be necessary.’ Therefore, all root modals are instances of syntactic control except *majbur budan* and *lâzem budan*, which are instances of semantic control verbs. Therefore, the dynamic root modal *lâzem budan* and the modal *majbur budan*, which is ambiguous with respect to root or epistemic readings, behave like epistemic modals with respect to the split antecedent test. Nevertheless they are not pseudo-raising verbs.

Now, we will see how the split antecedent test works with Persian auxiliary modals.

Consider the only auxiliary control modal, i.e., *tunestan* ‘can/be able.

Permission

- 42) Sârâ_i goft (ke) dust-eš_j mi-tun-e [(ke) e_{i+j} bâ hamdige dars be-xun-an.]
 S. said that friend-her Dur-can-3rdsg.that with eachother lesson Subj-read-3rdpl.
 Literal meaning: ‘Sârâ said that her friend may study with each other.’

Ability

- 43)*Sârâ_i goft (ke) dust-eš_j mi-tun-e [(ke) e_{i+j} bâ hamdige dars be-xun-an.]
 S. said (that) friend-her Dur-be able-3rdsg.that with eachother lesson Subj-read-3rdpl.
 ‘Sârâ said that her friend can/is able to study with each other.’

The verb *tunestan* in its permission meaning is compatible with split antecedent test, but a split antecedent is incompatible with the root, ability reading. This observation shows that *tunestan* in permission reading is a syntactic control verb while in ability reading is a semantic control verb²⁴. Therefore, the two different readings of the verb *tunestan* correlate with two different syntactic structures-i.e., syntactic versus semantic control structures. The structure of sentences in (42) and (43) is illustrated as follows:

²⁴ The discussion presented here regarding the modal verb *tunestan* ‘can/ to be able’ is a piece of evidence supporting Ghomeshi’s analysis, which considers this verb as a control verb with restructuring construction. But see section (3-2) for critical analysis of Ghomeshi’s proposal. As we will see in section (3-1), Wurmbrand (1998) proposes that only semantic control verbs are instances of restructuring constructions, and *tunestan* -in this sense- is a semantic control verb.

DIAGRAM (3-5)

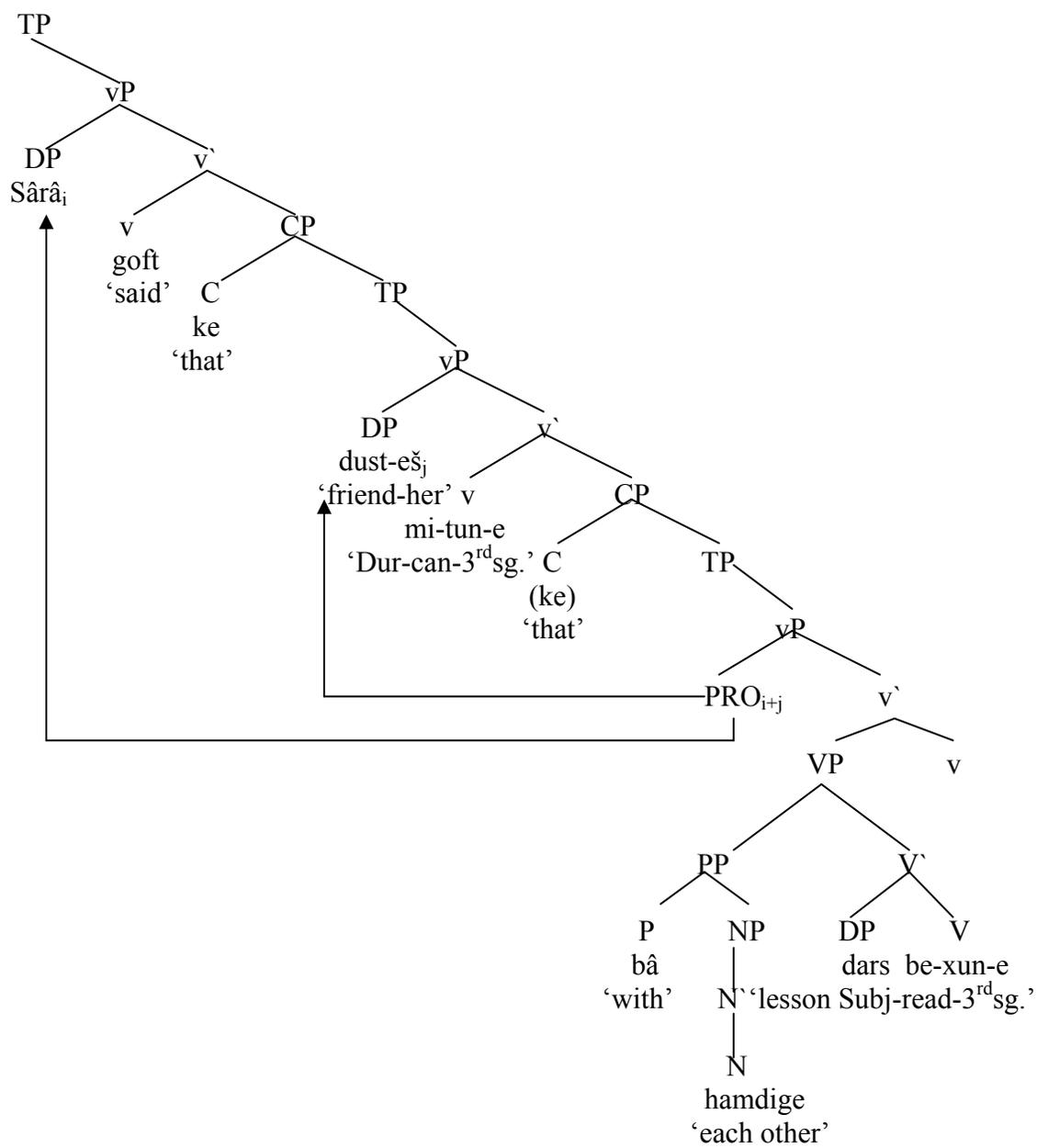
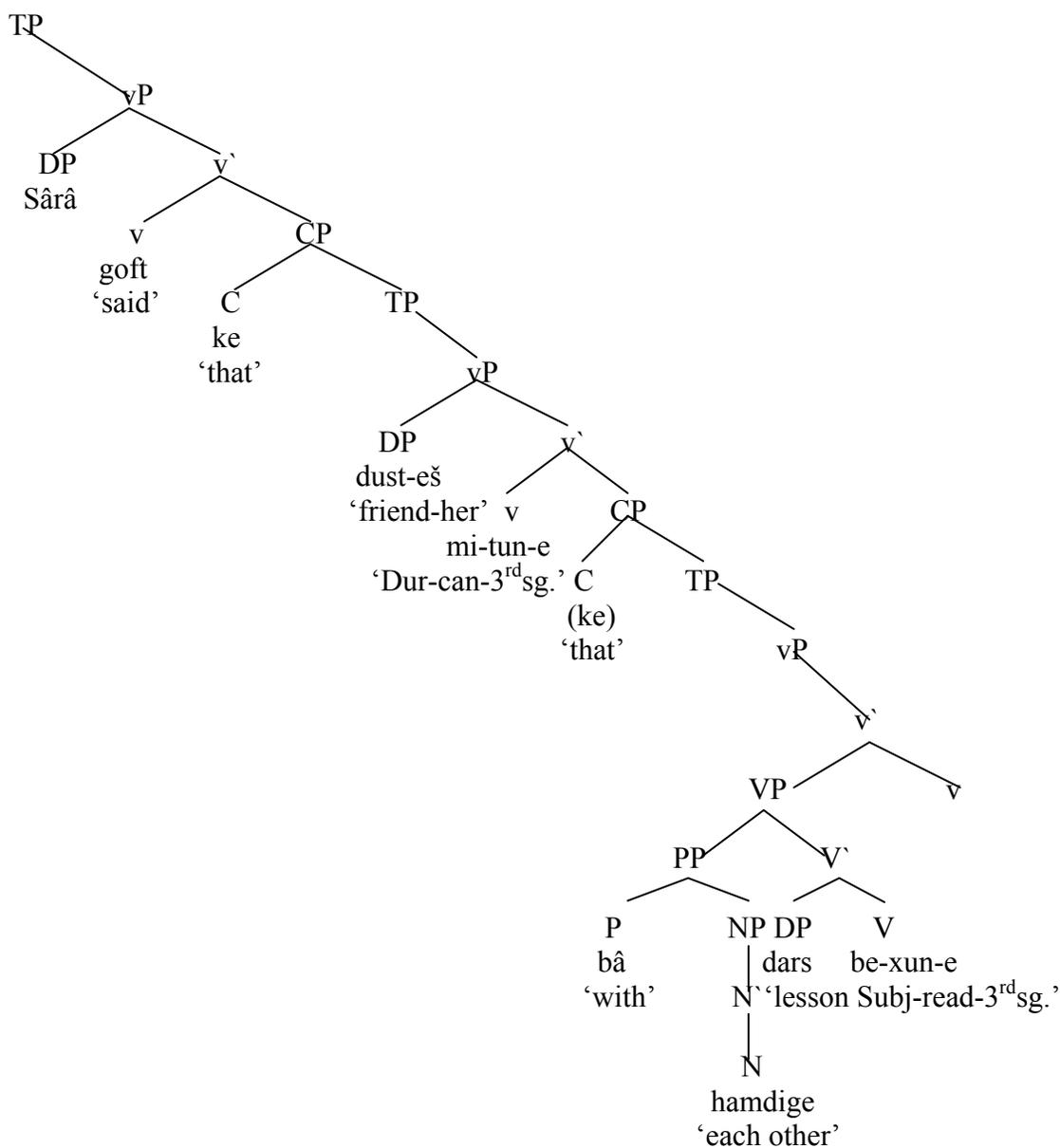


DIAGRAM (3-6)



As we see in diagram (3-6), since there is no subject in the embedded clause at the Spec-vP, thus the reciprocal pronoun *hamdige* 'each other' cannot be bound and the sentence is ungrammatical.

I classify Persian modals based on the semantic and syntactic control in Table (3-1).

TABLE (3-1)

Modals	Deontic Root	Dynamic Root	Syntactic Control	Semantic Control
1.majbur budan 'to be obliged'	√	√	*	√
2.majbur šodan 'to become forced'	√	√	√	*
3.ehtiyâj dâštan 'to need'	*	√	√	*
4. lâzem budan 'to be necessary'	*	√	*	√
5.ejâze dâštan 'to have permission'	√	*	√	*
6.tunestan 'may' (permission)	√	*	√	*
7.tunestan 'can/be able '	*	√	*	√

As I noted before, Wurmbbrand (1998:151) suggests that constructions involving semantic control are restructuring contexts. A question of interest is what is a restructuring context? How are restructuring constructions compatible with Persian control modals, which show inconsistent behavior with respect to syntactic and semantic control structures? I address these questions in the next section.

4. Restructuring

In this section, first, I give a brief introduction to restructuring constructions then I show how this proposal is compatible with Persian control modals.

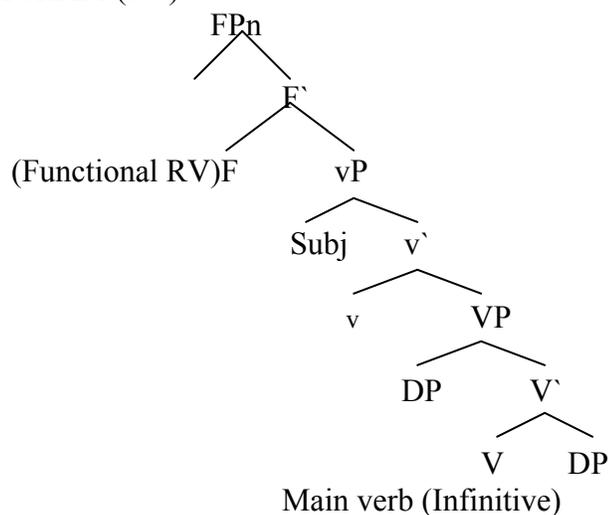
As I noted at the end of the Section 2-1, restructuring constructions lack clause boundedness effect and this means that restructuring constructions are mono-clausal.

Wurmbbrand (2001:995-998) also presents other properties for restructuring constructions as follows:

- 1) Since restructuring constructions are mono-clausal whenever a complementizer or *wh*-element is present restructuring will be blocked.
- 2) Restructuring, whether lexical or functional, is also restricted to infinitival complements that lack tense marking and independent tense interpretation.

Mono-clausal approaches are instantiated in two ways: 1) Functional restructuring in which a restructuring verb is a type of auxiliary or a functional head which combines with the restructured infinitives, i.e., the restructured infinitive is the main predicate of the clause. Functional restructuring is illustrated as follows:

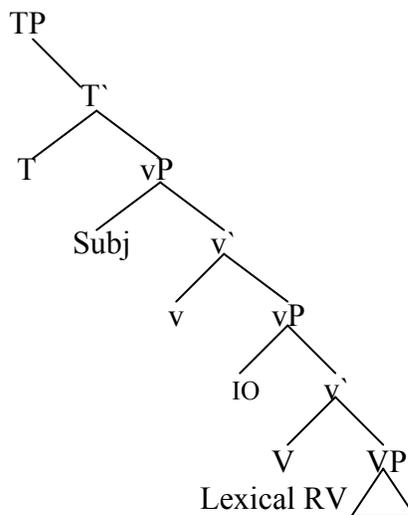
DIAGRAM (3-7)



(Wurmbrand 2001:992)

2) Lexical restructuring in which the restructured infinitive is a very small (e.g., VP) complement. In these cases, the restructuring verb is a full lexical verb. The structure of a lexically restructured clause is illustrated in diagram (3-8).

DIAGRAM (3-8)



(Wurmbrand 2001:992)

Cinque (2001) presents the following distinctions between the functional and lexical restructuring:

- Functional restructurings do not assign theta-roles to arguments while lexical restructurings establish theta relations with arguments.
- Functional restructurings are subject to rigid ordering and co-occurrence restrictions while lexical restructurings are not per se subject to syntactic ordering and co-occurrence restrictions.

Based on the above properties, can we say that Persian modals are instances of restructuring constructions? Further, we can ask if they are restructuring, are they lexical or functional? The answer to this question is the topic of our discussion in the next section.

4-1. Persian Control Verbs: Restructuring or Non-Restructuring

Ghameshi (2001:22-28) suggests that Persian control verbs are instances of restructuring constructions. She gives some evidence from scrambling and *wh*-elements

in core control verbs such as *tunestan* ‘can/be able to’, *sa’y kardan* ‘to try’ and *xâstan* ‘to want’. Ghomeshi suggests that scrambling out of the embedded clause of control verbs (e.g. 44a) is allowed since control verbs lack a clause boundary CP while scrambling out of the embedded clause of non-control verbs (e.g. 44b) results in marginal sentences since the embedded clause of a non-control verb is a CP²⁵.

- 44) a. Bižan [ketâb-o]_{SCR}²⁶ s’ay kard (ke) [t_{SCR} be-xun-e].
 B. book-râ try-do-3rdsg. (that) Subj-read-3rdsg.
 ‘Bižan tried to read the book.’
- b. ## Bižan [ketâb-o]_{SCR} mi-dun-e (ke) [t_{SCR} be-xun-e].
 B. book-râ Dur-know-3rdsg. (that) Subj-read-3rdsg.
 ‘Bižan knows that he will read the book.’

Ghomeshi (2001:23)

Ghomeshi’s suggestion with respect to scrambling out of the embedded clause of non-control verbs and control verbs does not work with all Persian data. For example, the verb *fekr kardan* ‘to think’ is a non-control verb, but scrambling out of the embedded clause of this verb results in a grammatical sentence. This is illustrated in (44).

- 45) a. Bižan fekr mi-kon-e (ke) [in kitâb-o be-xun-e].
 B. thought Dur-do-3rd sg. that this book-râ Subj-read-3rdsg.
 ‘Bižan thinks that he will read the book.’
- b. Bižan [in ketâb-o]_{SCR} fekr mi-kon-e (ke) [t_{SCR} be-xun-e].
 B. this book-râ Dur-know-3rdsg. (that) Subj-read-3rdsg.
 ‘Bižan thinks that he will read the book.’

Ghomeshi (2001:24) also suggests that the scrambling of the *wh*-object *čī* ‘what’ produce a negligible effect on meaning in control construction, while scrambling of the

²⁵ In Persian, the embedded complements of control and non-control verbs are subjunctive rather than infinitive.

²⁶ SCR is the abbreviation of scrambling in Ghomeshi’s (2001) examples.

wh-object in non-control construction results in ungrammaticality of the sentence as illustrated in the following sentences.

- 46) a. Bižan [či] say kard (ke) [či be-xun-e]?
 B. what try-do-3rdsg. (that) [what Subj-read-3rdsg.
 ‘What did Bižan try to read.’
- b. *Bižan [či]_{SCR} mi-dun-e (ke) [t_{SCR} be-xun-e]?
 B. what Dur-know-3rdsg. (that) Subj-read-3rdsg.
 ‘Bižan knows that he will read the book.’

Ghomeshi (2001:24-25)

There are some problems with Ghomeshi’s analysis with respect to the scrambling of *wh*-object. First of all, as Karimi& Taleghani (2003) (henceforth KT) show that *či* ‘what’ does not have to move into the matrix clause but when it moves, it moves into the Spec-FocP and has a contrastive interpretation. In this case, it must be in specific form and followed by specific marker *râ/ro*. Therefore, the sentence in (46a) should be as follows:

- 47) Bižan *či-ro* say kard (ke)[t_{SCR} be-xun-e]?
 B. what try-do-3rdsg. (that) Subj-read-3rdsg.
 ‘What did Bižan try to read?’

Secondly, as KT show the ambiguity of sentences with respect to the position of *wh*-object is not related to the place of *wh*-phrase, rather it depends on the matrix verb.

Consider the following sentences from KT.

- 48) a. *Indirect question: stress on the verb*
 Kimea az to PORSID Parviz ki-ro busid ?
 K of you asked P who-râ kissed
 ‘Did Kimea ask you who Parviz kissed?’ Answer: yes/no
- b. *statement:*
 Kimea az to porsid Parviz ki-ro busid.
 ‘Kimea asked you who Parviz kissed.’

c. *wh*-fronting

*Kimea ki-ro az to porsid Parviz busid.

(Karimi& Taleghani 2006:4, 11)

As KT show, verbs that do not allow matrix scope of the *wh*-phrase do not allow *wh*-movement either. In fact the data in (46-48) show, scrambling out of the embedded clauses of non-control and control verbs is not related to syntactic properties of these verbs (i.e., whether it is control or non control verb), rather it depends on the lexical semantics of the verbs.

Finally, if *či* ‘what’ is substituted by *či-ro* in Ghomeshi’s examples there is no ambiguity even in non-control verbs such as *fekr kardan* ‘to think’. This is illustrated in (49).

- 49) a. Sârâ fekr mi-kard (ke) či bo-xor-e.
 S. thought Dur-did-3rdsg. that what Subj-eat-3rdsg.
 ‘What did Sârâ think to eat?’
- b. Sârâ či-ro fekr mi-kard (ke) bo-xor-e.
 S. what –râ thought Dur-did-3rdsg. that Subj-eat-3rdsg.
 ‘What is that Sârâ thinks to eat?’

In both of the above sentences, although the matrix verb is the non-control verb *fekr kardan* ‘to think’ whether *či* ‘what’ is in the embedded clause or in the matrix clause, it asks about the object of the embedded clause, but in the case of (49b) *–ro* ‘râ’ gives the contrastive reading to the object.

Furthermore, Ghomeshi does not distinguish between semantic control and syntactic control verbs. On the one hand, Ghomeshi (2001:36), following Hornstein (1999), states that Persian control constructions could be instances of syntactic control and PRO could be an NP-trace. However, as the split antecedent test shows PRO cannot

be an NP-trace in syntactic control since two non-conjoined expressions cannot both antecede obligatory PRO because they cannot have both moved from the same position. However, as I showed in (37b), repeated in (50) syntactic control verbs like *tasmim gereftan* ‘to decide’ are compatible with a split antecedent.

50) Sârâ_i goft (ke) dust-eš_j tasmim gereft-e [(ke) e_{i+j} bâ hamdige dars be-xun-an.]
 S. said that friend-her decision-took-3rdsg. that with each other lesson Subj-read-3rdpl.
 ‘Sârâ said that her friend has decided to study with each other.’

On the other hand, Ghomeshi (2001)–following Wurmbrand (1998) – suggests that Persian control verbs lack TP and CP. Therefore, Persian control verbs are incompatible with tense clashes. Ghomeshi shows that the control verb *tunestan* ‘can’ is incompatible with tense clashes as illustrated in (51a). If the control verb *tasmim gereftan* ‘to decide’–as Ghomeshi suggests – is also a restructuring verb and lacks TP, should be incompatible with tense clashes like *tunestan* ‘can.’ However, the control verb *tasmim gereftan* is compatible with tense clashes, as illustrated in (51b).

51) a. *Bižan diruz mi-tunest (ke) fardâ be-r-e.
 B. yesterday Dur-can/be-able-3rdsg. that tomorrow Subj-go-3rdsg.
 *‘Bižan could yesterday go tomorrow.’
 (Ghomeshi 2001:26, 39a)

b. Sârâ diruz tasmim gereft (ke) fardâ be-r-e.
 S. yesterday decision took-3rdsg. that tomorrow Subj-go-3rdsg.
 ‘Sârâ yesterday decided to go tomorrow.’

This problem originates from the fact that in Wurmbrand’s sense, *tasmim gereftan* is a syntactic control verb and syntactic control verbs are not restructuring verbs. The verb *tunestan* ‘can/be able’ is a semantic control verb, and semantic control verbs are restructuring verbs.

Moreover, Ghomeshi considers the verb *tunestan* ‘can/be able’ a restructuring verb, however, as I showed in the previous section— *tunestan* can be either a syntactic or semantic control verb. Only the semantic control representation of *tunestan* can be a restructuring verb not the syntactic one. In fact, as the discussion of the next two subsections shows even Persian semantic control verbs cannot be the instances of restructuring.

I will highlight the other problems with Ghomeshi’s proposal when I am discussing the restructuring process in Persian complex modals in the next section.

4-2. Persian Complex Modals and Restructuring

As I have shown in Section 2-2, all Persian modals are not instances of syntactic control. We expect that those modals which are semantic control to be restructuring constructions. Based on Wurmbrand and Cinque’s criteria presented for restructuring, I evaluate Persian modal verbs. I will start with the main property of restructuring constructions which is lack of CP projection. If we show that Persian complex and simple modals, which are instances of semantic control verbs, include a CP boundary then it is not necessary to check other properties of restructuring such as lack of TP, because as Chomsky (2004) claims the presence of CP license TP. In other words, CP selects TP. As our discussion in Section 3-1 on Ghomeshi’s proposal regarding scrambling and *wh*-objects of core control verbs showed, these verbs should have CP. Now, we will see how Persian complex modals behave with respect to the lack of CP projection.

4-3. Lack of CP projection

As Wurmbrand (1998:30) notes if the embedded clause of a control verb has a complementizer, it cannot be a restructuring construction. Although Persian complementizer marker *ke* ‘that’ is optional in the complex modals context, we cannot neglect its possible presence. Ghomeshi (2001:37) suggests that *ke* in control constructions is not a complementizer and it does not itself head a functional projection, rather it is a marker of subordination which can be cliticized on to any lexical item that is followed by a propositional constituent (vP, CP). In other words, Ghomeshi (2001) believes that *ke* is not located in C in control constructions. I will discuss the critical role of *ke* ‘that’ in Persian grammar, especially in complement clauses in the next section.

4-3-1. Ke as a Multifunctional Element

There are some controversies in the literature on the role of *ke* ‘that’. As Mohammad & Taleghani (2005) (henceforth MT) show, previous studies regarding *ke* can be divided into two groups: (1) descriptive studies; (2) theoretical studies. From a descriptive point of view, *ke* has limited syntactic functions. In standard Persian, *ke* functions either as a complementizer or introduces a relative or appositive clause. In complex sentences, *ke* is used to introduce the complement clause, as illustrated in (52a). *Ke*, in this function, is optional and its omission does not affect the grammaticality or the meaning of sentences. *Ke* is also used to introduce a relative clause, as shown in (52b, c). It is worth noting that in contrast to English, Persian does not have a relative pronoun.

- 52) a. fekr mi-kon-am (*ke*) rafte bâ-š-e. (Complementizer)
 thought Dur-do-1stsg. that gone-Subj-be-3rdsg.
 ‘I think that he has gone.’
- b. mard-i- *(*ke*) tu ketâbxune did-am pedar-e Sârâ-st. (Relative clause)
 man-Rel that in library saw-1stsg. father-Ez S. is-3rdsg.
 ‘man who I saw at the library is Sârâ’s father.’
- c. ketâb-hâ-y-i ro *(*ke*) goft-i, xarid-am. (Relative clause)
 book-Pl-Rel-Acc that told-2ndsg, bought-1stsg.
 ‘I bought the books that you told me.’

Ke in relative contexts is obligatory and cannot be omitted. This is illustrated in (52b,

c).

Ke also functions as an adjunct particle and is obligatory in these particles.²⁷

This is shown in (53).

- 53) a. *piš az in –ke* be-r-i, man-o xabar kon.
 before Subj-go-2ndsg. me-Acc news do-2ndsg.
 ‘Before you go, tell (inform) me.’
- b. Sârâ be mehmuni na-y-âmad *čun (ke)* mariz bud.
 S. to party not- came-3rdsg. because that sick-was-3rdsg.
 ‘Sârâ did not come to the party, because she was sick.’

Critical to my discussion in this chapter is the function of *ke* as a complementizer.

²⁷ *ke* is also the emphatic particle, especially in spoken Persian. This is illustrated in (i).

- i) hanuz na-raft-am *ke?*
 still-not-went-1sg. Eph.M
 ‘I have not gone yet?’

It is worth noting that Karimi (2001) considers another function for *ke* as a topic marker. Consider the following sentence from Karimi (2001).

- ii) ketâb-â –ro *ke* na-xund-i.
 book-Pl-râ that not-read-2nd sg.
 ‘you did not read the books’

As MT (2005) shows, this kind of structures have the same structures in which *ke* has emphatic function such as the sentence in (i). The difference between Karimi’s example and the example in (ii) is that in the former the object *ketâb-â* ‘book-pl.’ is emphasized while in the latter the whole sentence is in emphatic position. Thus to MT *ke* as a topic marker is a kind of an emphatic *ke*.

We saw in Section 3-2 that Ghomeshi (2001) suggests that *ke* is not a complementizer, but rather is a clitic to mark the subordinate clause. Darzi (2005) highlights two main empirical problems with Ghomeshi's proposal with respect to *ke*. I outline his discussion as follows:

4-3-2. Ellipsis

Darzi (2001) notes that under Ghomeshi's (2001) analysis, the complementizer and the vP that follows it do not form a constituent. The first piece of evidence that he presents against this analysis comes from ellipsis in Persian. As he shows in (54), ellipsis is possible in Persian with CPs but not TPs.

54) man mi-tun-am (ke) bâ u sohbat kon-am ammâ tu ne-mi-tun-i (*ke).²⁸
 I Dur-know-1stsg. (that) with him talk-to do-1stsg. but you not-Dur-is-able-2ndsg.
 'I can talk with him but you cannot'

(Darzi 2005:11, 62)

Darzi explains that if *ke* 'that' is cliticized to the matrix verb, and if it is not in the head of complementizer phrase then the presence or absence of *ke* should not have any effect on the grammaticality of the sentence. However, as (54) shows, if *ke* is at the end of the sentence, the sentence will be ungrammatical. This observation shows that *ke* is not cliticized to the matrix verb.

4-3-3. Temporal Adverbs

Another piece of evidence that Darzi presents against treating *ke* as a clitic comes from the distribution of temporal adverbs. As Darzi shows, temporal adverbials like

²⁸ There are some cases in English that a clitic can occur at the end of the sentence. It seems that this happens because of the specific prosodic conditions.

hæmiše ‘always’ may occupy different positions in the sentence, even in the final position as illustrated in (55).

- 55) u to-râ dar moqâbel-e digarân sarzaneš mi-kon-e hæmiše.
 s/he you-_{ACC} in front-EZ others blame Dur-do-3rdsg. always
 ‘S/he always blames you in front of others.’
 (Darzi, 2005:11, 64)

Where the adverbial *hæmiše* precedes the complementizer *ke*, it modifies the matrix verb, as illustrated in (56).

- 56) man fekr mi-kard-am **hæmiše** ke u to-râ dar moqâbel-e digarân sarzaneš mi-kon-e
 I thought Dur-do.Pst-1stsg always that you-râ in front-EZ others blame Dur-do-3rdsg.
 ‘I always thought that he would blame you in front of others.’
 (Darzi, 2005:11, 65)

If *ke* is cliticized to the matrix verb, when the temporal adverb *hæmiše* follows *ke*, it should be able to modify the matrix verb rendering the sentence unambiguous.

However, in (57) where it follows the complementizer *ke* it can only modify the embedded verb. In the absence of the complementizer, the temporal adverbial phrase may be understood as modifying either the matrix verb or the embedded verb rendering the sentences ambiguous as shown in (58).

- 57) man fekr mi-kard-am ke **hæmiše** u to-râ dar moqâbel-e digarân sarzaneš mi-kon-e
 I thought Dur-do.Pst-1stsg that always you-râ in front-EZ others blame Dur-do-3rdsg.
 ‘I always thought that he would blame you in front of others.’
 (Darzi, 2005:11, 66)

- 58) man fekr mi-kard-am **hæmiše** u to-râ dar moqâbel-e digaran sarzaneš be-kon-e.
 I thought Dur-do.Pst-1stsg always he you-râ in front-EZ others blame Subj-do-3rdsg.
 (i). ‘I always thought he would blame you in front of others.’
 (ii). ‘I thought he would always blame you in front of others.’
 (Darzi, 2005:11, 67)

Darzi notes that if what seems to be a complementizer in core control constructions is actually a clitic hosted by the matrix verb, then once the temporal adverbial phrase

follows *ke*, it should still be possible for it to modify the matrix verb rendering the sentence ambiguous. While this prediction is not borne out as the temporal adverbial has only the embedded reading in (59).

- 59) u mi-tun-e ke **hamiše** to-râ dar moqâbel-e digarân sarzaneš be-kon-e.
 s/he Dur-can-3rdsg. that always yo-râ in front-EZ others blame Subj-do-3rdsg.
 ‘(S) he is able to always blame you in front of others.’
 (Darzi, 2005:11, 69)

Thus, the lack of matrix reading for the temporal adverbial suggests that it is not a constituent of the matrix clause. This, in turn, undermines the clitic analysis of *ke*, and shows that *ke* does determine the clause boundary.

Therefore, based on the above discussion, *ke* is located in C°, and it need not cliticize to the matrix v°. Consequently, *ke* should prevent the restructuring process in the Persian auxiliary modal *tunestan* according to the criteria laid down by Wurmbrand (1998).

Now back to Persian complex modals and see if they lack CP and TP. Let us test the temporal adverbial *hamiše* ‘always’ with complex root modals. Consider the following sentences.

- 60) a. Sârâ majbur-e (ke) hamiše davâ-š-o sare vaqt bo-xor-e.
 S. obliged-be-3rdsg. that always medicine-her-râ on time Subj-eat-3rdsg..
 Literal meaning: ‘Sârâ is obliged to have always her medicine on time.’
 b. Sârâ ejâze dâr-e (ke) hamiše az ketâbxune estefâde be-kon-e.
 S. permission have-3rdsg. that always of library use Subj-does-3rdsg..
 Literal meaning: ‘Sârâ has permission to use always of the library.’

If what seems to be a complementizer in a control construction is actually not a complementizer, as proposed by Ghomeshi (2001), hosted by the matrix verb, then once the temporal adverbial phrase follows *ke*, it should still be possible to modify the matrix

verb rendering the sentence ambiguous. However, the examples of (60) show this prediction is not borne out and the temporal adverbial has only the embedded reading. Again, this shows that *ke* is not cliticized to the matrix verb and it is in the complementizer position.

The pseudo-raising complex modals as well as syntactic and semantic control modals all have CPs and *ke* as a complementizer is located in C° and is not cliticized to the matrix verb. This is illustrated in the following sentences with the temporal adverbial phrase *hamiše* ‘always.’

- 61) a. Sârâ lâzem-e (ke) hamiše davâ-š-o sare vaqt bo-xor-e.
 S. necessary-be-3rdsg. that medicine-her-râ on timeSubj-eat-3rdsg..
 Literal meaning: ‘It is necessary that Sârâ always has her medicine on time.’
- b. Sârâ momken-e (ke) hamiše davâ-š-o sare vaqt bo-xor-e.
 S. possible-be-3rdsg. that medicine-her-râ on timeSubj-eat-3rdsg..
 Literal meaning: ‘It is possible that Sârâ always has her medicine on time.’
- c. Sârâ ehtemâl-dâr-e (ke) hamiše davâ-š-o sare vaqt bo-xor-e.
 S. possibility-have-3rdsg. that medicine-her-râ on timeSubj-eat-3rdsg..
 Literal meaning: ‘It is possible that Sârâ always has her medicine on time.’

From the above discussion we can conclude that in Persian complex modals, the embedded clause has CP. Since C selects for T, whenever we have CP we should have TP in a clause (Chomsky 2001, 2004). Morphologically, this makes sense, because all the embedded verbs are fully inflected with subjunctive mood agreement morphology.

4-4. Lack of *Wh*-Phrase

Wh-phrases may appear in the embedded clauses of Persian complex modals.

This is illustrated in the following sentences:

- 62) a. Sârâ majbur-e (ke) či be-xar-e?
 S. obliged-be-3rdsg. (that) what Subj-buy-3rdsg.
 ‘What is Sârâ obliged to buy?’
- b. Sârâ lâzem-e (ke) či be-xar-e?
 S. necessary-be-3rdsg. (that) what Subj-buy-3rdsg.
 Literal meaning: ‘What is it necessary that Sârâ will buy?’
- c. Sârâ momken-e (ke) či be-xar-e?
 S. possible-be-3rdsg. (that) what Subj-buy-3rdsg.
 Literal meaning: ‘What is it possible that Sârâ will buy?’
- d. Sârâ emkân/ehtemâl dâr-e (ke) či be-xar-e?
 S. possibility/probability have-3rdsg. (that) what Subj-buy-3rdsg.
 Literal meaning: ‘What is it possible/ likely that Sârâ will buy?’

As the above sentences show, the embedded clauses can contain *wh*-elements.

Wurmbrand notes (1998:30-31) that restructuring constructions should not allow *wh*-element in their complement clauses, since *wh*-phrases are in the Spec-CP in English and in many other languages, and this shows that a sentence has the CP. In the case of Persian, however, as KT (2005) show the presence of the *wh*-phrase inside the embedded clause does not mean that they are in the Spec-CP since Persian is a *wh*-in-situ language. As KT (2005) show, however, there is a null operator (henceforth OP) in the Spec-CP even though the *wh*-phrase is in-situ. Thus, this shows that the embedded clause should be a CP whose Spec is the host of OP. Therefore, in Persian, the possibility of a *wh*-phrase in the embedded clause show the clause boundary, and based on this fact Persian complex modals are not instances of restructuring constructions.

So far, the above observations show that although Persian complex modals are sometimes semantic control verbs they are not instances of lexical restructuring. What

about Persian auxiliary verbal modals? Are they restructuring verbs? This question is addressed in the next section.

4-5. Persian Auxiliary Modal Verbs and Restructuring

The simple modal verb *tunestan* ‘can/ be able to’ shows the same behavior that we saw in complex modals with respect to the complementizer *ke*. As we saw in (59) repeated in (63), if what seems to be a complementizer in core control constructions is actually a clitic hosted by the auxiliary modal verb *tunestan*, then once the temporal adverbial phrase follows *ke*, it should still be possible for it to modify *tunestan* rendering the sentence ambiguous. While this prediction is not borne out as the temporal adverbial has only the embedded reading in (63).

- 63) u mi-tun-e ke **hamiše** to-râ dar moqâbel-e digarân sarzaneš be-kon-e.
 s/he Dur-can-3rdsg. that always yo-râ in front-EZ others blame Subj-do-3rdsg.
 ‘(S) he is able to always blame you in front of others.’
 (Darzi, 2005:11, 69)

The example in (63) shows that the simple verbal modal *tunestan* ‘can/ to be able’ has a clause boundary. Therefore it cannot be a restructuring verb.

A piece of evidence that *bâyad* and *šâyad* are mono-clausal comes from the Negative Polarity Items (henceforth NPI). NPIs in Persian require a clause-mate negative verb in ordinary clauses as illustrated in (64).

- 64) a. hičkas be in mehmuni na-raft.
 nobody to this party Neg-went-3rdsg.
 ‘Nobody went to the party.’
 b. *hičkas goft ke Sârâ be in mehmuni na-raft.
 nobody said-3rdsg. that S. to this party Neg-went-3rdsg.
 ‘Nobody said that Sârâ did not go to the party.’

Now consider the following sentences with auxiliary modals.

- 65) a. *bâyad hičkas be in mehmuni na-r-e.*
 must nobody to this party not-go-3rdsg.
 Literal meaning: ‘Nobody must not go to the party.’
- b. *na-bâyad hičkas be in mehmuni be-r-e.*
 not must nobody to this party Subj-go-3rdsg.
 Literal meaning: ‘Nobody must not go to the party.’

As (65a, b) show, whether negation precedes the modal or the matrix verb, the negation licenses the NPI in subject position and the sentence is grammatical. This claim extends to the data from simple modal *šâyad* in (66). It is worth noting that the frozen modal verb *šâyad* ‘may’ does not have a negative form in colloquial Persian.

- 66) *šâyad hičkas be in mehmuni na-r-e.*
 may nobody to this party not-go-3rdsg.
 ‘Nobody may not go to the party.’

Based on the NPI evidence, *bâyad* and *šâyad* are mono-clausal and lack CP boundary. Therefore, we conclude that since *bâyad* and *šâyad* lack CP and they do not assign theta roles to their arguments, they are instances of the functional restructuring construction in Wurmbrand’s (1998) sense.

4-6. Summary

The discussion of this section shows that not all Persian modals are syntactic control verbs. Among Persian modal verbs *majbur šodan* ‘to become forced’, *ejâze dâštan* ‘to have permission’ *ehtiyâj dâštan* ‘to need’ and *tunestan* ‘may/to permit’ are syntactic control verbs, while *lâzem budan* ‘to be necessary,’ *majbur budan* ‘to be obliged,’ and *tunestan* ‘can/to be able’ are semantic control verbs. The discussion of this section also has highlighted the fact that the class of restructuring verbs varies across languages. As we have seen in the last three sections German semantic control

verbs are instances of restructuring construction while the discussion of this section has shown Persian complex modals which are semantic control verbs are not restructuring constructions. As a matter of fact, the only case of restructuring in Persian is the functional restructuring which appears in auxiliary verbal modals such as *bâyad* ‘must’ and *šâyad* ‘may.’

5. Persian Modals: Structural Position

There are different proposals about the syntactic position of modals in the literature. Ross (1969) and Barbiers (2002) suggest that modals with epistemic interpretation are one place predicates, taking the entire proposition as their complement, whereas deontic modals are two-place predicates, i.e., they involve relations between the subject and the rest of the clause. For this special behavior, epistemic modals are often treated as a raising operator. Picallo (1990) also assumes two positions for modals in Catalan. There is a higher position above clause negation that corresponds to epistemic interpretations and there is a lower position below clausal negation corresponding to deontic interpretation. Furthermore, Cormack & Smith (2002) suggest that English also has two positions for modals: a position higher than clausal negation and a position lower than clausal negation. This distinguishes between necessity modality (high) and possibility modality (low).

In this section first, I present Phase theory (Chomsky 2001). This theory is critical to our discussion since they assume two basic domains in a sentence. One (i.e., CP phase) includes the operators like CP and all functional heads and one (i.e., vP

phase) contains lexical heads such as vP. Modals are operators and Phase theory can give a clear picture of modals syntactic structures.

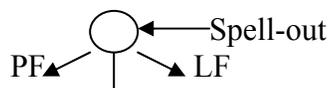
Furthermore, most Persian modals are complex predicates and these modals should check and delete operator features before LF by head to-head movement (i.e., the process of feature checking in MP suggested by Chomsky 1995). This will raise a lot of problems concerning the order of elements in complex predicates and about which element should move to do the checking, the NV element or the LV. Phase Theory, with the Agree operation, which matches features in-situ, solves this problem since the operator feature will be matched and deleted by Agree rather than by movement.

Secondly, as an example of a well-formed analysis in which root and epistemic modals are generated in different positions, I will discuss Wurmbrand's (1998) analysis, which is in the same spirit as Cormack and Smith (2002), Ross (1969) and Barbiers (2002). We will see that it does not extend well to Persian. However, Wurmbrand herself no longer adopts this structure for German modals (see Wurmbrand 1999, 2001).

5-1. Theoretical Background: Phase Theory

The model of Chomsky's (1995) MP is represented as follow:

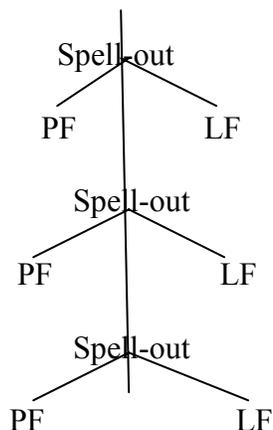
67)



At Spell-out, the representation is sent to PF. Movement as a syntactic operation is in two forms: 1) Overt movement which takes place before Spell-out and affects pronunciation, and 2) Covert movement which happens after Spell-out and does not

affect the pronunciation. In Chomsky's Phase Theory (2001b), there is a multiple Spell-out and multiple transfers as illustrated in diagram (3-9).

DIAGRAM (3-9)



When the building of certain syntactic constituents is finished, the material is sent to PF and LF. This certain syntactic constituent is called *the phase*. In fact, in phase-theoretic Minimalism, there is no covert movement—either Agree has EPP features and triggers overt movement of the Goal, or Agree has no EPP features (=‘weak’), and the Goal checks its features in situ. It should be noted that the sent-off material is no longer available for further operations within ‘narrow syntax’ in the higher phase. Chomsky (2001b) suggests that phases are propositional, and there are two strong phases: 1) The lexical phase or v*P (transitive/ unergative vP) which includes VP, and 2) The functional phase or CP containing TP (i.e., tensed clauses and control infinitives). The head of the phases (i.e., v and C) may be assigned an EPP feature to trigger movement. As Chomsky states in the Phase Impenetrability Condition, repeated in (68), the domain (complement) of a phase head (henceforth H) is not accessible to operations outside of HP, but only H and its edge.

68) **Phase Impenetrability Condition**

The domain of H is not accessible to operations outside HP, but only H and its edge.

The edge being the residue outside of H-bar, either SPECS or elements adjoined to HP.

(Chomsky 2001b:10)

Therefore, an element that needs to be raised out of HP has to move to the edge of the phase. LF and PF interpretations apply within each phase, and the interpretations take place at the phase level. Spell out in the phase theory is cyclic at the phase level and when the operations are finished in one phase, there is no return to that phase. Within the phase, any feature of a lexical item that is not interpretable at the interface requires elimination/ checking. There are LF uninterpretable inflectional features that enter into agreement relations with interpretable features. Thus the Φ -features of T (Tense) are uninterpretable and agree with the interpretable Φ -features of a nominal that may be local or remote, yielding the surface effect of noun-verb agreement. Therefore, we can conclude that an agreement relation removes the uninterpretable features from the narrow syntax, allowing derivations to converge at LF while remaining intact for the phonological component. Chomsky (2001b:3) suggests that there is a relation Agree holding between α and β where α has interpretable inflectional features and β has uninterpretable ones which delete under Agree. Movement (i.e., displacement in Chomsky's term) is implemented by selecting a target and a featurally related category to be moved to a position determined by the target. The target also determines the kind of category that can be moved to this position.

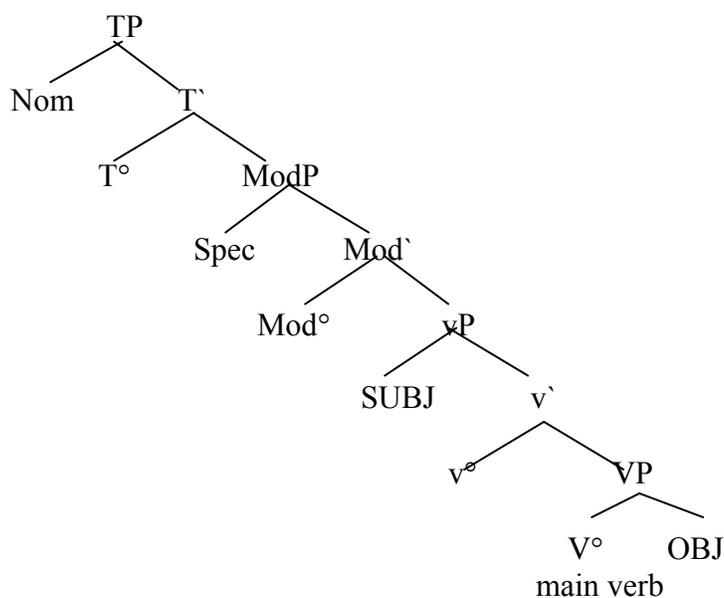
The question of interest is where are modals? This question is addressed in the next subsection.

5-2. German Modals: Structural Position

Wurmbrand's analysis of the structure of modal constructions is based on assumptions going back to very early ideas of clause structure (Chomsky 1957, Jackendoff 1972, 1977, among others). These assumptions are based on the claim that modal verbs are auxiliary-like elements rather than lexical verbs that appear outside the VP. Wurmbrand suggests the following basic structure for a clause with a modal verb.

DIAGRAM (3-10)

Basic clause structure



(Wurmrand 1998:253, 14)

In Wurmbrand's structure, there are three categories that can host verbs: T°, Mod°, and V°. Each of these categories has specific features. There is a feature checking process

among these heads. Verbs are attracted by the feature of the functional heads, i.e., verbs can move up the tree. But the attractors themselves cannot move to satisfy the feature, i.e., functional heads without lexical verbs do not move.

Furthermore, Wurmbrand (1998:255) proposes that epistemic modals and root modals occupy different positions in the clause. Epistemic modals are in T° and root modals are in Mod° . Wurmbrand assumes that T° is the least thematic head in the clause, thus only verbs that do not assign any thematic roles to their external arguments can be generated in T° . This means that T° -verbs are case assigners and tense operators but not theta assigners. The Mod° heads, on the other hand, are the position of verbs which have the capacity of assigning a theta role to an NP in the specifier of ModP . Therefore, the verbs which appear in Mod heads are root modals.

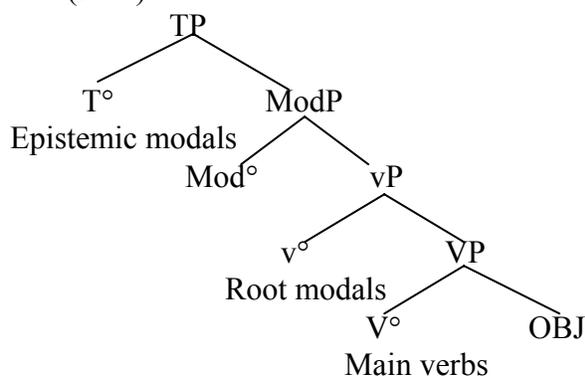
Wurmbrand (1998:256) also suggests that the distinction between root and epistemic modals is not just semantic (and thematic), there is also a syntactic difference between root and epistemic modals: epistemic modals– in contrast to root modals– cannot be embedded under other modals or auxiliaries. Wurmbrand assumes that this restriction on epistemic modals is due to the structural position of epistemic modals. This means that epistemic modals occupy a higher functional position in the clause whereas root modals appear in a functional position lower than T° but higher than VP. Consider the following German example taken from Wurmbrand (1998:257, 17b).

- 69) Morgen dürfte er Kartoffel schälen müssen
 tomorrow might he potatoes peel must
 a. ‘Tomorrow, he might have to peel the potatoes.’
 b. *‘Tomorrow, it might be the case that it must be the case that he peels the potatoes.’

As (69a) shows the verb *müssen* ‘must’ in its root reading can be embedded under the modal *dürfte* ‘might’ while in (69b), *müssen* ‘must’ in its epistemic reading cannot be embedded under the modal *dürfte*.

Based on the above discussion, Wurmbrand proposes the following structure for root and epistemic modal’s positions.

DIAGRAM (3-11)



As the structure in (3-11) predicts epistemic modals can embed root modals, but they cannot be embedded under a root modal. Wurmbrand (1998:253) assumes the following attract condition on checking: verbs are attracted by the features of functional heads but attractors cannot move to satisfy their features.

After this brief discussion of the structural position of German modals, in the next section, we will see where Persian modals are located structurally.

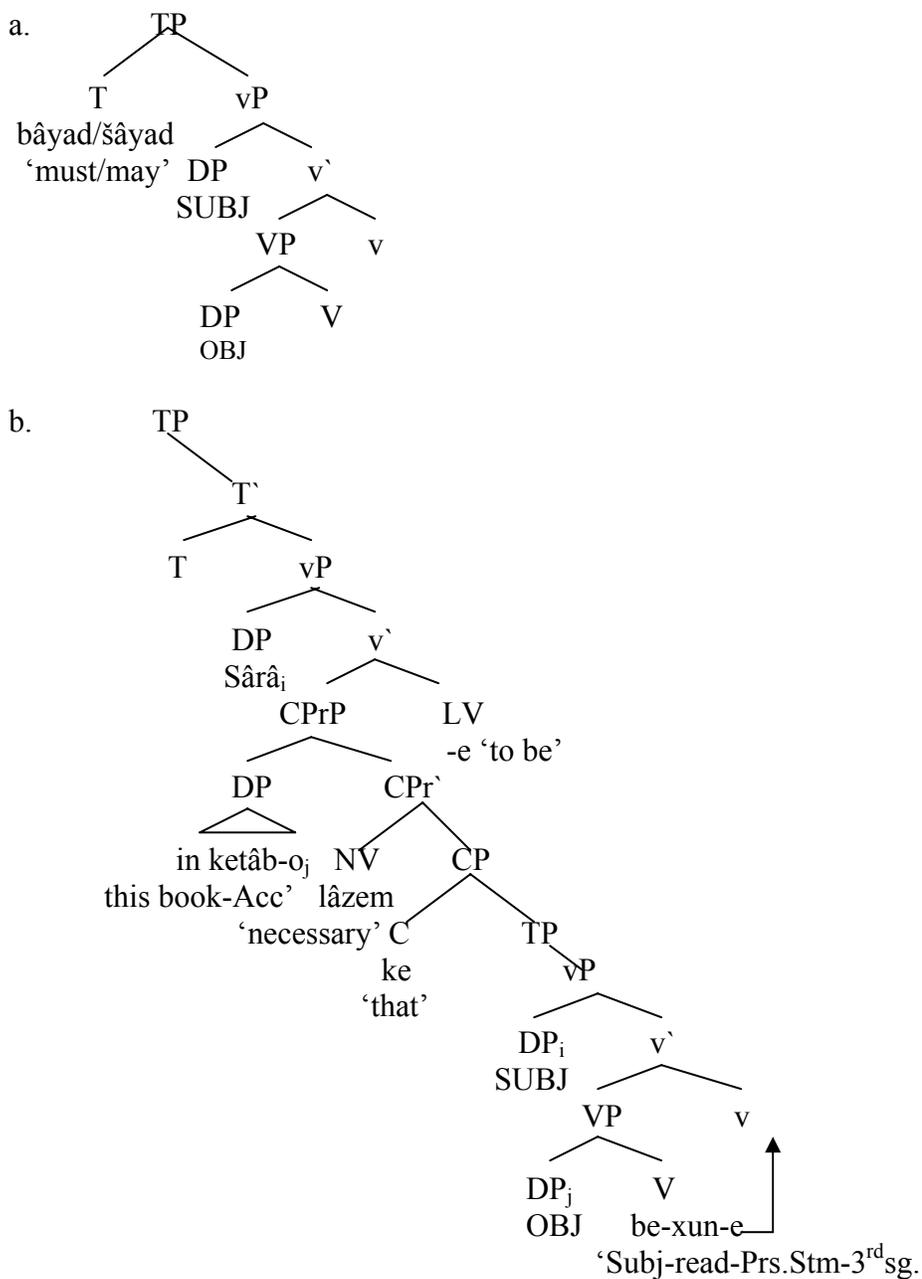
5-3. Persian Modals: Structural Position

I start the discussion with two auxiliary modals *bâyad* ‘must’ and *šâyad* ‘may.’ *šâyad* ‘may’ is an epistemic modal which exhibits functional restructuring. As I discussed in Section 1 of this chapter, *šâyad* is represented by a pseudo-raising structure in which the syntactic subject comes from the lower clause. *bâyad* has all the morpho-

syntactic properties that *šâyad* has, with the difference that *bâyad* can carry both epistemic and root readings. Since both *bâyad* and *šâyad* are defective verbs and do not assign the theta role to their arguments, I suggest that *bâyad* in epistemic reading and *šâyad* are located in T°. It is worth noting that in Section 3 of this chapter regarding *bâyad*, and *šâyad*, I suggested that their complements lack TP and CP and are functional restructuring constructions. If we assume that *bâyad*, and *šâyad* are functional restructuring constructions since they are morphologically defective verbs and cannot assign a theta role, then we can suggest that epistemic auxiliary verbs *bâyad* and *šâyad* are located in T°.

In the case of other epistemic modals such as *momken budan* ‘to be possible’, and *ehtemâl/emkân dâštan* ‘to be possible/likely,’ and dynamic modal *lâzem budan* ‘to be necessary’, since they are complex predicates they are generated in two different positions in vP, i.e., NV element inside CP_r and the light verb in v°, and they check the modal (operator) feature in T. *lâzem budan*, *momken budan*, *ehtemâl/emkân dâštan* take default third person agreement. The distinction between *lâzem budan*, *momken budan*, *ehtemâl/emkân dâštan* and *bâyad* ‘must’ and *šâyad* ‘may’ is that the former set of modals may have past tense while *bâyad* and *šâyad* are frozen, defective verbs, and do not have any tense. Therefore, they are auxiliary modals which are based-generated in T since they are defective verbs. I suggest the following structure for Persian pseudo-raising modals.

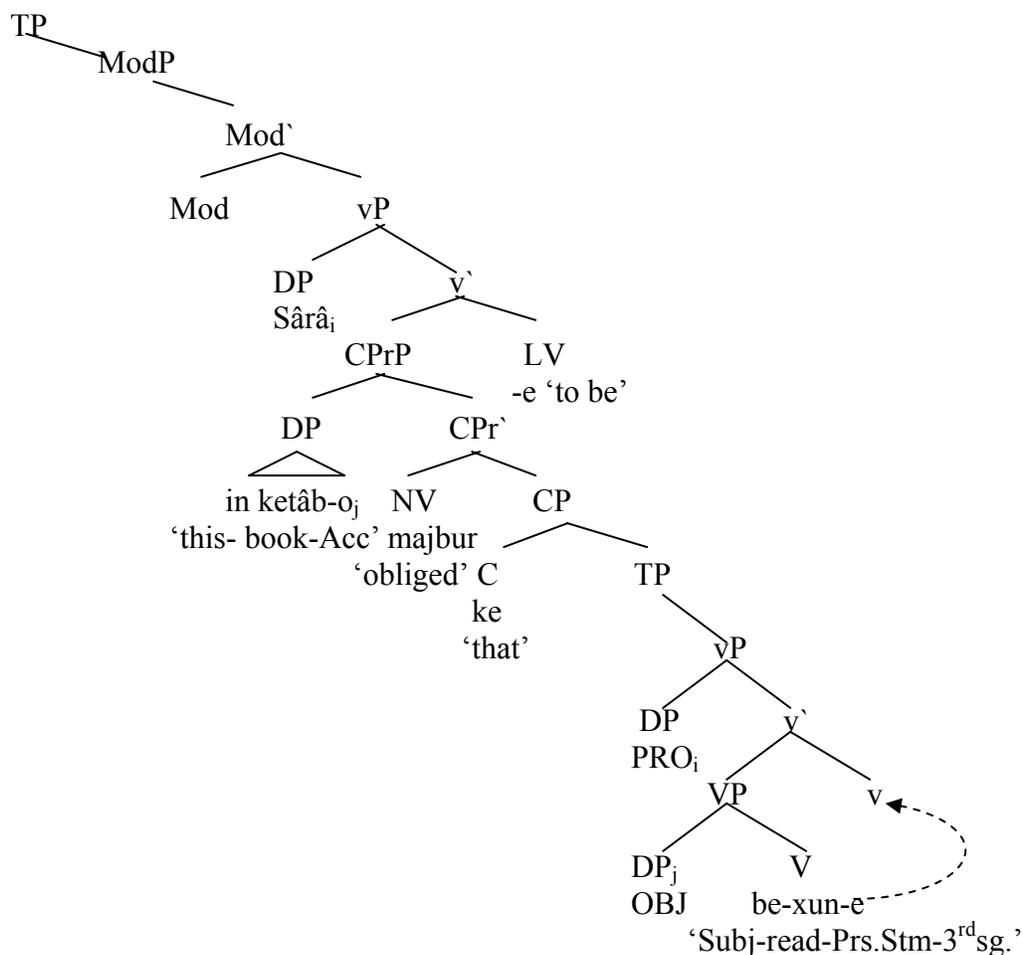
DIAGRAM (3-12)



In the case of complex root modals which are syntactic control constructions like *majbur šodan* ‘to obliged/forced,’ *tunestan* ‘to permit,’ *ejâze dâstan* ‘to have permission,’ and *ehtiyâj dâstan* ‘to need,’ I propose that they are in vP since they assign

a theta role to their arguments and check the operator features at Mod°. Thus the structure of these root modals is as follows.

DIAGRAM (3-13)



In the case of the semantic control modal *tunestan* 'to be able,' and *majbur budan* 'to be obliged' which are capable of assigning a theta role and have a full agreement, I suggest that they have the same structure that I presented for the other root modals with the difference that we do not have PRO or any other element in the subject position, since they are semantic control verbs, and the absence of a Spec-vP in above structure.

It is worth noting that in diagrams (3-12b) and (3-13) the presented structure of epistemic and root complex modals with pseudo-raising and control constructions give us the wrong word order for complex predicates, I will discuss this issue in detail in Chapter 6.

As we see, most Persian modals—whether root or epistemic—are complex predicates. A question arises here is how an operator feature checks between v -T and v -Mod°. Does the whole complex modal move from v to T/ Mod° to check the operator feature or does just the light verb move?

Wurmbrand (1998) suggests that there is a feature checking process among these heads. Verbs are attracted by the feature of the functional heads, i.e., verbs can move up the tree. There are, however, two main problems here. First, in modal complex predicate the NV element contains the modal meaning, hence it must contribute the operator feature to the complex predicate not the LV. Thus if the operator feature should be checked by the movement of either LV or the NV element, the best candidate would be the NV element. Secondly, if just the LV moves and the NV element stays in lower v , then the LV should precede NV element in the complex predicate, and results in an ill formed structure. On the other hand, if we assume that the whole complex predicate moves, this suggestion also has a critical problem. As FHK (2005:1393) suggest Persian complex predicates are vP , with LV in v° , and NV element in V° . Since feature checking is head-to-head movement, thus the whole complex predicate cannot move to check the operator feature. The only way it could work would be if the NV element successive-cyclically head-moves into v° and then the whole complex moves to

T. However, since the NV element can be separated syntactically under certain conditions, this does not seem right either. There is a solution for this puzzle in Chomsky (2001, 2004). Chomsky (2001:4) proposes that feature checking is done by the operation Agree. As he explains matching of features between probe and goal induces Agree. Therefore, in the case of Persian modals, I suggest that the operator feature of modals matches with the operator feature of T or Mod° via the Agree relation. This is illustrated in diagrams (3-14) and (3-15).

DIAGRAM (3-14)

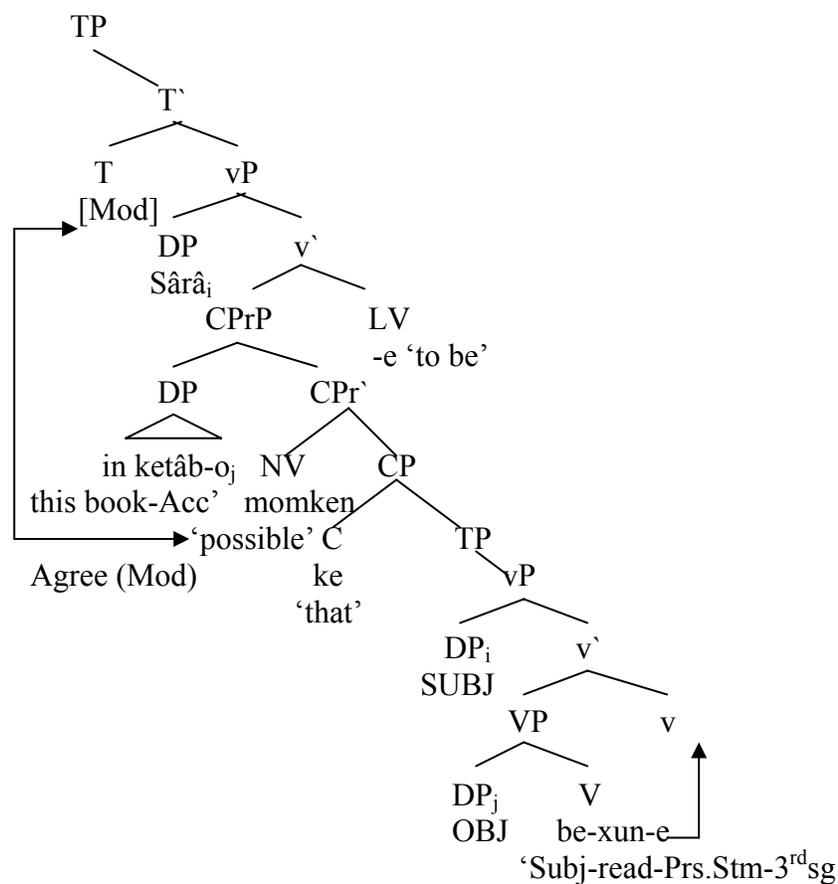
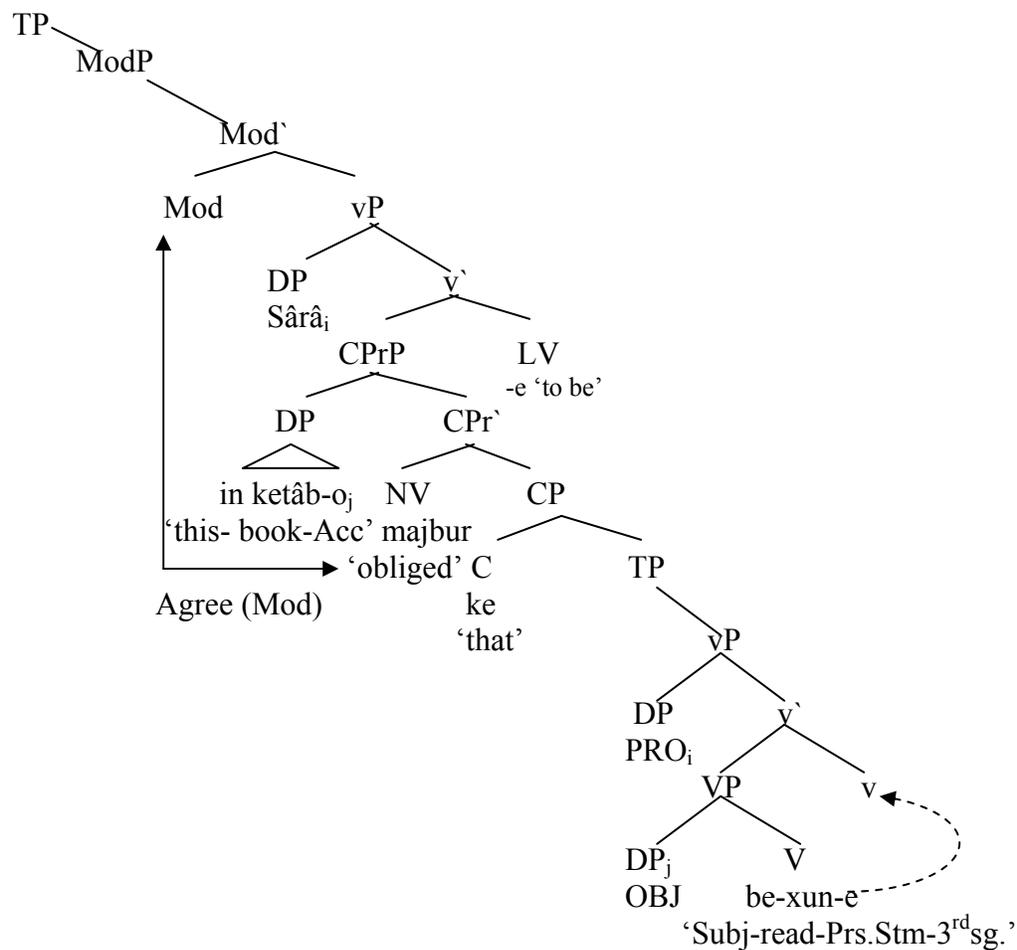


DIAGRAM (3-15)



As the above structures show, there is an Agree relation between the interpretable operator feature of NV elements in modal complex predicates and the uninterpretable operator features in T and Mod^o. The agreement relation between these heads removes the uninterpretable operator feature from the narrow syntax allowing the derivation to converge at LF. This also results in the modal operator taking scope in its higher, checked position, and receiving an epistemic or root interpretation respectively.

So far, the structural position of Persian root and epistemic modals shows that there is no one to one correspondence between syntactic position and semantic interpretation.

The auxiliary modal *bâyad* ‘must’ which is semantically ambiguous between the root and epistemic readings, syntactically it is a defective verb and does not assign a theta role to its argument. A question of interest is how the semantic ambiguity of *bâyad* is represented in the syntactic structure. I have suggested that in the case of *bâyad*, this defective verb in epistemic reading is generated in a higher functional position like T° , However, in its root reading I suggest that *bâyad* like other root modals is in Mod° and the morpho-syntactic properties of its complement also help to determine whether *bâyad* has root reading or epistemic reading. Consider the following sentences.

- 70) a. Sârâ *bâyad* davâš-o bo-xor-e. (root)
 S. must medicine-râ . Subj.Prs-eat-3rdsg.
 ‘Sârâ must have her medicine.’
- b. Sârâ *bâyad* davâš-o xorde bâ-š-e (epistemic)
 S. must medicine-râ . eaten-Prt be-Subj.Prf-3rdsg.
 ‘Sârâ must have had her medicine.’

As (70a, b) show, *bâyad* in root interpretation co-occurs with the present subjunctive verb *bo-xor-e* ‘Sub. Prs eat-3rdsg.’, while in epistemic reading *bâyad* appears in a perfective subjunctive context, i.e., *xorde bâ-š-e* ‘eaten-Prt be-Subj.Prf.3rdsg.’. Thus the morpho-syntactic features of the main verb help to determine *bâyad*’s semantic interpretation. Therefore, I conclude that there is no one-to-one correspondence between the syntactic structure and the semantic interpretation in all Persian modals except in the auxiliary modal *bâyad*. This auxiliary modal can appear in two different structural positions (i.e., T° or Mod°) and shows two various semantic interpretations (i.e., epistemic and root readings). In the case of *bâyad*, other factors like morpho-syntactic

properties of the main verb of the clause helps to determine the modal semantic interpretations.

6. Conclusion

In this chapter, I have shown that all Persian root complex modals are syntactic control except the root complex modals *lâzem budan* ‘to be necessary,’ and *majbur budan* ‘to be obliged’ which are semantic control verbs in Wurmbrand’s (1998) sense. The discussion of this chapter has also shown that all epistemic modals which are either defective auxiliary modals or complex modals take default agreement and they are pseudo-raising constructions.

The discussion of this chapter has also highlighted the fact that the class of restructuring verbs varies across languages. As we have seen in Section 5-2, German semantic control verbs are instances of restructuring construction while the discussion of this section has shown that the only Persian semantic control verb, i.e., *majbur budan* ‘to be obliged’ is not restructuring constructions, because the complement of this complex modal is a CP and *ke* ‘that’ as a complementizer is located in C°. As a matter of fact, the only case of restructuring in Persian is the functional restructuring which appears in auxiliary verbal modals such as *bâyad* ‘must’ and *šâyad* ‘may.’ A piece of evidence of clausemate negation shows that these modals are mono-clausal and lack a CP.

Finally, I have shown that there is no one-to-one correspondence between the structural positions and semantic interpretations of modals in Persian except in the auxiliary modal *bâyad* ‘must’. In the case of the auxiliary modal *bâyad*, the two

different semantic interpretations are represented in two different structural positions— i.e., *bâyad* in epistemic reading is in T° and in root reading is located in Mod°. Thus in the case of the auxiliary modal *bâyad*, the syntactic structure maps on the semantic interpretations, and the morpho-syntactic properties of the main verb of the clause help to determine the modal semantic interpretations.

CHAPTER 4

NEGATION

Introduction

The study of negation attracts the attention of researchers in many different fields including Linguistics, Philosophy, and Psycholinguistics. For linguists, especially semanticists and pragmatists, negation is interesting not only because of its unique position among the constants of classical logic as the one-place truth functional connective, but also for its complicated interaction with other logical operators such as quantifiers, tense and modals. For morphologists, the complex behavior of negation in word formation provides vital data and information on the constraints on this process. Semanticists and syntacticians are interested in ambiguity domains and the relation between the structural position of the negation and interpretation of the proposition. This chapter and the next chapter focus on the negative operator in general and on Persian negation in particular. In this chapter, I show how negation functions syntactically in different languages. I also outline various proposals on negation from the syntactic and semantic points of view. Then, I concentrate on the syntactic structure of negation in Persian and its interaction with other operators such as tense.

The chapter is organized as follows: Section 1 is devoted to the semantic and morpho-syntactic categorization of negation in general. In this section, I show negative forms in some typological distinct language: Romance (pro-drop), West Flemish (Germanic SOV), and Hindi and Urdu (Indo-Iranian SOV). In Section 3, I present different proposals concerning the syntactic category and the structural position of

negation. Section 4 is dedicated to the description of different tenses in Persian. In this section, I present a classification of Persian verbal complex forms. I propose that Persian past perfect and future tenses are instances of verbal complex predicates, and Persian progressive tenses are bi-clausal predicates. I also show that both verbal complex predicates and bi-clausal predicates are morpho-syntactically SVCs, but with some differences. In Section 5, I discuss the interaction of tense and negation in Persian. In Section 6, I address the question why Persian progressives do not have negative forms and I suggest that this gap in negative system of Persian tense is because of the semantic reasons, rather than morpho-syntactic factors. Finally, Section 7 concludes the chapter.

1. Morpho-Syntax of Negation Cross-Linguistically

Jespersen (1917) presents the NEG FIRST PRINCIPLE as a generalization about the morpho-syntactic position of the negative markers:

- 1) **Neg First Principle (Jespersen 1917)**
The strong tendency for negative markers is to gravitate leftward so as to precede the finite verb or other foci of negation.

Cross-linguistic observation shows that negation can occur in three positions with respect to the verb: A) *Pre-verbally*, B) *Post verbally* and C) *Simultaneously pre-verbal and post-verbal negative markers*.²⁹ In the next sub-sections, I present examples of each type.

²⁹ Negation can also be expressed by means of a negative constituent. West Flemish, for example, expresses also sentential negation by means of negative constituents such as *niemand* ‘nobody’ or *nooit* ‘never’ as illustrated in the following sentences:

i) a. da Valère niemand (en)-kent
 that V. nobody (not) knows
 ‘that Valère does not know any one’

1-1. Preverbal Negative Markers

Some Romance languages such as Italian, Spanish and Portuguese negate the clause by employing only a pre-verbal negative marker. This is illustrated in (2):

- 2) a. Gianni *non* ha telefonato a sua madre. (Italian)
 G. not has phone to his mother
 ‘John hasn’t called his mother.’
- b. Juan *no* ha llamado a su madre. (Spanish)
 J. not has phone to his mother
 ‘John hasn’t called his mother.’
- c. João *não* ligou para sua mãe. (Portuguese)
 J. not phone to his mother
 ‘Jon hasn’t called his mother.’

(Zanuttini 1997a:3)

Among Indo-Iranian languages, Hindi and Urdu– two scrambling languages with an SOV order– negate the clause by employing a pre-verbal negative marker *nahĩ*, illustrated for Hindi below:

- 3) a. larka lambā *nahĩ* hai.
 boy tall not is
 ‘The boy is not tall.’
- b. rām axbār *nahĩ* paṛhtā
 R. newspaper not reads
 ‘Ram does not read the newspaper.’

(Kachru 1980:109)

Kachru (1980:110) suggests that normally the entire predicate is interpreted in the scope of the negation. Thus, the meaning of (3a& b) would be (4a& b) respectively:

- 4) a. It is not the case that the boy is tall.

-
- b. da Valère nooit norus (en)-goat
 that V. never to house (not) goes
 ‘that Valère never goes home’

Haegeman (1995:128)

- b. It is not the case that Ram read the newspaper.

Butt (1995:47) shows that the sentential negative marker *nahĩĩ* is also preverbal in Urdu. This is illustrated in (5).

- 5) anjum haar *nahĩĩ* banaa rah-ii hai.
 Anjum.F=Nom necklace.M=Nom not make state-Perf.F.sg. be.Pres-3rdsg.
 ‘Anjum is not making a necklace.’

(Butt 1995:47)

1-2. Postverbal Negative Markers

The second possible morphological location of the sentential negative marker is post-verbal. The Romance language Occitan– spoken in the south-eastern part of France– negates the clause by employing only post-verbal negative markers, illustrated below:

- 6) a. Vól *pas* venire. (Occitan)
 wants neg to-come
 ‘He doesn’t want to come.’

(Zanuttini 1997:4)

1-3. Co-occurrence of Preverbal and Postverbal Negative Markers

The third morphological category of sentential negative markers is the co-occurrence of pre-verbal and post-verbal negative markers, as in some Romance languages. Standard French is a good example.

- 7) Je *n’*ai *pas* parlé de toi. (Standard French)
 I neg’have neg spoken of you.
 ‘I didn’t talk about you.’

(Zanuttini 1997:5)

Negation may also appear as a bound (morphological) or free (syntactic) form, as noted by Dahl (1979:83-4). 1) Bound negatives can realize as a portmanteau form and make a prosodic unit with the verb. Bound negatives are placed closer to the verb root than

other inflectional categories and exhibit morphophonemic alternations. Turkish and Berber negation are instances of this type, as shown by the following sentences.

- 8) a. John elmalar-i sev-me-di. (Turkey)
 J. apples-ACC like-NEG-Pst-3rdsg.
 ‘John does not like apples.’
- b. Ur-ad-y-xdel Mohand dudsha. (Berber)
 NEG-will-3rd MS-arrive M. tomorrow
 ‘Mohand will not arrive tomorrow.’
 (Ouhalla 1991:189, 9a, b)

In free or syntactic negation, the negative element is free and carries inflectional affixes and its own stress. Syntactic negation is phonologically a separate word. Negation in English can be considered as an instance of syntactic negation since *not* is a separate word, carries its own stress and movable but it does not carry inflectional affixes. However, the reduced negative clitic *n't* is an instance of bound or morphological negation.

We now turn to how negation behaves in the syntax in the next section.

2. Negation: Syntactic Structure

In this section, first I present different proposals on the syntactic category of negation then I discuss the structural position of NegP.

2-1. Negation as a Functional Head

Pollock (1989) suggests that functional elements such as agreement, negation, or tense serve as unique heads that project their own phrasal categories. Negation is thus represented as the head of NegP. NegP consists of a head (Neg^o) and a specifier.

Haegeman (1995:126) states: "...variation among languages is restricted to whether both or either of the two elements of NegP is realized lexically." ³⁰

English negation can take two negative forms: *not* and *n't*. *n't* is an overt realization of the head of NegP. Haegeman (1995:189) suggests that the movement of *n't* with the inflected auxiliary into I and C is a good evidence for the claim that *n't* is the head of the NegP. ³¹

Zanuttini (1996:192) adopts Haegeman's account of *n't*. She considers the negative marker *not* to be an adverbial element which can adjoin to, or may occur in the specifier position of, any maximal projections, thereby negates it. This correlates with the sentential versus constituent negation distinction.

A question of interest here is where NegP is located in the syntactic structure of the sentence. I address this question in the next section.

2-2. Negation: Structural Position

Horn (2000:7) suggests that the position of NegP is parameterized with respect to TP, since negation can be generated TP internally or TP externally in different languages.

Following Pollock (1989), Laka (1994:3) presents the Tense C-command Condition (henceforth TCC) which states:

³⁰ Since there is a Spec-Head relation in NegP, Haegeman, Rizzi and Zanuttini (1991) propose the NEG Criterion as presented in (i).

- i) NEG Criterion
- a. A NEG operator must be in a Spec-Head configuration with an X° [NEG].
 - b. An X° [NEG] must be in a Spec-Head configuration with a NEG operator.
- (Haegeman 1995:134)

³¹ Presumably a null Neg operator is in Spec-NegP to satisfy Neg Criterion.

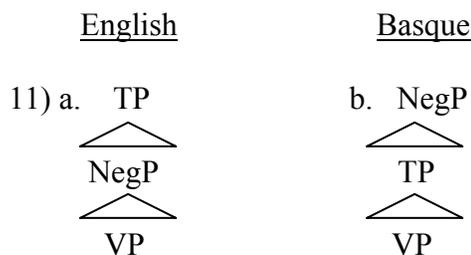
- 9) **Tense C-command Condition (Laka 1994:3)**
Tense must c-command at S-structure all propositional operators of the clause.

In other words, TCC implies that the presence of propositional operators such as negation depends on the presence of tense. Based on Laka's proposal we can categorize the position of negation in English and Basque. Consider the following sentence:

- 10) a. *extea ez da erori.*
house-the not has fallen
'The house hasn't fallen down.'
- b. The house hasn't fallen down.

(Laka 1994:17)

As (10b) shows, English negation attaches to the right of the auxiliary which is usually in T. Therefore, in English, negation is generated below TP (cf. Pollock 1989, Chomsky 1989), and automatically satisfies the TCC. In Basque, as illustrated in (10a), negation occurs to the left of the auxiliary, thus negation and INFL must merge together at some point of the derivation to satisfy the TCC. Laka proposes the following structures for the NegP internal and external Languages.



(Laka 1994:4)

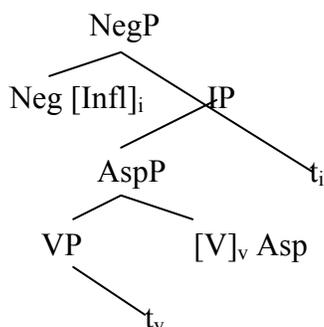
As (11b) in Basque shows NegP c-commands TP, which is a violation of the TCC. Laka (1994: 15, 25) suggests that the merging of negation and INFL results from raising of INFL to Neg. This movement satisfies the Head Movement Constraint:

12) **Head Movement Constraint (HMC)****An X may only move into a Y which properly governs it.**

(Chomsky 1986)

The INFL movement to the head of Neg is illustrated in diagram (4-1).

DIAGRAM (4-1)



(Laka 1994:16, 18)

Laka (1994:18-22) provides different pieces of evidence in favor of her claim about the position of NegP in English and Basque. The first piece of evidence comes from deletion. As (14) shows, it should be possible to delete TP in Basque, leaving NegP intact, but the same syntactic operation should be impossible in English, because NegP is nested in between TP and VP. Therefore– in the case of conjunction– induced deletion, where one conjunct is declarative and the other one is negative, different results should obtain in Basque and English. In Basque, it should be possible to delete the TP and leave only the NegP, which would not be recoverable, while in English TP could not be deleted without deleting with it the non-recoverable NegP. This is illustrated in (13).

13) a. * Mary bought a book and Peter not.

b. Marik liburua erosi du eta Peruk ez.

Mari book-the bought has and Peter not

‘Mary has bought the book and Peter has not.’

- c. Mary bought a book and Peter didn't.

(Laka 1994:19-20, 22, 23a, 25)

As (13a) shows it is impossible to delete TP in English, rather it is necessary to delete only VP and leave undeleted the supporting *do* in TP as well, as illustrated in (13c). In Basque, however, the exact correlate in (13b) is grammatical.

The second piece of evidence comes from Negative Polarity Items (henceforth NPI). English shows a subject-object asymmetry with respect to NPI licensing, in that sentential negation does not license subject NPI, but it does license object NPI. In Basque, on the other hand, since negation c-commands all arguments in TP, subject NPI is permitted. This is shown in the following sentences:

- 14) a. *Anybody didn't go to the party.
 b. John didn't know anybody at the party.
 c. ez da inor etorri.
 not has anybody come
 'Any body didn't come.'

(Laka 1994:21)

Based on the above discussion, Laka concludes that the NegP is generated above TP in Basque while it is generated below TP in English.

2-3. Summary

So far, I have discussed the morpho-syntax of negation operator. Cross-linguistically, I have shown the position of the negative element within the clause may vary. Then, I have discussed the structural position of the NegP, and have indicated the critical role of TP in determining the position of the NegP and its effect on the syntactic behavior of the Neg^o. In the next section, we will see how the negative operator functions in Persian.

3. Negation in Persian

In this section, first I discuss negative representations in Persian and negation's position with respect to the predicate. Then, I focus on the syntactic structure of Persian negation.

3-1. Persian Negative Marker

Persian negation is represented by the prefix *na-* at the beginning of the verbal stem in simple verbs and at the beginning of light verbs in complex predicates. This is illustrated in (15).

- 15) a. *na-xord-am*
not-ate-1stsg.
'I did not eat.'
- b. *zamin na-xord-am*
ground not-ate-1stsg.
Intended meaning: 'I did not fall down.'

ne-, as an allomorph of *na-*, substitutes for *na-* before the aspect marker *mi-* at the beginning of some Persian tenses. This is illustrated in following examples.

- 16) a. *ne-mi-r-e* (Simple present tense)
not-Dur-go-Prs.Stm-3rdsg.
- b. *ne-mi-raft* (Past imperfect tense)
not-Dur-go-Pst.Stm-3rdsg.

Based on the above data, we can conclude that Persian negation is a pre-verbal negative affix.

In the following section, we see where the negative marker *na-* is located in Persian syntactic structure.

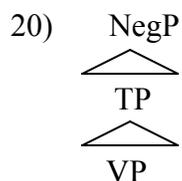
As (18b) shows, the future auxiliary *xâh* ‘want’ follows the negative marker *na-*. The morpho-syntactic structure of Persian formal future is interesting since in contrast to the formal present perfect and past perfect tense, the auxiliary—i.e., *xâh*— is in the left most, rather than right most in the verbal complex.

Furthermore, in contrast to English and similar to Basque, Persian does not show subject-object asymmetry with respect to NPI licensing. Sentential negation licenses both subject and object NPI in Persian. This is shown in the following sentences.

- 19) a. *hičkas Sârâ-ro mi-šenext.
 Any body S. -râ Dur-knew-3rdsg.
 * ‘Any body did know Sârâ.’ (Nobody knew Sârâ.)
- b. hičkas Sârâ-ro ne-mi-šenext.
 Any body S. -râ not-Dur-knew-3rdsg.
 ‘Nobody knew Sârâ.’
- c. Sârâ hičkas-o tu kelâs ne-mi-šenext.
 S. anybody-râ in class not-Dur-knew-3rdsg.
 ‘Sârâ did not know any body in the class.’

Based on the above discussion, we conclude that Persian NegP is above TP and VP.

This is illustrated in (20).



Laka’s TCC predicts that in Persian the tensed verb or auxiliary must raise to Neg, as it does in Basque.

Before discussing the interaction of different Persian tenses with negation, we have to describe the morpho-syntactic construction of different tenses in Persian. This is the topic of our discussion in the next section.

4. Tense and Aspect in Persian

Persian has rich morphology. Its morphological system includes several different affixes, which are productive for creating different forms or new words. The verbal system, which is the focus of this section, is one of the best examples of the richness of the morphology in this language.

Persian has both tense and aspect morphemes as illustrated in the following sentences.

- 21) a. Sârâ dars mi-xun-e.
S. lesson Dur-read-Prs.Stm-3rdsg.
'Sârâ is studying.'
- b. Sârâ dâr-e dars mi-xun-e.
S. have-3rdsg. lesson Dur-read-Prs.Stm-3rdsg.
'Sârâ is studying.'
- c. Sârâ dars xunde bud.
S. lesson read-Prt. be-Pst-3rdsg.
'Sârâ had studied.'
- d. Sârâ dars xâh-ad xund.
S. lesson want-3rdsg. read-Pst.Stm
'Sârâ will study.'

In (21a), *mi-* is the aspect marker and shows the duration of the event. In (21b) the auxiliary verb *dâr-e* 'have-3rd sg.' shows that the event is going on continuously. In (21c), the auxiliary *bud* 'was/were' refers to the completeness of an event in the past,

hence is an aspect morpheme. In (21d), the auxiliary *xâh* ‘want’ is the future tense morpheme.

In this section, I show how tense and aspect work in the Persian verbal system. I also argue that although there is a close relation between these two verbal categories in Persian, there are morpho-syntactic and semantic distinctions between them.

This section is organized as follows: Section 4-1 is devoted to the semantic and morpho-syntactic description of Persian tenses. In this section, first, I describe the morpho-syntactic construction of simple present/past tense, the past imperfect, and the present/ past perfect tense. Secondly, I highlight the common semantic features between simple present tense and past imperfect tense. Then, I discuss how this semantic similarity is represented morpho-syntactically. Finally, I describe the formal future tense. Section 4-3 is dedicated to the semantic and morpho-syntactic structure of the colloquial progressive in present and past tense. I argue that these tenses are instances of a specific kind of SVCs called Aspectual Complex Predicates. Finally, Section 4-4 concludes this section with a summary of the discussion presented in this section.

4-1. Persian Tenses: Morpho-syntactic and Semantic View

I start the discussion with the following examples in different tenses.

- 22) man in ketâb-o diruz xarid-am. (simple past tense)
 I this book-ACC yesterday buy-Pst.Stm-1st sg.
 ‘I bought this book yesterday.’
- 23) man emruz in ketâb-o mi-xar-am. (simple present tense)
 I today this book- ACC Dur-buy-Prs.Stm-1stsg.
 ‘I buy this book today.’

- 24) man har mâh ye ketâb mi-xarid-am. (past imperfect tense)
 I every month one book Dur-buy-Pst.Stm-1stsg.
 ‘I used to buy a book every month.’

As (24) shows the simple past tense is formed by the combination of past stem of the verb and the personal ending which is in this case the first person singular.

Semantically, simple past tense refers to any action which occurred in the past. The sentences in (23) and (24) also share the prefix *mi-*. The simple present tense in (23) contains the present stem of the verb while the past imperfect tense in (24) includes the past stem of the verb. Semantically, Persian present tense refers to an action which is happening at the present time habitually, or continuously. Similarly, the past imperfect either refers to a past habit, or an action which occurred continuously in the past. Thus, I suggest that *mi-* in these constructions is an imperfective aspect marker which shows the habituality or continuity of an action.

Now, consider the following sentences in present and past perfect tense.

- 25) a. Sârâ in ketâb-o xaride. (colloquial present perfect tense)
 S. this book-ACC bought-Pst.Prt-3rd sg
 ‘Sârâ has bought this book.’
- b. Sârâ in ketâb-o xaride ast. (formal present perfect)
 S. this book-ACC bought-Pst.Prt-3rd sg
 ‘Sârâ has bought this book.’
- 26) man in ketâb-o qablan xaride bud-am. (past perfect tense)
 I this movie-ACC before bought-Pst.Prt was-is-1st sg.
 ‘I had bought this book before.’

As (25a) shows, the Persian colloquial present perfect is composed of the past participle and the personal ending (third person singular), while the formal present perfect in (25b) includes the verb *ast* ‘be-3rdsg.’, the present tense of the auxiliary *budan* ‘to be.’

The Past perfect tense in (26) is formed by the past participle of the verb, the past tense of the auxiliary *budan* ‘to be’ and the first person singular subject agreement.³⁴ In Middle Farsi, *-ēstadan* appears in all persons in present perfect forms. In Dari, another variant of Modern Persian, *-ēstadan* is changed to *-astan* as illustrated in (27)

(Abolghasemi 1994: 177, 303).

27)	xord-e-ast-am	xord-e-ast-im
	xord-e-ast-i	xord-e-ast-id
	xord-e-ast	xord-e-ast-and

The past tense of *astan* is *budan* which appears in all persons in past perfect tense in both Middle and Modern Persian. Therefore, I suggest that *ast* and *bud* realize the tense feature. *ast* shows the present tense and *bud* marks the past tense in the environment of the perfect. This is similar to English *have/has* in present perfect tense and *had* in past perfect tense.

The next tense that I describe is future tense which is often used in formal contexts. In colloquial contexts simple present tense with a future adverb is usually used to refer to the future tense. Consider the following sentence in formal future tense.

28)	Sârâ daru-hâ-yaš râ	xâh-ad	xord.	(formal future tense)
	S. medicine-Pl.-her-ACC	want-3 rd sg.	eat-Pst.Stm	
	‘Sârâ will have her medicine.’			

As (28) shows, the verb *xâh* ‘want’ is used as an auxiliary verb for making the future tense in Persian, but, in fact, it functions like a main verb in Persian, and takes agreement while the main verb of the sentence is a bare infinitive.

³⁴ Historical evidence shows that *-ast* in the third person singular is the remnant of the verb *-astan*.

The next tenses are present and past progressive tenses which is discussed in the next sub-section.

4-2. Structure of Present and Past Progressive Tense in Persian

Present progressive tense is formed by the present stem of the auxiliary *dâštan* ‘to have,’ *dâr* and the simple present form (imperfective) of the main verb. This is illustrated in (29).

- 29) *dâr-am dars mi-xun-am.*
 have-1stsg. lesson Dur-read-Prs.Stm-1stsg.
 ‘I am studying.’

Past progressive tense is formed by the same process as the present progressive tense.

The only distinction is that the present stem of the auxiliary *dâštan* ‘to have,’ is replaced with the past stem *dâšt*. Furthermore, instead of the simple present tense of the main verb we have the past imperfective form of the main verb. This is shown in (30).

- 30) *dâšt-am dars mi-xund-am.*
 had-1stsg. lesson Dur-read-Pst.Stm-1stsg.
 ‘I was studying.’

As (29) and (30) show, the interesting feature of Persian colloquial present and past progressive is that both *dâr/dâšt* and the main verb receive agreement marking.

Semantically, *dâr* and *dâšt* in present and past progressive tense express the duration of the activity. Thus they have an aspectual function in present and past progressive tense. On the other hand, as the construction of present and past progressive tense show, both simple present imperfective tense and past imperfect are used in these complex tenses. Simple present and past imperfect tense include the notion of duration which is encoded by the aspect marker *mi-*. Thus the structure of Persian progressive

seems to include two representations of continuity. Semantically, continuity and habituality are the most common sub-senses of the imperfective, and continuity is the starting point for the imperfective (see Holger 2004:126). Thus, based on the semantic fact, the co-occurrence of the progressive light verbs *dâştan* ‘to have’ in present and past progressive with both present imperfective tense and past imperfect—as the main verbs—is not a coincidence, since the progressive and habitual are the most common sub-senses of imperfective, and progressive is the starting point for the imperfective (Bybee et al. 1994:141).

Morpho-syntactically, as (29) and (30) show, the structure of these complex tenses is $\underline{V}_1 \underline{NP} \underline{V}_2$. Both V_1 and V_2 take the subject agreement and they share a single object. The structure look like a bi-clausal construction but neither a complementizer nor a conjunction separates the two verbs, and the construction refers to a single conceptual event. Therefore, they behave like a Serial Verb Construction (henceforth SVC). But the main difference between these constructions and the SVC is that— as we will see in Section 5— the latter has a negative form while the former do not. This is illustrated in (31), (32).

- 31) a. *man na-dâšt-am mi-raft-am.
 I not-had-1stsg. Dur-go-Pst.Stm-1stsg.
 ‘I was not going.’
- b. *man na-dâr-am mi-r-am.
 I not-have-1stsg. Dur-go-1stsg.
 ‘I am not going.’
- 32) a. *man dâšt-am ne-mi-raft-am.
 I had-1stsg. not-Dur-go-Pst.Stm-1stsg.
 ‘I was not going.’

- b. *man dâr-am ne- mi-r-am.
 I have-1stsg. not-Dur-go-1stsg.
 ‘I am not going.’

A question of interest here is what are SVCs? I address this question in the next subsection.

4-3. Serial Verb Constructions (SVCs): An Over view

Butt (1995:222) describes the SVC as follows: “Serial verbs are verbal constructions which can stack several events in a single clause.” She suggests that each member of an SVC may display agreement features as illustrated in (33)³⁵.

- 33) iire rehe-sooni vakilii rehe-haa
 1stpl.Incl 1stpl.Incl-distant.throw canoe 1st pl.Incl-distant.go
 ‘We will go, putting (throwing) our canoe to sea.’

(Butt 1995:222, 44b)

Butt (1995:224) presents the following general characteristics for SVCs (p. 224):

- 1) A single SVC complex describes a single conceptual event.
- 2) SVCs share at least one and possibly more arguments.
- 3) One verb is not embedded within a complement of the other.
- 4) Intonational properties of a clause with serialization are those of a mono-verbal clause.
- 5) The complex takes only one subject or external argument.
- 6) There is a diachronic tendency to lexicalization and grammaticalization of the meaning of the serial complex. This can involve treating the whole serial complex as a single lexicalized item, or ‘demotion’ of the meaning and grammatical status of one of the verbs to that of a modifier or case marker.

³⁵ Butt (1995) refers to these SVCs as complex predicate constructions but they are not the same as true Persian complex predicates.

Butt (1995:225) claims that in SVCs, one predicate is not subcategorized for by the other predicate. Rather, the verbs are gathered into a complex predicate under certain circumstances.

Sabba (1987:2) suggests that SVCs refer to a surface string of verbs within a single clause. Christaller (1875: 69-73) distinguished two types of combinations in SVC: 1) Essential combinations, in which one verb is the principal verb and the other is an auxiliary verb, and 2) Accidental combinations, in which two or more predicates expressing different successive actions or states simultaneously.

Based on the given characteristics, a question of interest is if Persian has SVCs? If it has, among Persian tenses which of them are SVCs? In the next section, I address these questions after presenting Persian complex verbal forms and their morpho-syntactic properties.

4-4. Persian Complex Verbal Forms and SVC

I categorize Persian complex verbal forms into three categories: 1) Complex Predicates, 2) Verbal Complex Predicates (henceforth VCPr), and 3) Bi-clausal Predicates (henceforth Bc-Pr). Now consider the morphosyntactic properties of each category.

4-4-1. Complex Predicates (CPr)

As FHK (2005) shows, this group is formed of an NV element and an LV. NV element includes: 1) nominal, 2) adjectival, 3) particle and 4) prepositional. Each class is illustrated as below:

- 34) a. d'avat kardan NV= nominal
 invitation doing
 'to invite'
- b. tamiz kardan NV= adjectival
 clean doing
 'to clean'
- c. bâlâ bordan NV= particle
 up taking
 'to increase/raise'
- d. be yâd âvardan NV= prepositional
 to memory bringing
 'to remember'

The main properties of Persian complex predicates are that the NV and LV can be separated by the negative markers *na/ne* and the pronominal clitics *eš/aš*, and the LV receives the subject agreement. This is illustrated in (35a-d).

- 35) a. da'vat-eš na-kard-am
 invitation-his/her not-do-1stsg
 'I did not invite him.'
- b. tamiz-eš na-kard-am.
 clean-its not-do-1stsg.
 'I did not clean it.'
- c. dowlat qeymat-ha-ro bâlâ na-bord.
 government price-pl.Acc up not-take-1stsg.
 'The government did not increase the prices.'
- d. be yâd-eš na-bord-am.
 to memory-his/her not-take-1stsg.
 'I did not remember him.'

4-4-2. Verbal Complex Predicates (VCPr)

These verbal constructions make past perfect³⁶ and formal future tenses and divides into two classes: 1) AdjP (past participle) + V_{aux} (*budan* ‘to be’), and 2) V_{aux} (*xâstan* ‘want’) + V. These two VCPrs exemplified as follows:

- 36) a. *xunde bud-am*
 read-Prt be-Pst-1stsg.
 ‘I had read’
- b. *xâh-am xund*
 want-1stsg. read-Pst.Stm
 ‘I will read’

The main properties of the VCPrs are that the negative marker and pronominal clitics cannot appear between the two parts of these complex constructions and V_{aux} receives the subject agreement. The main distinction between these two VCPrs predicates is the order of the V_{aux}. The auxiliary is in the right most in the past perfect tense while it is in the left most of the future tense.

4-4-3. Bi-Clausal Predicates (BCPr)

This form is a combination of two verbs that one of them is auxiliary (V_{aux}) and the other one is the main verb either in simple present or past imperfective tense. Persian present and past progressive tenses are instances of BCPrs. As illustrated in (37), the two verbs of the constructions can be separated by an NP. However, as I noted before these BCPrs do not have direct negative forms.

- 37) a. *dâr-am [NP_{ye} še’r az Hafiz] mi-xun-am.*
 have-1stsg. a poem of H. Dur-read-Prs.Stm-1stsg.
 ‘I am reading a poem of Hafiz.’

³⁶ It is worth noting that the third person singular of the present perfect tense-e.g. *xunde ast* ‘read-Prt. be-3rdsg.’ is also the verbal complex construction.

- b. dâšt-am [NPYE še'r az Hafiz] mi-xund-am.
 had-1stsg. a poem of H. Dur-read-Pst.Stm-1stsg.
 'I was reading a poem of Hafiz.'

A question arises here is that which of the above verbal complex forms are instances of SVCs? Based on the SVC properties given in Section (4-3), the only candidates are VCPrs in future tense (V_{aux} (*xâstan* 'want') -V) and BCPrs in present and past progressives (V_{aux} (*dâstan* 'to have') DP-V). Consider the following sentences.

- 38) a. man in ketâb-ro xâh-am xând. (VCPrs)
 I this book-Acc want-1stsg. read-Pst.Stm
 'I will read the book.'
- b. man dâr-am ketâb mi-xun-am. (BCPrs)
 I have-1stsg. book Dur-read-Prs.Stm-1stsg.
 'I am reading a book.'
- c. man dâšt-am ketâb mi-xund-am. (BCPrs)
 I had-1stsg. book Dur-read-Pst.Stm-1stsg.
 'I was reading a book.'

As (38) shows, in both cases the auxiliary verbs are in the left most of the complex. However, in the case of the VCPrs, only the auxiliary receives the subject agreement while in BCPrs both the auxiliary and the main verb receive the subject agreement. In these constructions, there are also series of the verbs in a single clause, and the verbs share a single subject. Semantically, the sentences describe a single conceptual event. Furthermore, there is not any complementizer, coordinator, or conjunction between these two verbs in BCPrs. Therefore, I propose that the VCPrs in future tense and BCPrs in the present and past progressives are instances of SVCs.

There is a similar construction in Urdu (see Butt 1995). This is illustrated in the following sentence.

- 39) naadyaa kat lik^h rah-ii hai
 N.F=Nom letter.M-ACC write stay.F.sg be-Pres.3rdsg.
 ‘Nadya is writing a letter.’

(Butt 1995:102, 23)

Butt (1995:102) explains that in this sentence *rah* ‘stay’ makes no semantic contribution other than aspectually, and its only function is the expression of stativity. She notes that these constructions do not have any negative forms and the aspectual verb is always inflected. She calls these constructions Aspectual Complex Predicate.

Back to Persian! The auxiliary verb *dâštan* in the Persian progressive tense has an aspectual function, since it shows the continuity of the event. Therefore, following Butt (1995), I propose that Persian progressive present and past tenses are instances of Aspectual Complex Predicates, and these complex predicates have many common features with SVCs. However, in contrast to SVCs, they do not have negative forms and V_1 has an aspectual function. Consider the following sentences.

- 40) a. *man na-dâr-am ketâb mi-xun-am.
 I not-have-1stsg. book Dur-read-Prs.Stm-1stsg.
 ‘I am not reading a book.’
- b. *man na-dâšt-am ketâb mi-xund-am.
 I not-had-1stsg. book Dur-read-Pst.Stm-1stsg.
 ‘I was not reading a book.’
- 41) a. *man dâr-am ketâb ne-mi-xun-am.
 I have-1stsg. book not-Dur-read-Prs.Stm-1stsg.
 ‘I am not reading a book.’
- b. *man dâšt-am ketâb ne-mi-xund-am.
 I had-1stsg. book not-Dur-read-Pst.Stm-1stsg.
 ‘I was not reading a book.’

4-5. Summary

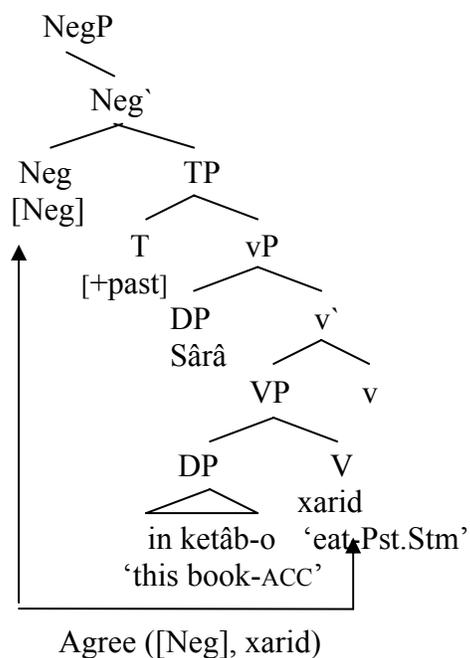
In this section, I have presented the morpho-syntactic construction of Persian tenses. I have also categorized the Persian verbal complex forms into three main categories: CPrs, VCPrs (e.g. past perfect and future tenses) and BCPrs in present and past progressives. I have suggested that the VCPrs and BCPrs are SVCs. However, present and past progressive tenses are instances of Aspectual Complex Predicates, a specific kind of SVC. I have also discussed the semantic interpretation of simple present tense and past imperfect tense in Persian and I have indicated that *mi-* is a durative aspect marker, which shows the habituality or continuity in these tenses. I discuss the interaction of each tense in Persian with negation in the next section.

5. The Interaction of Negation and Tense in Persian

In this section, I show the distribution of the negative marker *na-* and *ne-* inside the clause. I start the discussion with the sentence (43) in simple past tense and its syntactic structure in diagram (4-2).

- 42) Sârâ in ketâb-o *na-xarid*. (Simple past tense)
 S. this book-ACC not-buy-Pst.Stm-1stsg.
 ‘Sârâ didn’t buy the book.’

DIAGRAM (4-2)

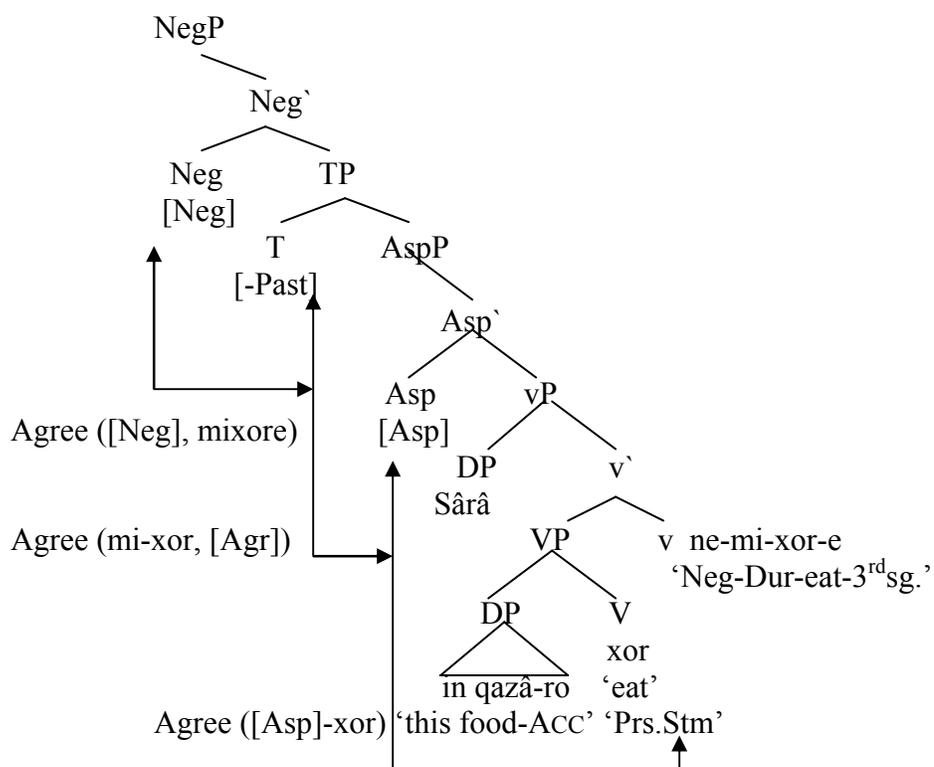


The critical point of the structure in diagram (4-2) is that Persian vP is head final and NegP is head initial. Although Persian is a head final language, the functional projections like TP and CP are head initial in this language. Since NegP is a functional projection and its position parameterized with respect to TP (Horn 2000), I suggest that NegP-like TP- is head initial. A question of interest is how the negative marker *na-* attaches to the left of the verb around the intervening object. Based on Chomsky (2001, 2004), I suggest that a negative feature on the verb is matched via an Agree relation with the higher *na-* morpheme realizes the checked [Neg] feature with the verb. In fact, following Chomsky (1995), I claim that v includes [+ negation] feature that the prefix *na-* realizes.

Now, consider the negative form of the simple present tense in (43) and its structure in diagram (4-3).

- 43) Sârâ in qazâ-ro *ne-mi-xor-e*. (Simple present tense)
 S. this food-ACC not-Dur-eat-Prs.Stm-1st Sg.
 ‘Sârâ doesn’t eat the food.’

DIAGRAM (4-3)



Persian subject-verb agreement occurs in T via Agree operation of the feature [Agr]. In the case of *mi-* which appears in Persian simple present and past imperfect tense, in Section 4-1, I suggested that *mi-* is an aspect marker, since Persian simple present tense refers to the habitual action happening at the present time, and past imperfect tense shows the habitual action in the past. I therefore suggest that *mi-* appears in the head of the functional projection AspP.

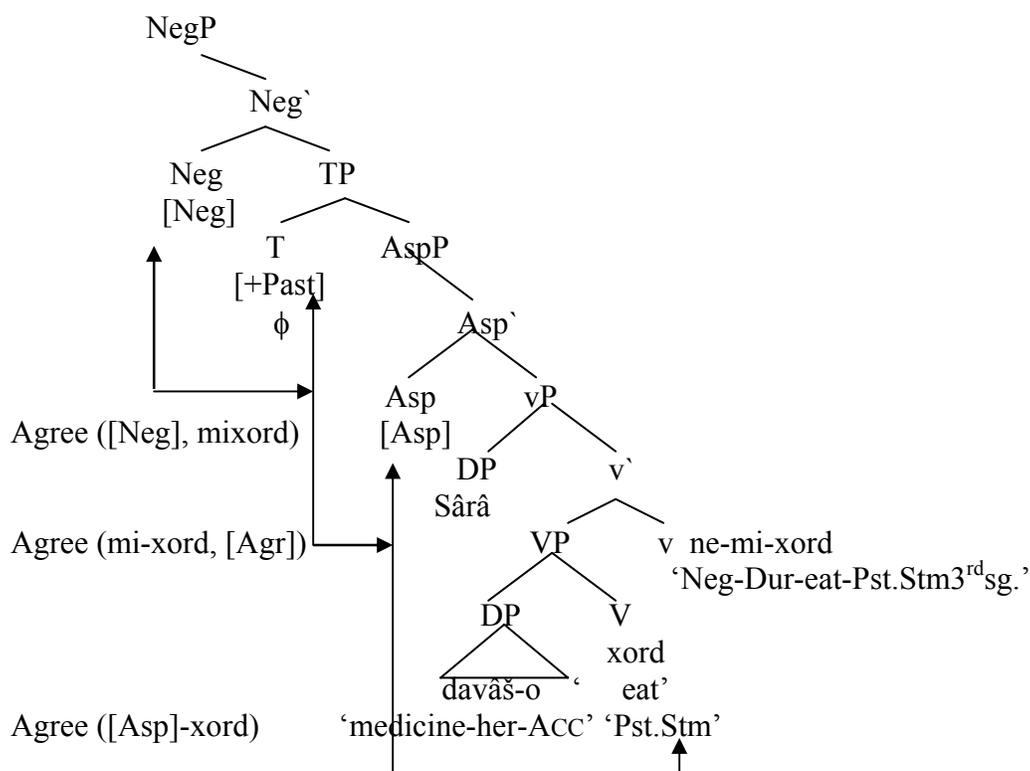
In diagram (4-3), we have different cycles of feature matching which are outlined as follows: The present stem of the verb *xor* 'eat-Prs.Stm.' matches the aspect

feature [Asp] then the construction resulting from the first feature matching ([Asp]-V) matches with the subject agreement in T°. The last feature that must be matched is the [neg] feature and finally the whole feature complex is realized as *ne-mi-xor-e* ‘not Dur-eat-Prs.Stm- 3rd sg.’ in v°.

The structure of the past imperfect is similar to the simple present tense with the distinction that in the past imperfect, the verb is the past stem rather than the present stem. Consider the following sentence in the past imperfect and its structure in (44).

- 44) Sârâ davâ-š-o *ne-mi-xord.* (Past imperfect tense)
 S. medicine-her-ACC not-Dur-eat-Pst.Stm-3rd.sg.
 ‘Sârâ was not taking her medicine.’

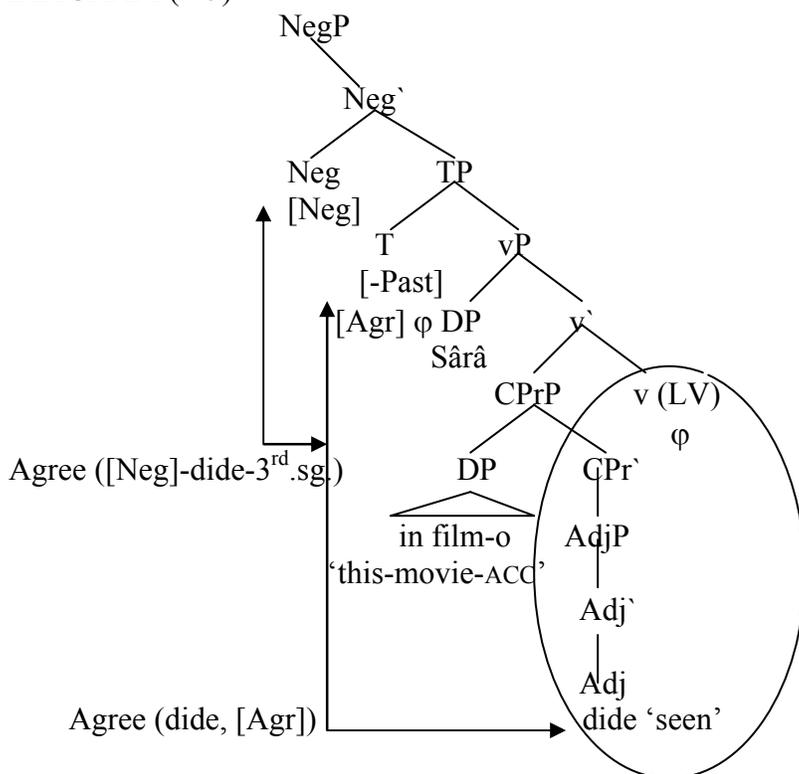
DIAGRAM (4-4)



In (45), we see an example of colloquial Persian present perfect tense which is followed by its syntactic structure in diagram (4-5).

- 45) Sârâ in film-o *na-did-e*. (Present perfect tense)
 S. this movie-ACC not eat-Prt-3rdsg.
 ‘Sârâ has not seen the movie.’

DIAGRAM (4-5)



In the Persian present perfect tense, we have a VCPr composed of an adjective, which is a past participle, and the light verb, which is the auxiliary *budan* ‘to be’ in the present tense (i.e., *-ast* ‘is’). In colloquial present perfect, the light verb is omitted. The critical point of morpho-syntactic structure of the negative present perfect and past perfect is that in true complex predicate the negative marker is prefixed to the LV at v^0 , while in these complex predicates the verb raise to v^0 but the negative marker *ne-* is prefixed to

the participle (Adj) in V^o not to the LV (v), i.e., *-ast/bud*.³⁷ Moreover, as I noted in Section 4-4, in true Persian complex predicates the object clitics appear between NV elements and LV, while they cannot appear between the participle and the auxiliary as an LV. This is illustrated in (46).

- 46) a. Sârâ-ro be in konferâns da'vat-eš kard-an.
 S.-Acc to this conference invitation-her do-Pst-3rdpl.
 'Sârâ was invited to the conference.'
- b. * Sârâ be in konferâns na-rafte-eš bud.
 S. to this conference Neg-go-Prt-her be-Pst-3rdsg.

Thus, the complex forms in formal present perfect and past perfect tenses are different from the true complex predicates morpho-syntactically. The process of feature matching in (46) is outlined as follows:

The first process of feature-matching is between the VCP_r and the subject-verb agreement, which is empty in third person singular. Then feature-matching is between the structures resulted from the first feature-matching (i.e., CPr-3rdsg.) with the head of NegP.

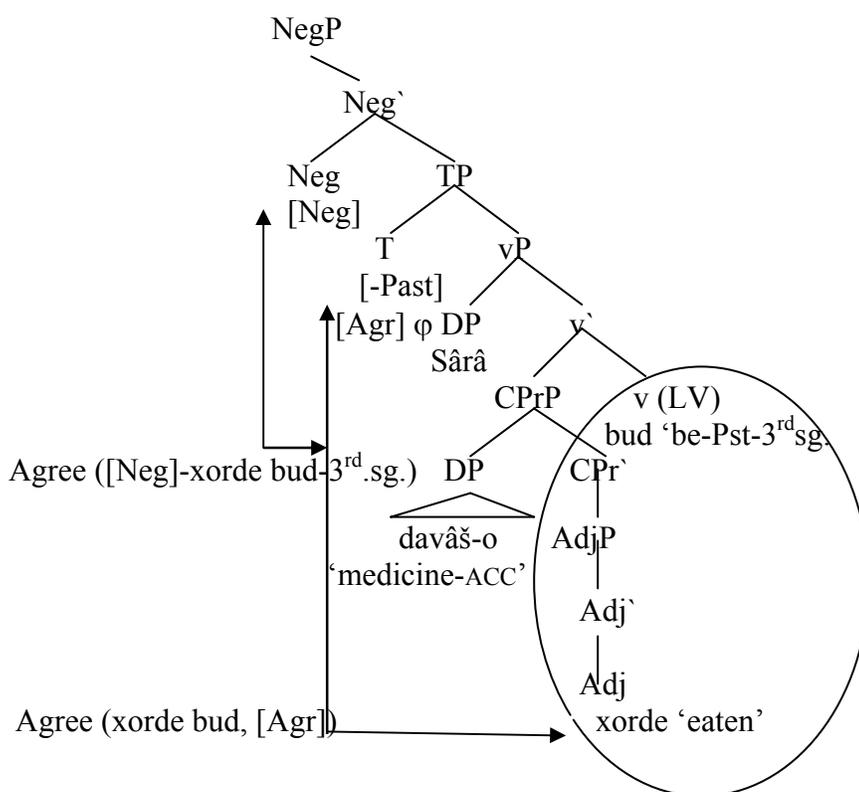
The structure of the Persian past perfect in the negative forms is similar to the negative present perfect tense with the difference that the LV is filled with *bud* 'be-Pst'. This is illustrated in (47).

- 47) Sârâ- davâš-o na-xord-e bud. (Past perfect tense)
 S. medicine-ACC not eat-Prt be-Pst-3rdsg.
 'Sârâ hadn't eaten her medicine.'

³⁷ It is worth noting that the first language acquisition observation shows that when Persian children wants to learn the negative form of the present or past perfect, first they put negative markers *ne/na* before the auxiliary *ast/bud* 'is/was' and follow the rule of negative form of true complex predicates.

The detailed structure of (47) shown in diagram (4-6), illustrates that after feature-matching between the complex predicate *xorde bud* ‘eaten was’ and the subject-verb agreement, which is the third person singular, the resulting structure matches with the negation [Neg] and produces the final form *na-xorde bud* ‘not-eaten-be-Pst-3rdsg.’

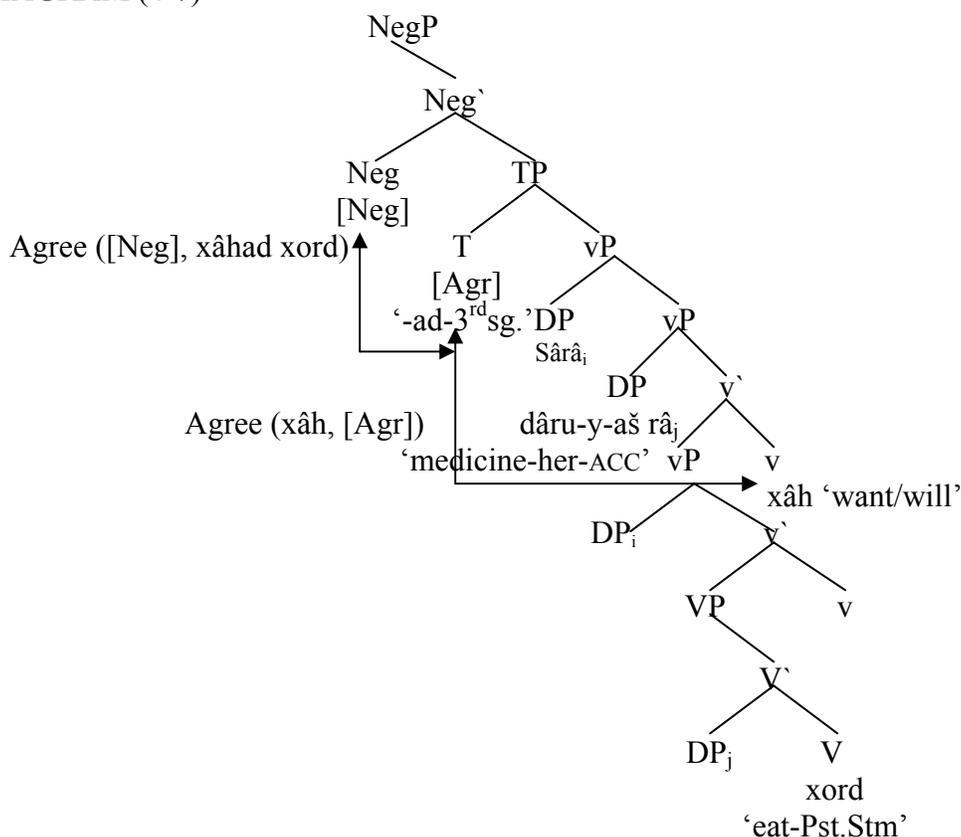
DIAGRAM (4-6)



In the case of the Persian future tense— as I noted in Section 4-3— there is an auxiliary verb *xâh* ‘want/will’ which receives the subject-verb agreement and the negative marker *na-*. This is illustrated in sentence (48) and its structure is shown in diagram (4-7).

- 48) Sârâ daru-hây-aš râ na-xâh-ad xord. (Future tense: formal)
 S. medicine-her-ACC not want-3rdsg. eat-Pst.Stm
 ‘Sârâ will not eat her medicine.’

DIAGRAM (4-7)



The structure of the formal future tense in Persian is different from other tenses that I have shown so far. These are another form of complex predicates that I called them VCPrs. In contrast to the past perfect tense, the auxiliary— i.e., *xâh* 'want/will'— precedes the main verb which is in the form of bare infinitive and the auxiliary receives the agreement. Moreover, in this complex verbal form the auxiliary does not raise to v^0 . In fact, it is generated in v^0 .

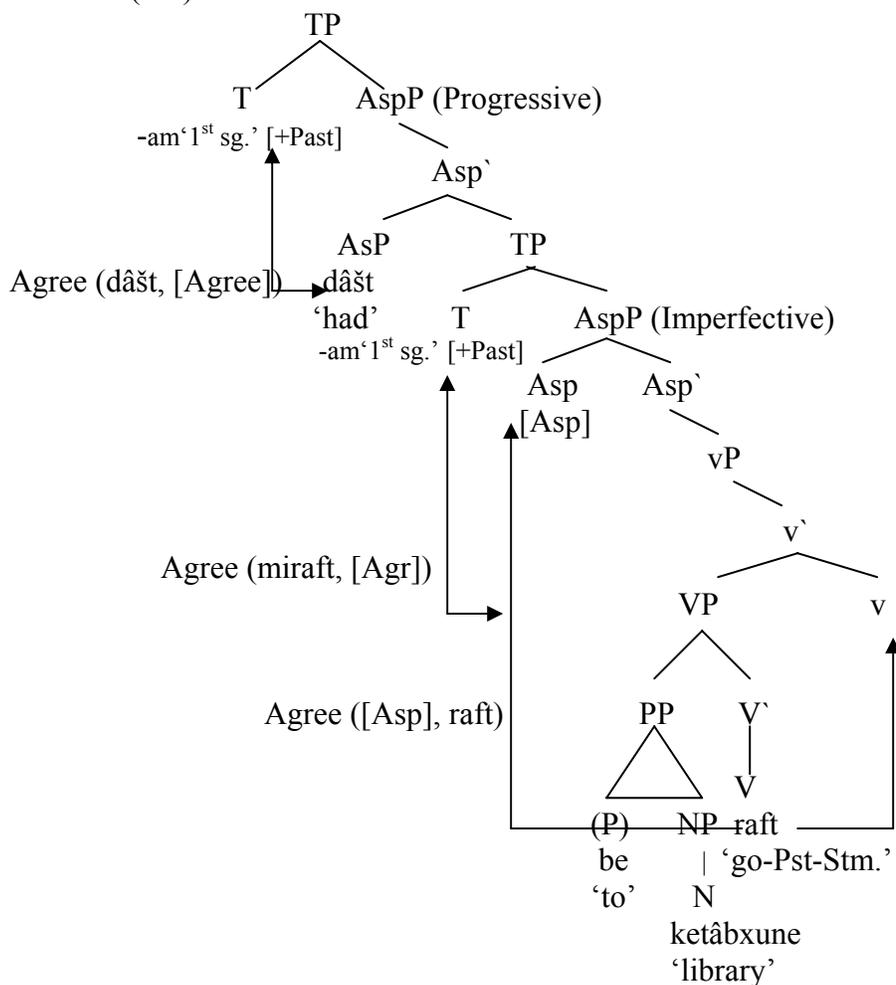
The matching features is outlined as follows: First, the auxiliary *xâh* 'want/will' matches with the agreement features in T^0 and makes the form *xâh-ad* 'want/will-3rdsg.'. Then the resulting form *xâhad* matches with the negation feature [neg] and makes *na-xâh-ad*. The main verb is in its past stem form and there is no feature

matching with the main verb. At PF the structure resulting from the feature matching attaches to the stem and makes the final form *na-xâh-ad xord*.

Now consider the present and past progressive tense, recalling that they do not have a direct negative form. As we saw in Section 4-3, these tenses in Persian are instances of Aspectual Complex Predicates, and they have many common features with SVCs in other languages. But in contrast to SVCs, however, they do not have negative forms and V_1 has the aspectual function. Therefore, I suggest the structure in diagram (4-8) for the past progressive tense in sentence (49).

- 49) dâš-tam mi-raft-am (be) ketâbxune.
 had-1stsg. Dur-go-Pst-Stm.1stsg. to library
 ‘I was going to the library.’

DIAGRAM (4-8)



As the structure in diagram (4-8) shows, we have the same process of feature matching that we had in other Persian tenses. First, the past stem of the lower verb matches with the feature of the aspectual prefix *mi*-[Asp], then the resulting structure matches with the subject agreement *-am* '1st sg.' [Agr]. The auxiliary, on the other hand, raises to T receiving the agreement features directly. The treatment of the main verb as reflecting an Agree relation with independent functional heads allows for the peculiar double expression of these syntactic aspectual elements in this construction.

The structure of the present progressive tense is similar to the past progressive tense with the difference that we have a present stem instead of a past stem in the present progressive tense.

Critical to our discussion is why Persian progressives, as instances of Aspectual Complex Predicate, do not have negative forms. Is there any semantic reason for the lack of negation in these constructions or does this originate from morpho-syntactic factors? These questions are addressed in the next section.

6. Aspectual Complex Predicates and Negation

As I noted in the last section, Urdu also has Aspectual Complex Predicates which they do not have negative forms (Butt 1995:103). Butt asserts that Singh (1990) is the only work which offers a coherent account of these facts. (p.126) In this section, first I present an overview of Singh's (1990) proposal on the lack of negation in Aspectual Complex Predicates in Hindi, then I check her proposals against the Persian present and past progressive.

6-1. Negation in Aspectual Complex Predicates: An Overview

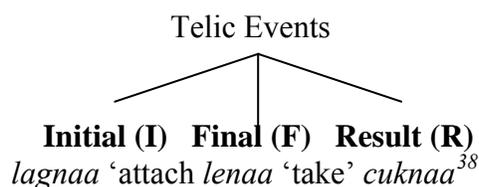
Singh (1990: 260) defines the compound verbs in Hindi as a constellation of verbs that have the form [verb₁ + verb₂], in which verb₂ loses its independent meaning to a large extent. Verb₁ is referred to as the Main verb or MV and verb₂ is referred to as the Explicator verb or EV. Consider the following examples taken from Sing (1990:260).

- 50) a. dekh-a simple verb
 see-Prf

- b. *dekh li-ya* compound verb
see take (EV) Prf

Singh proposes that Compound Verbs (henceforth CVs) are not related to viewpoint aspect instead CVs are markers of telicity. She suggests that all non-progressive achievements and accomplishments (i.e., telic events) have a CV constellation that focuses on one of the three potential subevents described in diagram (4-9). Different explicator verbs can be used to focus on different stages of a telic event. (p.262)

DIAGRAM (4-9)



Singh (1990:263) following Smith (1990), presents the following temporal schema for accomplishment events.

51) I...F_N (R)

In (51), **I** is the initial endpoint of the event **F_N** its natural final endpoint and **R** its resultant state. Singh suggests that CVs cannot be used to refer to an arbitrary endpoint with an inherent telic verb in Hindi. Consider the following sentences with perfective CVs.

52) a. *laRke-ne tasviir banaaii lekin nahī̄ banii*
boy-ERG picture make-Prf but Neg become-Prf
‘The boy made a picture but it wasn’t made.’

³⁸ Singh (1990:270, ft.4) notes that not all EVs can be used as independent verbs, e.g., *lagnaa*, and *cuknaa* do not occur as independent verbs. The gloss given here for these verbs is an approximation at best.

- b. laRke-ne tasviir banaane legaa lekin nahīī banīī
 boy-ERG picture make-EV(I)-Prf but Neg become-Prf
 ‘The boy started to make a picture but it wasn’t made.’
- c. *laRke-ne tasviir banaa diī lekin nahīī banīī
 boy-ERG picture make-EV(F)-Prf but Neg become-Prf
 ‘The boy made a picture but it wasn’t made.’
- d. *laRke-ne tasviir banaa cukaa lekin nahīī banīī
 boy-ERG picture make-EV(R)-Prf but Neg become-Prf
 ‘The boy made a picture but it wasn’t made.’

In (52a), the event type associated with the act of making a picture is telic, but since the picture was not completed, the perfective form of a simple verb is used. In the sentences (52b-d), the subordinate clause is negated and the main clauses have the perfective form of a CV. As seen in (52c, d), an EV(F) or an EV(R) is ungrammatical when intended to express that a telic event was not completed. Singh explains that these CVs do not occur in negative sentences since EVs are markers of telic situation types. Because EVs are used to focus on an inherent endpoint, the use of negation is not felicitous. Consider the following sentences.

- 53) *usne tasviir nahīī banaa diī
 she picture Neg make EV(F)-Prf
 ‘She did not make the picture.’

(Singh 1990:264, 17)

As Singh explains, in using the negative with an accomplishment the speaker could mean either (p.265)

- i) She did not start making the picture, or
 j) She started making the picture but it was not completed

Both (i) and (j) can be shown on the temporal schema of accomplishment as follows:

- 54) i...I...j...F_N (R)

As mentioned before, a CV construction in Hindi can be used only when the point of reference coincides with one of **I**, **F_N** or **R**, however, as (54) shows, the points **i** and **j**, which indicate the negated accomplishment, lie before **I** and **F**.

In the case of the temporal schema of statives, Singh, following Smith (1990), suggests the following:

55) (I)...(F)

In (55), the initial endpoint denotes change into the state and the final endpoint denotes the change out of it. States do not occur in the perfective form. Since there is no endpoint for a state, CVs cannot co-occur with them. The consequence of the interaction of CVs with states is the coercion to an eventive change of state reading, caused by the endpoints becoming visible. As a result of the event becoming telic they must be expressed in the perfective or progressive viewpoint. Therefore, progressive CV contexts proved telicity when the embedded predicate is stative. The CVs with stative verbs indicate a change of state. (p.268)

We will see how Singh's proposal works in Persian progressives in the next subsection.

6-2. Negation in Persian Present and Past Progressive Tense

There is a main distinction between Hindi CVs and Persian progressive Aspectual Complex Predicates. As in Section 4-1, the present progressive is composed of the present tense of the verb *dâštan* 'to have' and the present tense of the main verb. Past progressive contains the past tense of the verb *dâštan* and the past imperfective of

the main verb. Both *dâštan* and the main verb receive subject agreement. Consider sentences (29) and (30), repeated in (56) and (57).

56) dâr-am dars mi-xun-am.
have-1stsg. lesson Dur-read-Prs.Stm-1stsg.
'I am studying.'

57) dâšt-am dars mi-xund-am.
had-1stsg. lesson Dur-read-Pst.Stm-1stsg.
'I was studying.'

The verb *dâštan* is stative in light and heavy forms. Thus, if we assume that the verb *dâštan* is similar to EVs in Singh's proposal then the main difference between Hindi EVs and Persian EVs is that the former focuses on the final endpoint (F) while the latter concentrates on the process subevent– the middle position of the event without reference to either beginning or end points Initial endpoint. Moreover, both present tense and past imperfective show continuity and habituality at the present and past tense, Therefore, in contrast to Hindi CVs, Persian progressives follow the temporal schema presented in (51), repeated in (58).

58) (I)...(F)

Based on the specific properties of Persian progressive tenses, I present the following hypotheses regarding the lack of negative form of these tenses:

- If the present and past progressive tenses have negative form, the negation *na-* should either attach to the stative verb *dâštan*, as illustrated in (59a, 60a), or to the main verb, as shown in (59b, 60b).

59) a. *na-dâr-am dars mi-xun-am
not-have-1st.sg. lesson Dur-read-Prs.Stm-1st.sg.
'I am not studying'

- b. *dâr-am dars ne-mi-xun-am
not-have-1st.sg. lesson not-Dur-read-Prs.Stm-1st.sg.
'I am not studying'
- 60) a. na-dâšt-am dars mi-xun-am
not-had-1st.sg. lesson Dur-read-Prs.Stm-1st.sg.
'I was not studying'
- b. *dâšt-am dars ne-mi-xun-am
not-had-1st.sg. lesson not-Dur-read-Prs.Stm-1st.sg.
'I was not studying'

In using negative with the stative *dâštan* in (59a&60a), we could mean:

- i) She did not start studying.

In using negative with the main verbs in (59b&60b), we could mean:

- j) She started studying but it was not completed.

On either of tense interpretations, negated events are either the initial or final endpoints.

However, progressive tense constructions do not have clear initial and final endpoints.

As discussed above, the use of negation is possible in these tenses. Therefore, we

conclude that lacking direct negative forms in Persian present and past progressives

tenses originate from semantic reasons rather than morpho-syntactic factors. A question

of interest is what are these semantic reasons? I will open this question for further

research.

7. Conclusion

In the first part of this chapter, I have shown the morpho-syntactic

categorization of negation in general and Persian in particular. I have indicated that

Persian negation is a morphological negation which is represented pre-verbally.

Syntactically, Persian sentential negation is a functional head of NegP and c-commands TP.

In the second part of this chapter, I have presented a description of Persian tenses. Then I have concentrated on syntactic interaction of different Persian tenses with negation. In this part, I have also classified complex verbal forms in Persian into three main groups: Complex Predicates (CPrs), 2) Verbal Complex Predicates (VCPrs), and 3) Bi-clausal Predicates (BCPrs). After highlighting the morpho-syntactic properties of each group, I have shown that Persian future tense, as a VCPrs, and Persian progressive tenses, as the BCPrs, are instances of SVCs. Persian progressives, however, are a specific kind of SVCs called Aspectual Complex Predicates. SVCs are verbal constructions which can stack several events in a single clause and share at least one and possibly more arguments. The complex takes only one subject or external argument. However, Aspectual Complex Predicates are those complex predicates in which one of the verbs in the complex makes no semantic contribution other than aspect, and its only function is the expression of stativity.

Semantically, I have explained that the co-occurrence of progressive tense with simple present and past imperfect tense is not coincidental, and Persian progressive refers to the continuity and imperfectiveness.

I have also indicated that the reason why Persian progressives do not have direct negation is not related to morpho-syntactic structures of these tenses. Rather, the semantic factors may involve.

In the next chapter, I show how negation interacts with Persian modals and how this interaction affects on the interpretation of propositions.

CHAPTER 5

INTERACTION OF MODALITY AND NEGATION

Introduction

In this chapter, I will discuss the interaction of negation with modality in general and in Persian in particular. We will see how different languages show the interaction of these two operators. In some languages like English, Finnish, German and Dutch different scope interpretations are expressed by means of different modals and in some languages like Romance languages such as French and Italian different scope interpretations are expressed by means of the negation itself (cf. De Haan 2004). By presenting different piece of evidence, I will show that Persian is categorized among those languages where the negation itself expresses different scope interpretations in the interaction with modals.

The chapter is organized as follows: In Section 1, I discuss two basic strategies in the interaction of modality and negation, and I show how different languages are categorized based on these two strategies. In Section 2, by presenting different data on the interaction of Persian modals and negation, I show which strategy Persian modals correspond to. Section 3 is devoted to the structural analysis of the interaction of negation with modals and I will show that the syntactic structure maps on the semantic interpretation or vice-versa. Section 4 concludes this chapter.

1. Two Linguistics Strategies for showing the Interaction of Modality and Negation

In this section, I will discuss two different typological strategies in the interaction of modality and negation and I show how different languages behave in each strategy.

1-1. Modal Suppletion Strategy (MSS)

In the Modal Suppletion Strategy (henceforth MSS), the distinction between wide and narrow scope of negation is expressed by using different modal elements. De Haan (2004:84) shows the following formula for the MSS strategy.

1) Modal Suppletion Strategy Formalization

- a. Neg Mod₁ V_{main} (Mod (Neg (p)))
- b. Neg Mod₂ V_{main} (Neg (Mod (p)))

What is important in this strategy is that different scopes are shown by different modal elements, and the linear order of the elements is not critical in the scope of the negation. The best example of this strategy is English. De Haan (2004:86, 93) shows the deontic and epistemic system of English in the following continuum.

2) The Deontic and Epistemic System of English

Weak		Strong
may/can	should	must

Consider the following sentences with deontic modals.

- 3) a. John must not go to school. (Mod (Neg (p)))
- b. John need not go to school. (Neg (Mod (p)))

De Haan (2004:84, 2)

As the sentences in (3) show, when *must* is used, negation has narrow scope over the main verb and when *need* is used negation has wide scope over the entire sentence. A question that arises here is how other English modals interact with negation. Consider the following sentences.

- 4) a. John may not/can not come tomorrow. (Mod (Neg (p)))
 b. John may not/can't come tomorrow. (Neg (Mod (p)))

(De Haaan 2004:86, 6)

As we can see *may not* is ambiguous with respect to narrow and wide scope interpretations. In the case of the modal *can*, on the other hand, the presence of reduction and focal stress on the negative element (i.e., *can not/ can 't*) disambiguates its interpretation. *Cannot* means *may not* (deontic reading) in (4a) and the modal has the scope over the negation while in (4b), the negation has the scope over the modal *can*.

An interesting observation regarding the interaction of modality and negation is seen in the modal *should*. Consider the following sentence.

- 5) John should not come tomorrow. (Mod (Neg (p)))

(De Haan 2004:86, 5b)

According to De Haan (2004:88), there is only one interpretation for *should not* which is with narrow scope for the negation. Based on the above observations, De Haan (2004:92, 12) presents the following system for description of English deontic modals.

6) English Deontic Modal System

	(Mod (p))	(Mod (Neg (p)))	(Neg (Mod (p)))
Strong	<i>must</i>	<i>mustn't</i>	<i>needn't</i>
	<i>should</i>	<i>shouldn't</i>	
Weak	<i>may/can</i>	<i>may not /can not</i>	<i>may not/can't</i>

Now consider the following sentences with epistemic modals.

- 7) a. He may not be there. (Mod (Neg (p)))
 b. He can't be there. (Neg (Mod (p)))

(De Haan 2004: 93, 14b, c)

As (7a) shows, in contrast to *may not* in the deontic reading, *may not* in the epistemic reading only has narrow scope. The same is true for *can't*.

In the case of the epistemic modal *should*, as the sentence in (8) shows negation only allows narrow scope.

- 8) He should not be there by now. (Mod (Neg (p)))

(De Haan 2004:94, 15b)

In the case of the possibility reading, the same modals *can* and *may* are used in the epistemic reading. This is shown in (9).

- 9) a. He can't be there. (Mod (Neg (p)))
 b. He may not be there. (Neg (Mod (p)))

(De Haan 2004: 94, 16b, c)

In the case of *must* and *need* there are different approaches. De Haan (2004:95) asserts that in principle it is possible to use *mustn't* and *needn't* epistemically but in actual usage it is not done at all.

Based on the above observations, De Haan presents the following system for English epistemic modals.

10) English Epistemic Modal System

	(Mod (p))	(Mod (Neg (p)))	(Neg (Mod (p)))
Strong	<i>must</i>	<i>can't</i> <i>mustn't</i>	<i>may not</i> <i>(needn't)</i>
	<i>should</i>	<i>shouldn't</i>	
Weak	<i>may/can</i>	<i>may not</i>	<i>can't</i>

The other strategy is the Negation Placement Strategy (henceforth NPS) which is the topic of the next sub-section's discussion

1-2. Negation Placement Strategy (NPS)

In the Negation Placement Strategy (henceforth NPS), the difference between wide and narrow scope of negation is expressed by means of the position of negation itself. This strategy is formalized as follows.

- 11) a. (Neg Mod) V_{main} (Neg (Mod (p)))
 b. Mod (Neg V_{main}) (Mod (Neg (p)))

The crucial point in this strategy is that the negative element appears in two different positions to show two different scopes and interpretations. As (11) shows, the scope of the negation follows from the linear order. It can also be the case that the negation follows the modal and precedes the main verb. This is illustrated in (12).

- 12) a. (Mod Neg) V_{main} (Neg (Mod (p)))
 b. Mod (Neg V_{main}) (Mod (Neg (p)))

De Haan (2004:126-164) presents different examples of different languages in which the interaction of negation and modals corresponds to NPS strategy. Among these

languages, we can find Italian, French, Russian, Modern Greek and Yoruba. Consider the following examples from Italian.

- 13) a. Gianni non deve andare a Roma. (Neg (Mod (p)))
 G. Neg must-3rdsg.Prs go-Inf to Rome
 ‘Gianni needn’t go to Rome.’
- b. Gianni deve non andare a Roma. (Mod (Neg (p)))
 G. must-3rdsg.Prs not go-Inf to Rome
 ‘Gianni mustn’t go to Rome.’

(De Haan 2004:126, 69)

In NPS languages, it is possible for a sentence with wide scope structure like (13a), to have a narrow scope reading. This is a systematic process called NEG-Raising (or NEG-Transportation in De Haan’s sense) which is the availability of a lower clause reading for a higher clause negation (Horn 1989:308). Thus (13a) can have the following meanings.

- 14) a. Gianni non deve andare a Roma. (Neg (Mod (p)))
 G. Neg must-3rdsg.Prs go-Inf to Rome (Mod (Neg (p)))
 ‘Gianni needn’t/mustn’t go to Rome.’

Therefore, the final formalization of the NPs that includes Italian data is as follows.

15) **Negation Placement Strategy Formalization**

- a. (Neg Mod) V_{main} (Neg (Mod (p)))
 (Mod (Neg (p)))
- b. Mod (Neg V_{main}) (Mod (Neg (p)))

There are some languages make use of only MSS or NPS, but there are many languages that make use of both strategies. In the next sub-section, I will show how modals and negation interact in these languages.

1-3. Mixed Strategies

In this strategy, an MSS language can have one or two NPS phenomena or vice-versa. First, we see NPSs in MSS languages and then MSSs in NPS languages. NPS phenomena are seen in the MSS language English *can (may) not*, in which negation has narrow scope. Consider the following sentence from De Haan (2004:165)

16) John can not come tomorrow.

There are some serial syntactic properties associated with the narrow scope construction. For example, unlike the wide scope construction, the narrow scope construction allows linguistic material between the modal verb and the negation. This is illustrated in (17).

17) John can, if he likes, not come tomorrow.

Furthermore, the main stress in narrow scope sentences lies on the negation, not on the main verb (De Haan 2004:165). This situation is the same as the one we can see in NPS languages. De Haan (2004:167) states that “if we assume that we are in fact dealing with an NPS in the case of *can not*, then it is clear that the two strategies are not separate entities, but rather can co-occur within the same language.” Thus the verb *may* behaves as a biscopal verb as shown in (18).

18) a. (may not) V (Neg (Mod (p)))
 b. may ... (not V) (Mod (Neg (p)))

The MSS phenomenon in NPS languages occurs in the strong modal part of the system. For instance, in Modern Greek (henceforth MG), the verb *prepi* ‘must’ is a biscopal verb. However, MG possesses the verb *xreazomai* ‘need’ which is uniscopal. On the other side, MG makes use of two different negations, *den* and *min*. The negation *den* is

used in main clauses or in subordinate clauses introduced by other elements than the particle *na*. *min* is used in subordinate clauses introduced by the particle *na*. Consider the following examples.

- 19) a. O Giannis den xreiazetai na agorasi kanena biblio.
 Det G. Neg need Prt buy-3rdsg.Prs any book
 ‘Giannis needn’t buy a book.’
- b. O Giannis den prepi na agorasi kanena biblio.
 Det G. Neg must Prt buy-3rdsg.Prs any book
 ‘Giannis mustn’t buy a book.’
- c. *O Giannis prepi na min agorasi kanena biblio.
 Det G. must Prt Neg buy-3rdsg.Prs any book
 ‘Giannis must not buy a book.’

De Haan (2004:170, 150; 131, 102b)

As (19b) shows, the narrow scope reading is expressed by means of the negation morpheme *dan* which is normally used for the wide scope reading.

Based on the above discussion, we conclude that it is very hard to determine if a language is truly a MSS language or an NPS language. In fact, there are some languages that make use of mixed strategies.

A question of interest is of which strategy (or strategies) Persian makes use of. Does Persian belong to MSS languages, NPS languages or make use of mixed strategies? In the next section, we will address these questions.

2. The Interaction of Persian Modals and Negation: MSS or NPS

Persian verbal modals include both auxiliary and complex predicates. In this section, first we see how Persian auxiliary modals interact with negation then we focus on the interaction of complex predicates modals with negation.

2-1. *The Interaction of Persian Auxiliary Modals with Negation*

As we saw in chapter 2, Persian auxiliary modals are *bâyad* ‘must’, *šâyad* ‘may’, and *tunestan* ‘can/be able’. While *šâyad* has an epistemic reading, *tunestan* and *bâyad* are ambiguous with respect to the root and epistemic readings. Consider the following sentences in which the root auxiliary modal *bâyad* ‘must’ interacts with negation.

- 20) a. Sârâ na-bâyad be in konferâns be-r-e. (Neg (Mod (p)))
 S. Neg-must to this conference Subj-go-3rdsg.
 ‘Sârâ needn’t go to the conference.’
- b. Sârâ bâyard be in konferâns na-r-e. (Mod (Neg (p)))
 S. must to this conference Neg-go-3rdsg.
 ‘Sârâ must not go to the conference.’

As the sentences in (20) show, when negation attaches to the modal *bâyad* ‘must’ has wide scope over the entire clause and when negation attaches to the main verb, it has a narrow scope over the main verb. The same facts obtain on the epistemic reading of *bâyad*. Consider the following sentence.

- 21) a. Sârâ na-bâyad be šohar-eš haqiqat ro gofte bâ-š-e. (Neg (Mod (p)))
 S. Neg-must to husband-his truth-ACC told Subj-be-3rdsg.
 ‘Sârâ mustn’t have told her husband the truth.’
- b. Sârâ bâyard be šohar-eš haqiqat ro na-gofte bâ-š-e. (Mod (Neg (p)))
 S. must-3rd-sg. to husband-his truth-ACC Neg-told Subj-be-3rdsg.
 Literal meaning: ‘Sârâ needn’t have told her husband the truth.’

In an epistemic reading, we can see negation takes wide or narrow scope with respect to the modal *bâyad* depending on its position.

Now, consider the following sentences with the epistemic modal *šâyad* ‘may.’

- 22) a. *Sârâ na-šâyad be in konferâns be-r-e. (Neg (Mod (p)))
 S. Neg-can to this conference Subj-go-3rdsg.
 ‘Sârâ can’t go to the conference.’
- b. Sârâ šâyad be in konferâns na-r-e. (Mod (Neg (p)))
 S. may to this conference Neg-go-3rdsg.
 ‘Sârâ may not go to the conference.’

As the sentences in (22) show, negation only has the narrow scope with the epistemic modal *šâyad*.

It is worth noting that *šâyad* is a frozen form of the verb *šâyestan* which was a productive verb in Middle Persian and has the negative form *na-šâyestan* or *na-šâyad*. These negative forms are found in the classic literature of Persian. In modern Persian, these forms are not productive any more (Lazard 1992, Lambton 1964, among others). However, (22a) is simply morphosyntactically ill-formed.

Another auxiliary modal is *tunestan* ‘can/to be able, may’ with both deontic permission reading, and a dynamic ability reading. Consider the following sentences.

Dynamic/ability

- 23) a. Sârâ ne-mi-tun-e be in konferâns be-r-e. (Neg (Mod (p)))
 S. Neg-Dur-can-3rdsg. to this conference Subj-go-3rdsg.
 ‘Sârâ is not able to go to the conference.’
- b. Sârâ mi-tun-e be in konferâns na-r-e. (Mod (Neg (p)))
 S. Dur-can-3rdsg. to this conference Neg-go-3rdsg.
 ‘Sârâ is able not to go to the conference.’

Deontic/permission

- 24) a. Sârâ ne-mi-tun-e tu in mosâbeqe šerkat be-kon-e.
 S. Neg-Dur-can-3rdsg. to this competition participation Subj-do-3rdsg.
 ‘Sârâ can’t participate in the competition.’ (Neg (Mod (p)))

- b. Sârâ mi-tun-e tu in mosâbeqe šerkat na-kon-e.
 S. Dur-can-3rdsg. to this competition participation Neg-do-3rdsg.
 ‘Sârâ may not participate in the competition.’
 (Mod (Neg (p)))

The above data show that in the interaction of the root auxiliary modal verb *tunestan* with negation, different positions of negation give different scopes.

Furthermore, as the data in (20-24) show the interaction of Persian auxiliary modal verbs with negation indicates that Persian behaves like NPS languages since the position of negation determines the wide or narrow scope interpretations of negation. The order of the negation, modal and main verb in the clause also supports the claim that Persian is an NPS language since languages with the surface order Neg-Mod-V tend to use the NPS (p.181).

In the next sub-section, we will consider the interaction of negation with Persian complex modals and we will see how much these modals support our results.

2-2. *The Interaction of Persian Complex Modals with Negation*

Among complex modals *majbur budan* ‘to be obliged,’ *majbur šodan* ‘to become forced’, *ejâze dâštan* ‘to have permission’, *ehdiyâj dâštan* ‘to need,’ and *lâzem budan* ‘to be necessary’ are root modals. Consider the following sentences in which these complex modals are used.

- 25) a. Sârâ majbur ni-st/na-šod (ke) be in konferâns be-r-e.
 S. obliged/forced Neg-be/Neg-became-3rdsg. that to this conference Subj-go-3rdsg.
 ‘Sârâ is/was not obliged/ did not become forced to go to the conference.’
 (Neg (Mod (p)))
- b. Sârâ majbur -e/šod (ke) be in konferâns na-r-e.
 S. obliged/forced be/became-3rdsg. that to this conference Neg-go-3rdsg.
 ‘Sârâ is/was obliged/ became forced not to go to the conference.’
 (Mod (Neg (p)))

- 26) a. Sârâ ejâze na-dâr-e (ke) tu in mosâbeqe šerkat be-kon-e.
S. permission Neg-have-3rdsg. that in this competition participation Subj-do-3rdsg.
'Sârâ does not have permission to participate in the competition.'

(Neg (Mod (p)))

- b. Sârâ ejâze dâr-e (ke) tu in mosâbeqe šerkat na-kon-e.
S. permission have-3rdsg. that in this competition participation Neg-do-3rdsg.
'Sârâ has permission not to participate in the competition.'

(Mod (Neg (p)))

- 27) a. Sârâ ehtiyâj na-dâr-e (ke) esterâhat be-kon-e.
S. need Neg-have-3rdsg. that rest Subj-do-3rdsg.
Literal meaning: 'Sârâ needn't rest.'

(Neg (Mod (p)))

- b. *Sârâ ehtiyâj dâr-e (ke) esterâhat na-kon-e.
S. need have-3rdsg. that rest Neg-do-3rdsg.
Literal meaning: 'Sârâ need not rest.'

(Mod (Neg (p)))

- 28) a. Sârâ lâzem ni-st (ke) tu in mosâbeqe šerkat be-kon-e.
S. necessary not-be-3rdsg. that in this competition participation Subj-do-3rdsg.
Literal meaning: 'It is not necessary that Sârâ participates in the competition.'

(Neg (Mod (p)))

- b. Sârâ lâzem-e (ke) tu in mosâbeqe šerkat na-kon-e.
S. necessary-be-3rdsg. that in the competition participation Neg-do-3rdsg.
Literal meaning: 'It is necessary that Sârâ will not participate in this competition.'

(Mod (Neg (p)))

As the above data show, negation shows consistent behavior with respect to the root complex modals. This means that negation may take both wide and narrow scopes depending on its position.

In the case of the root dynamic modal *ehtiyâj dâštan* ‘to need,’ however, the negation only has wide scope. Thus the Persian counterpart of the English sentence in (29a) should be (29b).

29) a. Sârâ needs not to go to the party.

- b. Sârâ lâzem-e (ke) be in mehmuni na-r-e.
 S. necessary-3rdsg. that to this party Neg-go-3rdsg.
 Literal meaning: ‘It is necessary that Sârâ will not go to the party.’

As the sentence in (29b) shows, the speaker intends to convey the meaning that would be expressed by narrow scope of negation with respect to *ehtiyâj dâštan* ‘to need,’ they must switch to the dynamic modal *lâzem budan* ‘to be necessary.’

Critical to our discussion is that Persian complex modals follow the common order of negation, modal and main verbs of NPS-languages, i.e., Neg-Mod-V.

Now, consider the following epistemic complex modals.

- 30) a. Sârâ momken ni-st (ke) be in konferâns rafte bâ-š-e.
 S. possible Neg-be-3rdsg. that to this conference gone Subj-be-3rdsg.
 Literal meaning: ‘It is not possible that Sârâ has gone to the conference.’

(Neg (Mod (p)))

- b. Sârâ momken-e (ke) be in konferâns na-rafte bâ-š-e.
 S. possible-be-3rdsg. that to the conference Neg-gone Subj-be-3rdsg.
 Literal meaning: ‘It is possible that Sârâ has not gone to the conference.’

(Mod (Neg (p)))

- 31) a. #Sârâ ehtemâl na-dâr-e (ke) be in konferâns rafte bâ-š-e.
 S. possibility Neg-have-3rdsg. that to this conference gone Subj-be-3rdsg.
 Literal meaning: ‘It is not probable that Sârâ has gone to the conference.’

(Neg (Mod (p)))

- b. Sârâ ehtemâl dâr-e (ke) be in konferâns na-rafte bâ-š-e.
 S. possibility have-3rdsg. that to this conference Neg-gone Subj-be-3rdsg.
 Literal meaning: ‘It is probable that Sârâ has not gone to the conference.’

(Mod (Neg (p)))

- 32) a. Sârâ emkân na-dâr-e (ke) be šohar-eš xiyânat karde bâ-š-e.
 S. possibility Neg-have-3rdsg. that to husband-her cheating done-Prt Subj-be-3rdsg.
 Literal meaning: ‘It is not probable that Sârâ has cheated to her husband.’

(Neg (Mod (p)))

- b. Sârâ emkân dâr-e (ke) be šohar-eš xiyânat na-karde bâ-š-e.
 S. possibility have-3rdsg. that to husband-her cheating Neg-done-Prt Subj-be-3rdsg.
 Literal meaning: ‘It is probable that Sârâ has not cheated to her husband.’

(Mod (Neg (p)))

As the above data show in their epistemic readings, most complex modals show scope ambiguity with negation as we expect (e.g. 30, 32); while one does not (e.g. 31). Is this a morphological problem or a semantic problem? I leave this issue for the further research.

However, the above data still supports the claim that Persian is an NPS language since the position of negation changes with different scopes.

2-3. Summary

The discussion of this section shows that Persian is an NPS language based on the interaction of modal and negation. Persian root modals in simple and complex forms show ambiguity with respect to negation except the dynamic modals *ehdiyâj dâstan* ‘to need’. However, in contrast to English epistemic modals in which negation always has narrow scope, Persian epistemic modals generally allow both scopes with just a couple exceptions. Negation only has narrow scope in the case of the epistemic modal *šâyad*

‘may’ for morpho-syntactic reasons. It may take wide or narrow scope in the case of the modal *emkân dâstan* ‘to be probable’ and *momken budan* ‘to be possible.’ Among epistemic complex modals *ehtemâl dâstan* ‘to be possible’ is exceptional and is not allowing both scopes.

In the next section, we see how this semantic distinction is treated structurally.

3. The Interaction of Persian Modality and Negation: Structural Analysis

In this section, I show how syntactic representation maps into the semantic interpretation. First, I present the structural analysis of the interaction of auxiliary modal verbs and negation. Then I discuss the structural representation of the interaction of complex modals and negation in Persian.

3-1. Persian Auxiliary Modal Verbs and Negation: Structural Analysis

I start the discussion with sentence (20a), repeated in (33) in which negation interacts with the root simple modal *bâyad* ‘must’ and then when in (20b) it is attached to the main verb. As we saw in the last section, the position of negation gives different interpretations of the clause.

- 33) a. Sârâ na-bâyad be in konferâns be-r-e.
 S. Neg-must to this conference Subj-go-3rdsg.
 ‘Sârâ needn’t go to the conference.’

(Neg (Mod (p)))

- b. Sârâ bâyard be in konferâns na-r-e.
 S. must to this conference Neg-go-3rdsg.
 ‘Sârâ must not go to the conference.’

(Mod (Neg (p)))

In (33a) negation scopes over modal while in (33b) the modal *bâyad* scopes over the negation. Negation in (33a) is called *sentential negation* since it scopes over not only

the modal but also the whole proposition. Negation in sentence (33b) only scopes over the main verb. This distinction is represented by two different positions of the NegP. Sentential negation is a NegP that dominates TP, as illustrated in diagram (5-1a) while in (5-1b) the negation is a NegP which scopes over the vP. In both cases *bâyad* is in the head of ModP and has the root reading.

DIAGRAM (5-1)

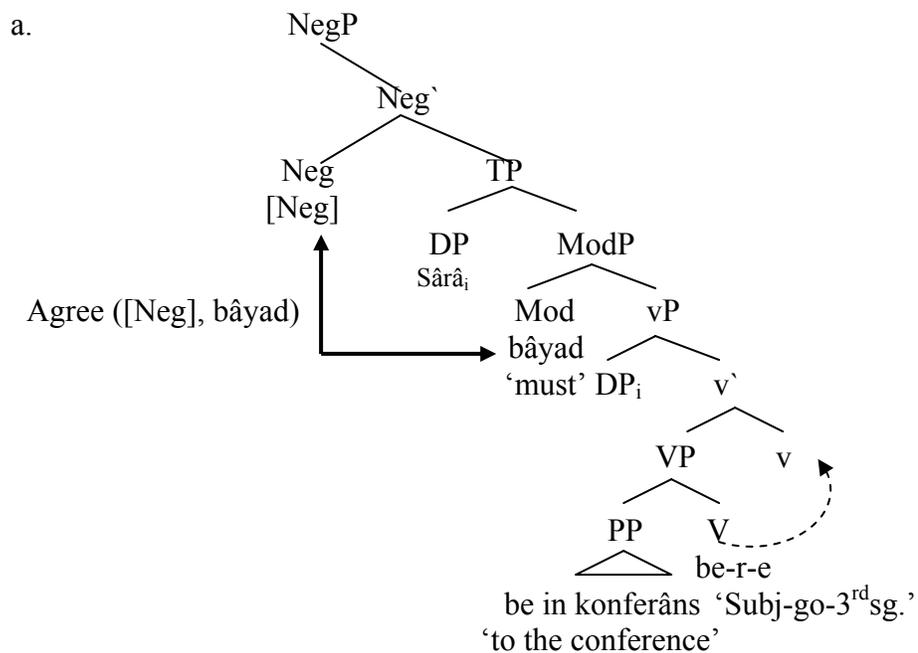
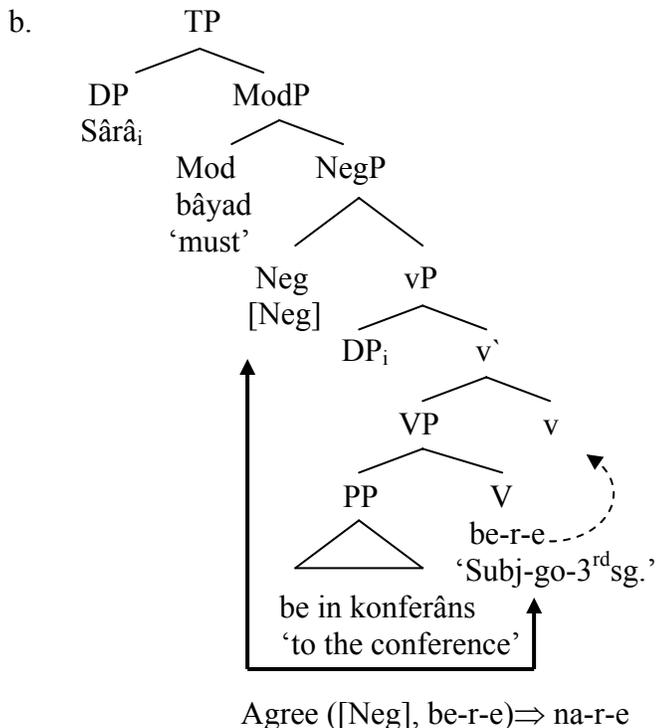


DIAGRAM (5-1)



As the above tree-diagrams show the negation *na-* 'not' by Agree operation matches the negative feature with either the modal or the main verb of the clause. In the case of (5-1b), the matching of [Neg] feature with the main verb changes the subjunctive marker *be-* to *na*.

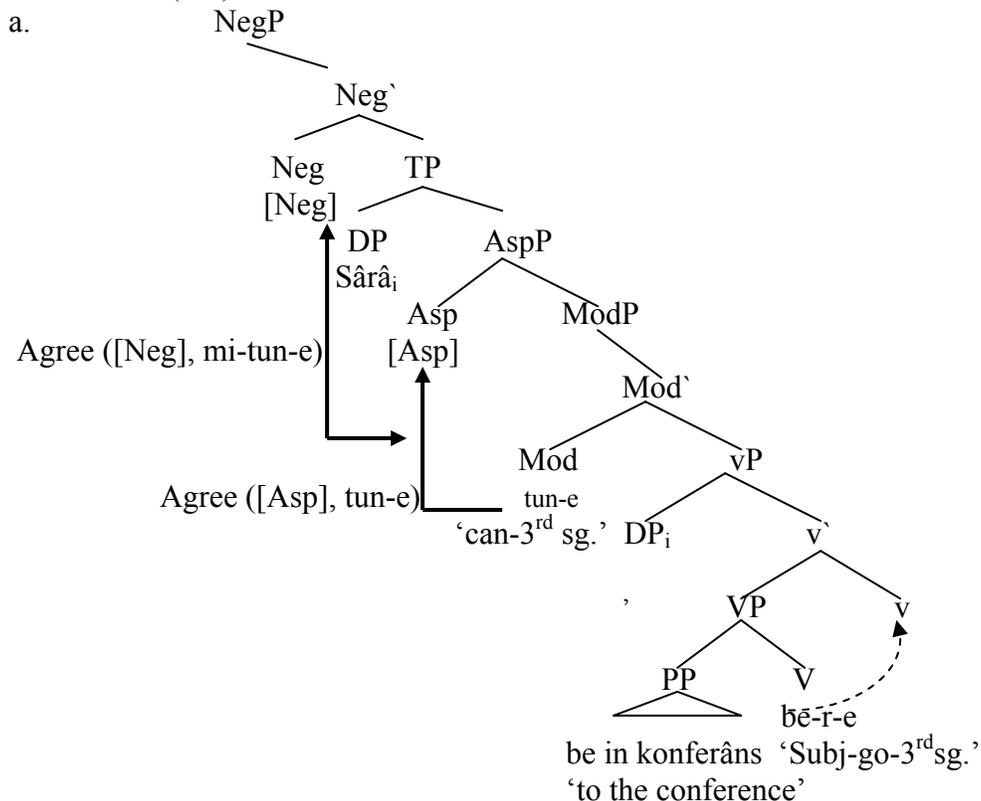
Furthermore, the above structure shows that different semantic interpretations are represented by different syntactic structures. When the negation is sentential negation, it c-commands TP and it scopes over the whole proposition. When the main verb is negated then the NegP scopes over the vP and has a narrow scope. Therefore, we can conclude that different syntactic structures map on to different semantic interpretations or vice-versa.

This result is borne out by the structures of the interaction of the simple modal *tunestan* ‘can’ and negation. The only difference is that we have two different Agree relations when the negation scopes over the modal and the clause. First, there is an Agree operation between the verb *tunestan* and the head of AspP *mi-*, then the negation *ne-* ‘not’ Agrees with the modal verb *mi-tun-e* ‘Dur-can-3rdsg.’ and matches [Neg] feature. Consider the sentences in (34) followed by their structures in diagram (5-2).

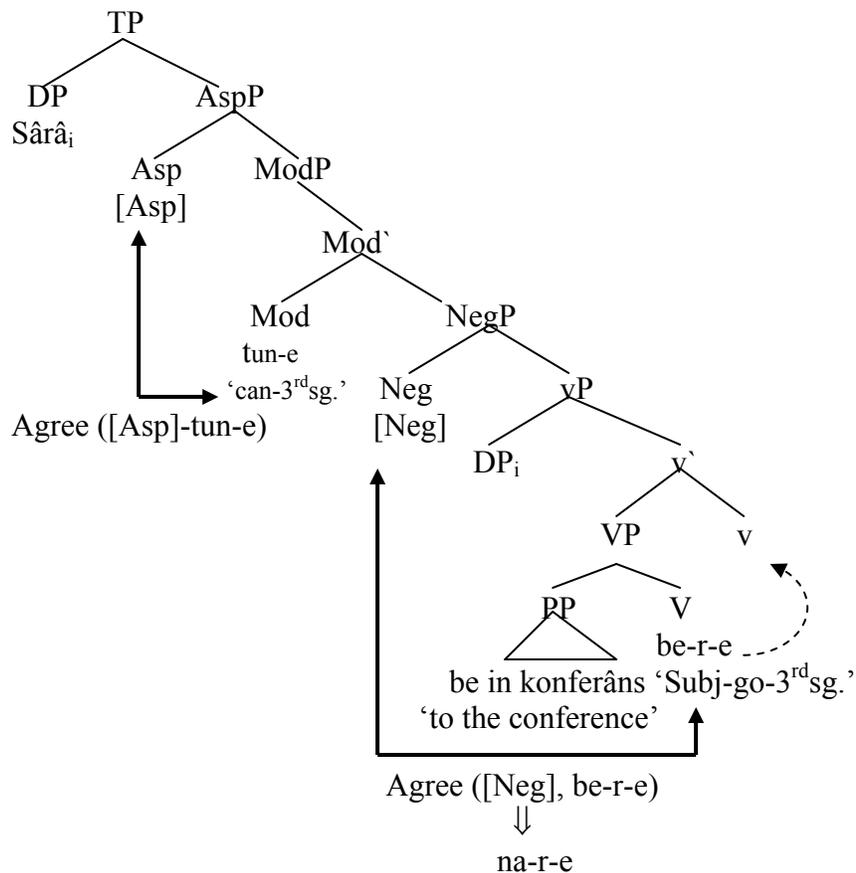
- 34) a. Sârâ ne-mi-tun-e be in konferâns be-r-e.
 S. Neg-Dur-can-3rdsg. to this conference Subj-go-3rdsg.
 ‘Sârâ is not able to go to the conference.’
 (Neg (Mod (p)))

- b. Sârâ mi-tun-e be in konferâns na-r-e.
 S. Dur-can-3rdsg. to this conference Neg-go-3rdsg.
 ‘Sârâ is able not to go to the conference.’
 (Mod (Neg (p)))

DIAGRAM (5-2)



b.



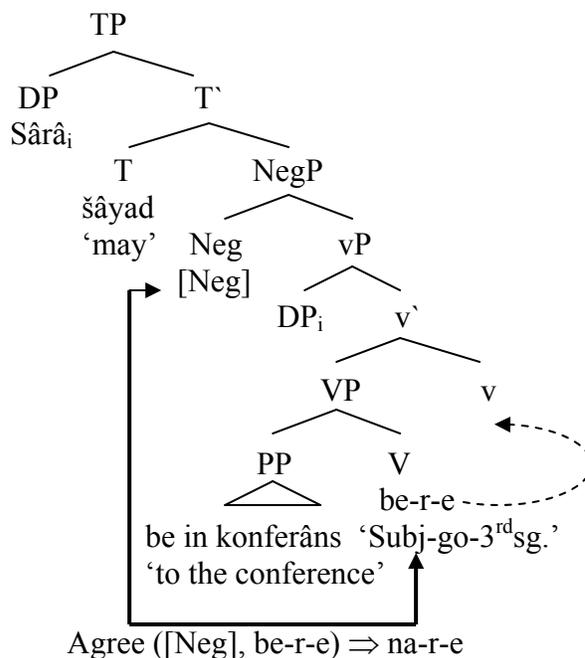
Negation may only take narrow scope with the epistemic auxiliary modal verb *şâyad*

'may.' Consider sentence (22), repeated in (35) and its structure in diagram (5-3).

- 35) Sârâ şâyad be in konferâns na-r-e.
 S. may to this conference Neg-go-3rdsg.
 'Sârâ may not go to the conference.'

(Mod (Neg (p)))

DIAGRAM (5-3)



As the above structure shows, the epistemic modal *šâyad* is in T and the only Agree relation is between the head of the negative phrase *na-* 'not' and the main verb of the clause. Thus the negation has a narrow scope. It is worth noting that negation had a wide scope over the modal *šâyad* in middle Persian and classic literature of Persian in a specific context which is called subjectless constructions, as illustrated in (36).

- 36) na-šâyad raft.
 Neg-may go
 'One may not go.'

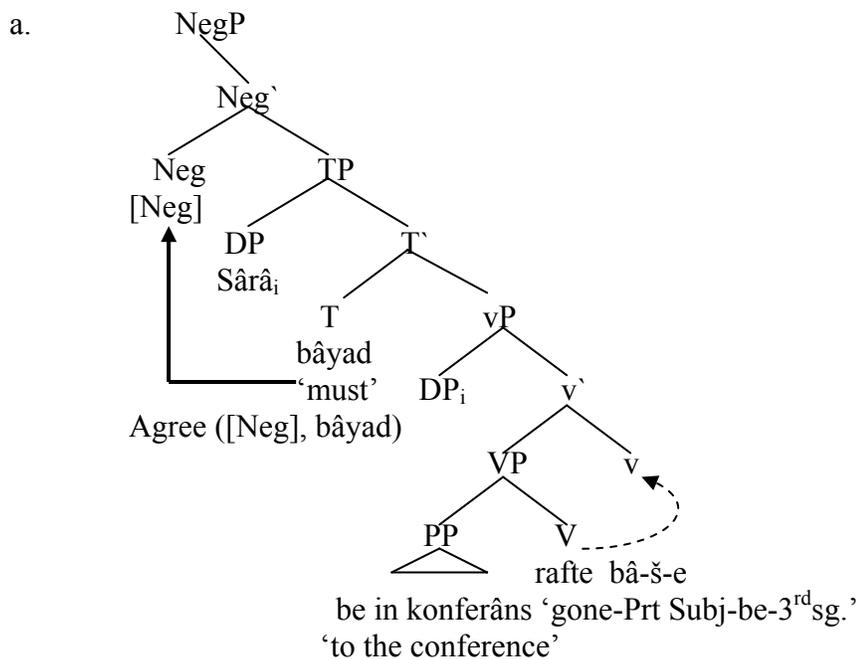
In contrast to the epistemic modal *šâyad*, the interaction of the negation with *bâyad* in the epistemic reading may take both narrow and wide scopes. This is illustrated in (37), and in diagram (5-4).

- 37) a. Sârâ na-bâyad be in konferâns rafte bâ-š-e.
 S. Neg-must to this conference gone Subj-be-3rdsg.
 'Sârâ mustn't have gone to the conference.' (Neg (Mod (p)))

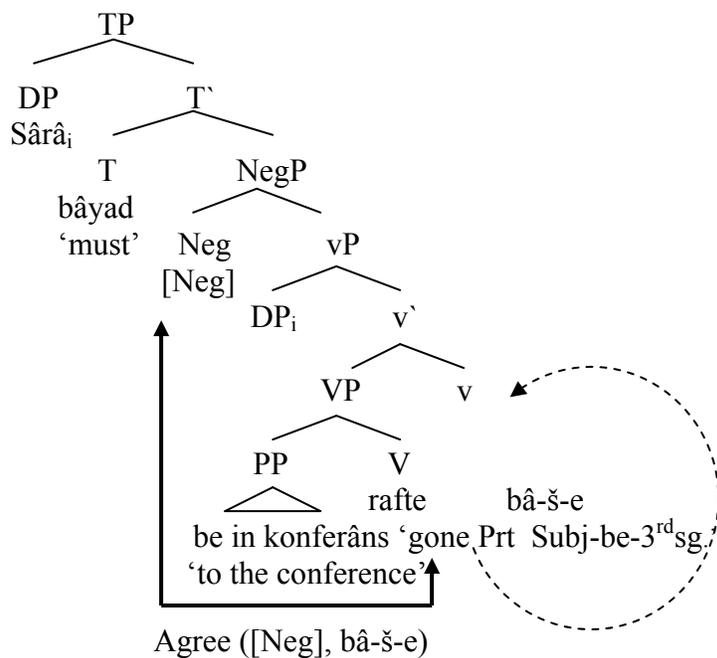
- b. Sârâ bâyard be in konferâns na-rafte bâ-š-e.
 S. must to this conference Neg-gone Subj-be-3rdsg.
 ‘Sârâ mustn’t have gone to the conference.’

(Mod (Neg (p)))

DIAGRAM (5-4)



b.



Next, I present the structural analysis of the interaction of the negation with Persian complex modals, and I address the question of whether different semantic interpretations of negation maps on to different syntactic structures.

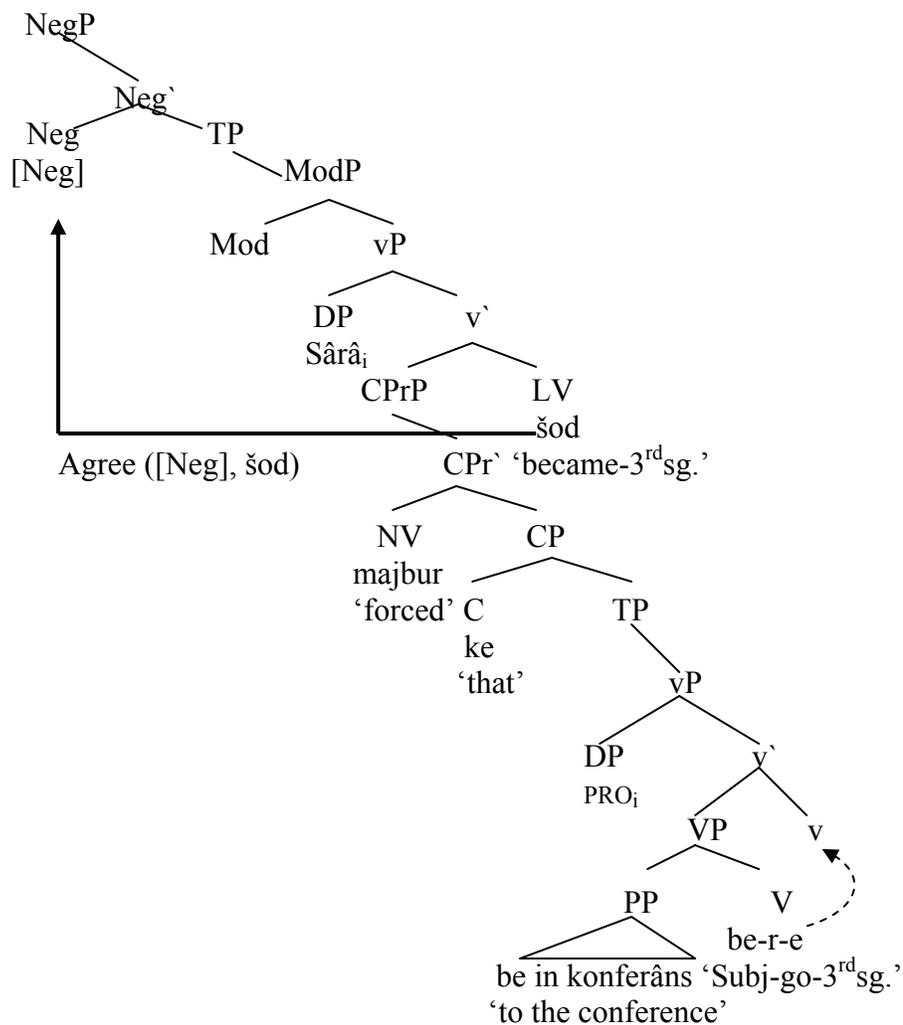
3-2. Persian Complex Modal Verbs and Negation: Structural Analysis

I start the discussion with the interaction of the root complex modals *majbur budan/šodan* ‘to be/become obliged/forced’ in the sentence (38) and their structures in diagram (5-5).

- 38) a. Sârâ majbur na-šod (ke) be in konferâns be-r-e.
 S. obliged/forced Neg-became-3rdsg. that to this conference Subj-go-3rdsg.
 ‘Sârâ was not forced to go to the conference.’
(Neg (Mod (p)))
- b. Sârâ majbur šod (ke) be in konferâns na-r-e.
 S. obliged/forced became-3rdsg. that to this conference Neg-go-3rdsg.
 ‘Sârâ was forced not to go to the conference.’
(Mod (Neg (p)))

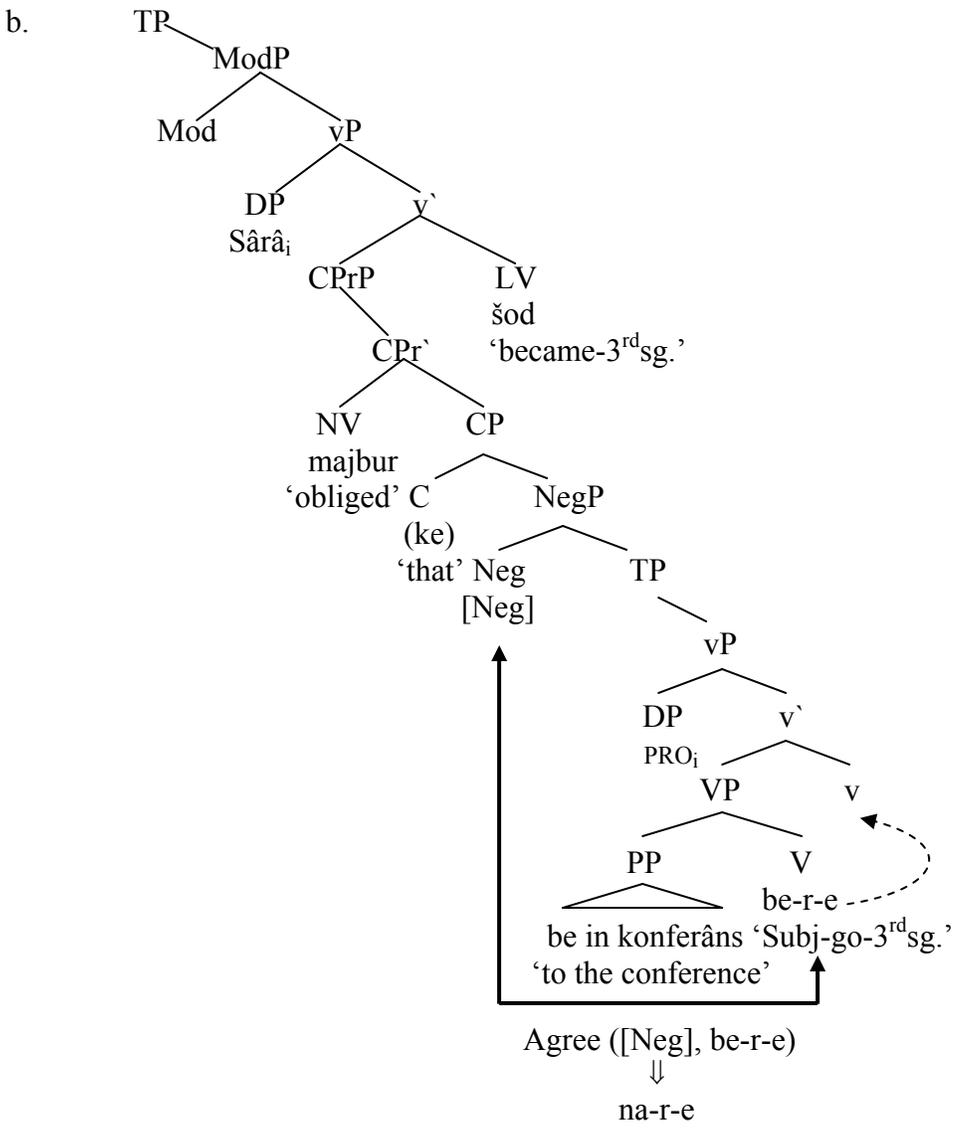
DIAGRAM (5-5)

a.



As the above tree diagram shows the negation *na-* 'not' has wide scope over the complex modal and the clause via the Agree relation with the light verbs *šod* 'become-3rdsg.' matches the negative feature of the modal verb. In (38b), the negation has the narrow scope over the embedded clause. This is illustrated in (5-5b).

DIAGRAM (5-5)



In the case of epistemic complex modals, the structure is the same. When the negation has the wide scope, it dominates the matrix TP and when it has narrow scope it is contained in the lower clause. This is illustrated in (39).

- 39) a. Sârâ emkân na-dâr-e (ke) haqiqat ro be u gofte bâ-š-e.
 S. possible Neg-have-3rdsg. that truth-ACC to him said-Prt Subj-be-3rdsg.
 Literal meaning: 'It is not possible that Sârâ told him the truth.'

- b. Sârâ emkân dâr-e (ke) haqiqat ro be u na-gofte bâ-š-e.
 S. possible have-3rdsg. that truth-ACC to him Neg-said-Prt Subj-be-3rdsg.
 Literal meaning: 'It is possible that Sârâ did not tell him the truth.'

DIAGRAM (5-6)

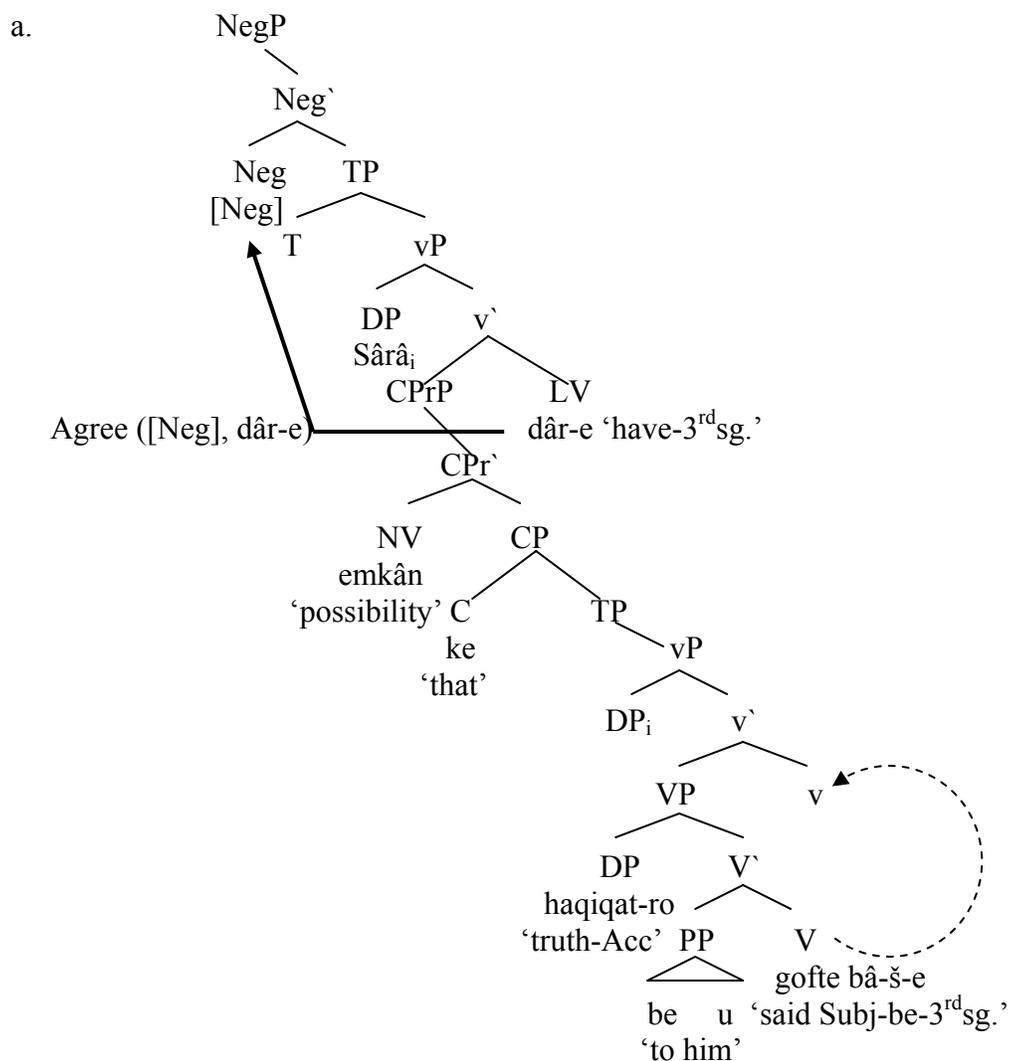
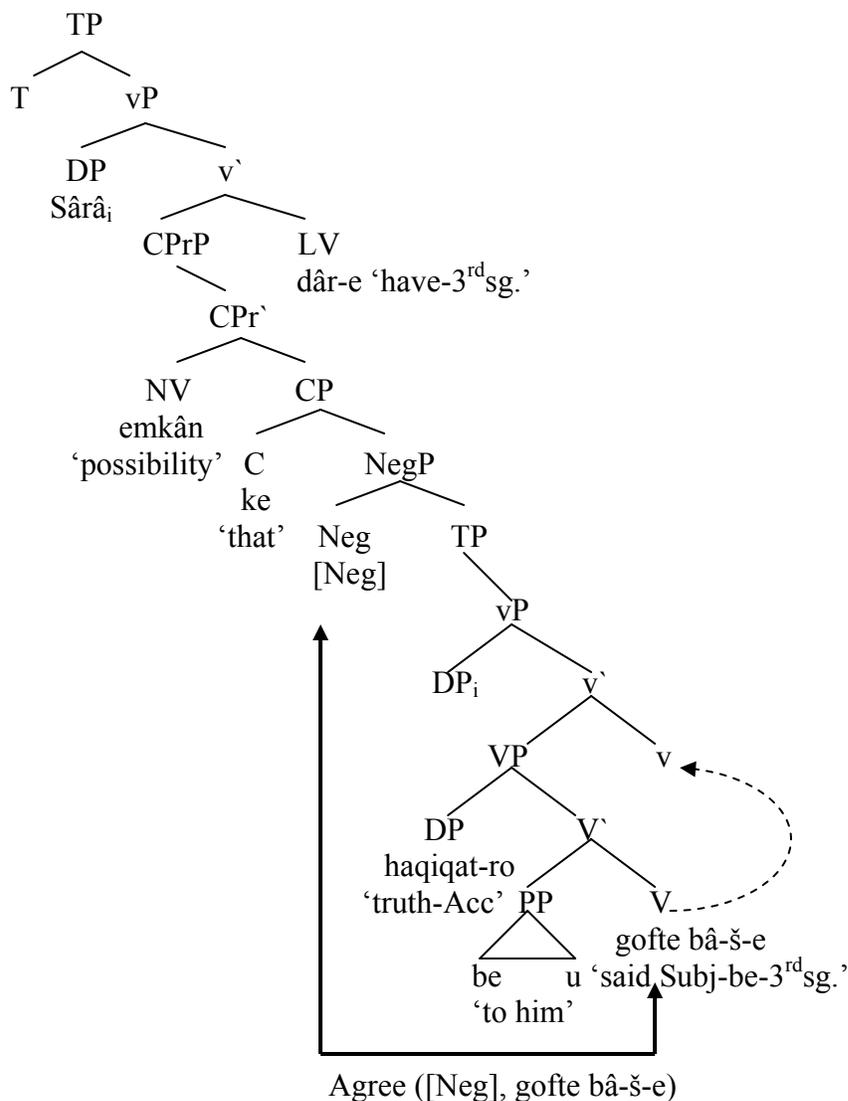


DIAGRAM (5-6)

b.



There are, however, some complex modals which do not show ambiguity with negation.

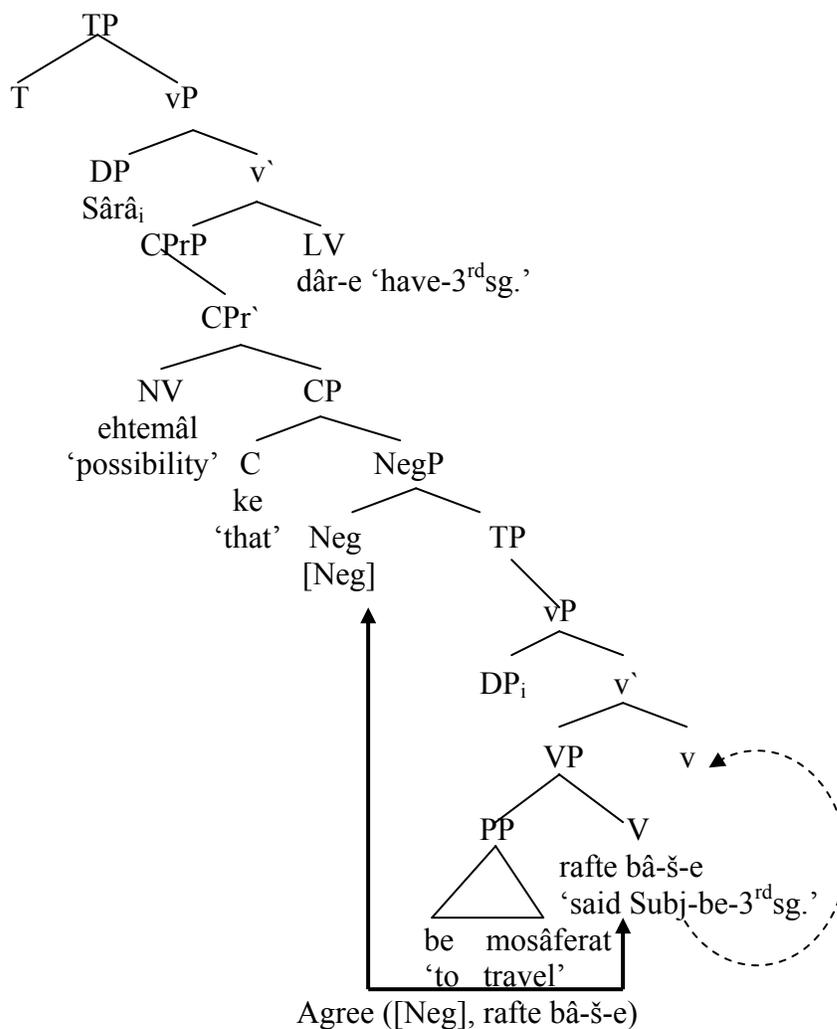
This is illustrated in (40) and in diagram (5-7).

40) a. #Sârâ ehtemâl na-dâr-e (ke) be mosâferat rafte bâ-š-e.
 S. possibility Neg-have-3rdsg. that to travel gone-Prt Subj-be-3rdsg.
 Literal meaning: 'It is not possible that Sârâ has gone on a trip.'

b. Sârâ ehtemâl dâr-e (ke) be mosâferat na-rafte bâ-š-e.
 S. possibility have-3rdsg. that to travel Neg-gone-Prt Subj-be-3rdsg.
 Literal meaning: 'It is possible that Sârâ has not gone on a trip.'

As the above data show, in the case of the complex modal *ehtemâl dâştan* ‘to have possibility’ negation may only take narrow scope. As I noted above, the absence of a matrix negation is mysterious here. This is illustrated in (5-7).

DIAGRAM (5-7)



As the structure of Persian complex modals show there is a wrong word order of nonverbal elements and the light verbs in these constructions. Since the negation attaches to the light verbs, the wrong word order of the elements in the complex modals

is a critical problem for these structures. The problem of the word order of Persian will be discussed in the next chapter.

4. Conclusion

In this chapter, I have discussed the interaction of two operators, modality and negation in some languages, especially Persian. We have seen that English negation has both wide and narrow scope over the root modals while negation only has the narrow scope over English epistemic modals. I have also presented two different strategies MSS and NPS that different languages employ, based on the interaction of the negation and modals.

According to Persian data, I have proposed that Persian is an NPS language. Negation may take wide or narrow scope over root modals depending on its position, except in the dynamic root modal *ehdiyâj dâštan* ‘to need’ where negation may only take the wide scope over the modal. However, the interaction of the negation with Persian epistemic modals shows inconsistent behavior with respect to scope. The negation may only take the narrow scope with respect to the epistemic modals *šâyad* ‘may,’ and *ehtemâl dâštan* ‘to be probable/likely.’ It may take both the wide scope and the narrow scope in the case of *emkân dâštan* ‘to be probable/likely.’ Therefore, we can conclude that the structural analysis of the interaction of Persian modals and negation shows that the syntactic structure maps on the semantic interpretation or vice-versa. There are just a few gaps with respect to the scope possibilities of particular modals.

CHAPTER 6

PERSIAN WORD ORDER: RECONSIDERATION

Introduction

In Chapter 1, I have shown that Persian has an SOV order. This means that the direct object precedes the verb if it is non-specific, and it is marked by *râ* if it is specific (e.g., 1b). Indirect objects are represented by preverbal prepositional phrases as illustrated in (1a).

- 1) a. Sârâ be Sâsân ketâb dâd.
 S. to S.-Ind.Obj book-D.Obj gave-3rdsg.
 ‘Sârâ gave this book to Sâsân.’
- b. Sârâ ketâb-ro be Sâsân dâd.
 S. book-râ-ACC to S. gave-3rdsg.
 ‘Sârâ gave this book to Sâsân.’

We also had a brief discussion of Kayne’s (1994) proposal in which he implies that SOV languages must be derived from an SVO order. Although Kayne’s proposal is not compatible with some Persian sentences where the object is a prepositional phrase like example (2), the position of the clausal arguments of the verb in Persian is compatible with Kayne’s (1994) proposal. This is illustrated in (3).

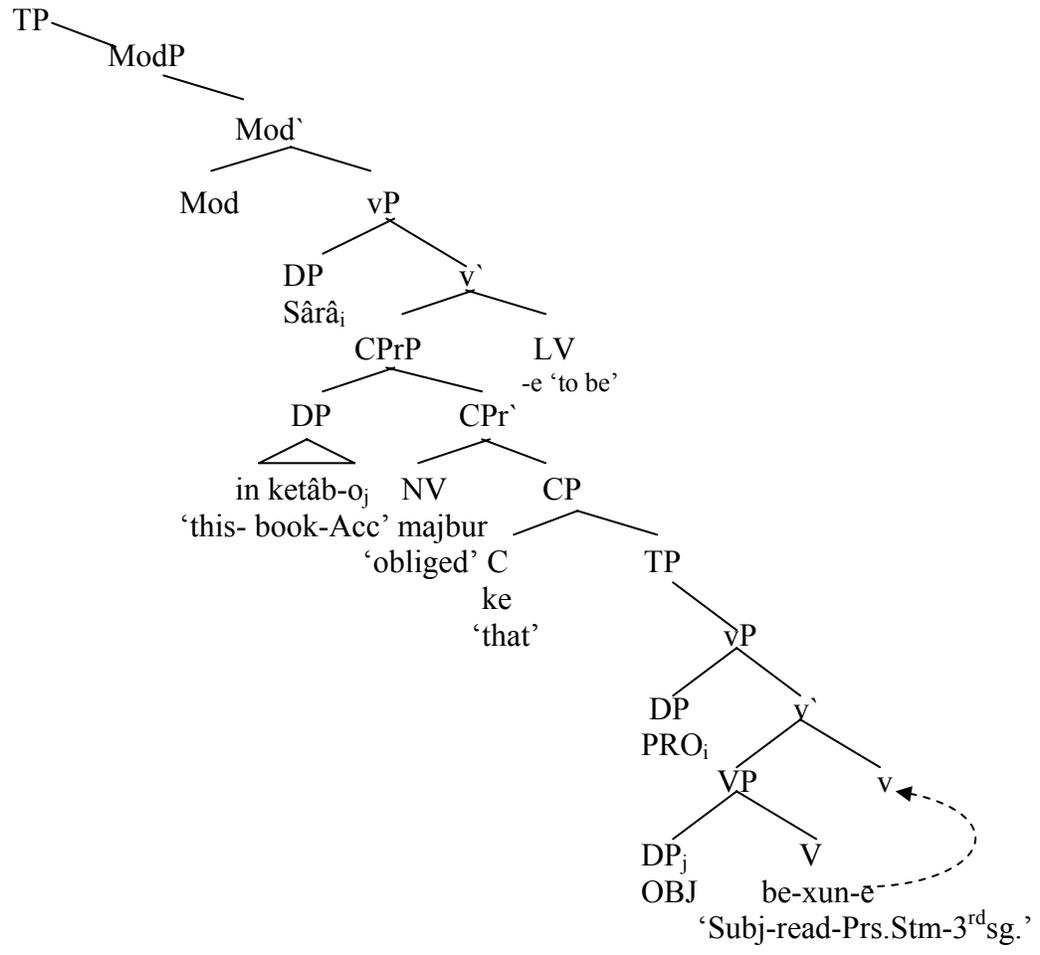
- 2) Sârâ *barâ-ye tavalode Sâsân* in keik-ro poخته.
 S. for -EZ birthday S. this pastry-râ has cooked-3rdsg.
 ‘Sârâ has cooked this cake for Sâsân’s birthday.’
- 3) Sârâ fekr mi-kon-e (ke) dar emtehân qabul be-š-e.
 S. thought Dur-do-3rdsg. (that) at exam pass Subj-become-3rdsg.
 ‘Sârâ thinks that she will pass the exam.’

Furthermore, as we have seen in Chapter 3, in the case of complex modal verbs such as *majbur budan/šodan* ‘to be/become obliged/ forced’ or *momken budan* ‘to be

possible,' is problematic, if we consider Persian default word order to be SOV. As with the clausal arguments in (2), we are faced with the wrong order of the complement and the complex modal in these cases. Consider the following sentence and its structure in diagram (6-1).

- 4) Sârâ majbur-e (ke) in ketâb-o be-xun-e.
 S. obliged-be-3rdsg. that this book-ACC Subj-read-3rdsg.
 'Sârâ is obliged to read this book.'

DIAGRAM (6-1)



In this chapter, after presenting an overview of different proposals on the position of Persian clausal arguments from Moyne & Carden (1974), Soheili Isfahani (1976), Dabir

Moghadam (1982), Darzi (1996), and Karimi (1989, 2001, 2005), I will suggest three alternative proposals for this problem.

This chapter is organized as follows: In Section 1, I present a brief discussion of different proposals on clausal arguments from Moyne & Carden (1974), Soheili Isfahani (1976), Dabir Moghadam (1982), Karimi (1989, 2001, 2005) and Darzi (1996). In Section 2, I will present three alternative proposals for the position of the clausal complement in complex predicates. Section 3 concludes the chapter.

1. Persian Clausal Arguments: An Overview

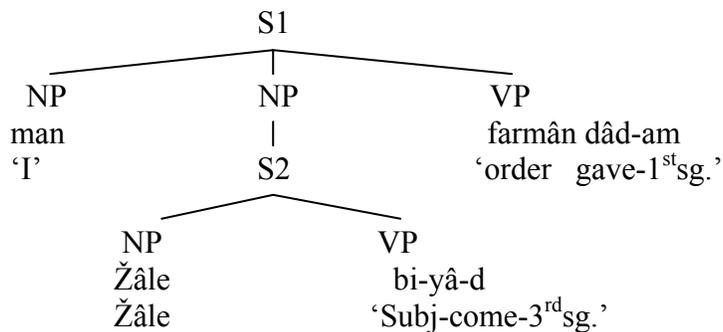
1-1. Clausal Arguments in a Pre-verbal Position

Moyne & Carden (1974) proposed that Persian clausal arguments originate pre-verbally, and they are dominated by an NP. They suggested that clausal arguments move into post-verbal position by an obligatory extraposition rule. Consider the following examples from Moyne& Carden (1974).

- 5) man farmân dâd-am [ke Žâle bi-yâ-d].
 I order gave-1stsg. that Ž. Subj-come-3rdsg.
 ‘I ordered that Žâle come.’
- 6) man [_{Inf} âmadan-e Žâle-râ] farmân dâd-am.
 I come-Ez Ž. ACC order gave-1stsg.
 ‘I ordered Žâle to come.’

Moyne& Carden (1974) suggested the following underlying structure for (5).

DIAGRAM (6-2)

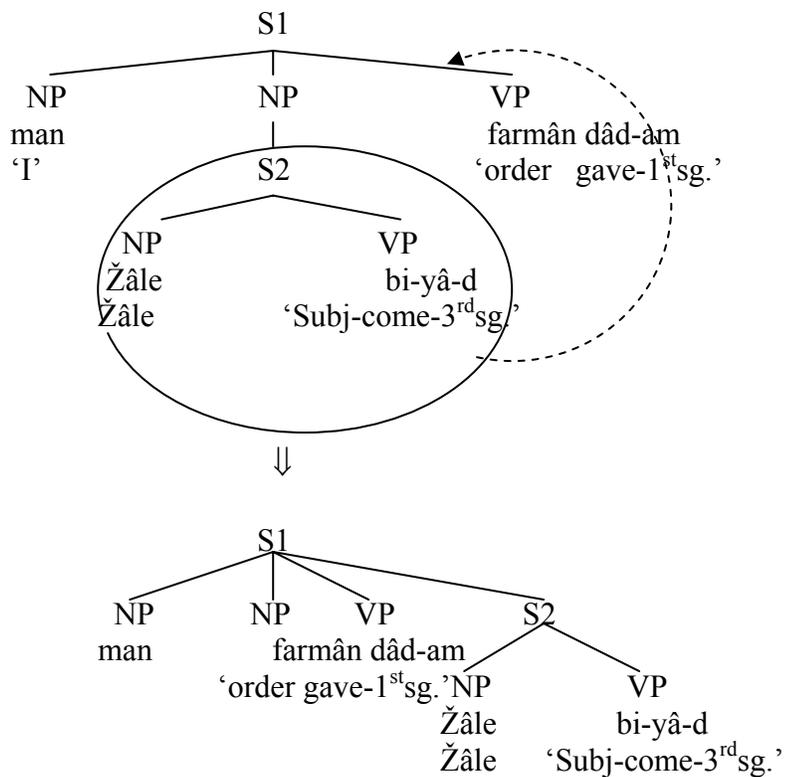


As the structure in diagram (6-2) shows, the clausal argument is in pre-verbal position.

Moyne & Carden (1974) suggested that an extraposition rule moves the pre-verbal clausal argument into the post-verbal position, as illustrates in diagram

(6-3).

DIAGRAM (6-3)



Soheili-Isfahani (1976) also suggests that Persian clausal arguments are base-generated pre-verbally. He basically agrees with Moyne & Carden (1974) and explains the extraposition of clausal arguments in terms of a constraint against central-embedding of the subject and object complements. Consider the following examples from Soheili where the embedded complement in (a) is preceded by pronominal *in* ‘this’³⁹, and in (b) *in* ‘this’ is omitted from the complement. The sentence in (c) with an extraposed complement is grammatical.

- 7) a. *[*in ke mâ ânâ-râ na-dide-im*] bad ast.
 it that we they-ACC not-seen-1stpl. bad is
 ‘It is bad that we have not seen them’
- b. *[*ke mâ ânâ-râ na-dide-im*] bad ast.
 that we they-ACC not-seen-1stpl. bad is
- c. bad ast [*ke mâ ânâ-râ na-dide-im*].
 bad is that we they-ACC not-seen-1stpl.

(Soheili 1976: 87, 12a-c)

Soheili (1976:89), following Kuno (1975:120), attributes the unacceptability of (7a&b) sentences to the fact that the clausal arguments are all centrally embedded, thus they reduce comprehensibility. Therefore, he proposes that the extraposition is obligatory in these cases.

Soheili’s proposal on obligatory extraposition rule is not borne out with Persian data in (8) since extraposition is optional in these constructions and the sentences are grammatical⁴⁰.

³⁹ It is worth noting that for Soheili *in* is equal with pronominal ‘it’ in English.

⁴⁰ In these examples of a preverbal clausal complement, the CP is also embedded in a PP.

- 8) a. Sârâ [PP az [DP in [CP ke dar in mosâbeqe barande na-šode]]] xeyli
 S. from this that in this competition winner not-become-3rdsg. very
 šarmande ast.
 ashamed be-3rdsg.
 ‘Sârâ is ashamed that she did not win the competition.’
- b. Sârâ xeyli šarmande ast az in ke dar in mosâbeqe barande
 S. very ashamed is-3rdsg. from this that in this competition winner
 na-šode.
 not-become-3rdsg.

Dabir Moghadam (1982:57) suggests that clausal arguments originate as a prepositional complement from a pre-verbal position. He gives some piece of evidence for his proposal. Consider the following sentences.

- 9) a. mâdar bačče-hâ-râ be [NP in [S ke qazâ-y-e šân –râ be-xor-and]] vâdâr kard.
 mother child-pl-ACC to this that food-Ez their-ACC Subj-eat-3rdpl. forced made-3rdsg.
 ‘The mother forced the children eat their food.’
- b. mâdar bačče-hâ-râ (be in) vâdâr kard [S ke qazâ-y-e šân –râ be-xor- and].
 mother child-pl-ACC to this forced made-3rdsg. that food-Ez their-ACC Subj-eat-3rdpl.
 ‘The mother forced the children eat their food.’

(Dabir Moghadam 1982:57, 90a &b)

Dabir Moghadam (1982:57) notes that in (9a) the complement preceded by the preposition *be* ‘to’ appears pre-verbally. However, in (9b), the complement optionally undergoes extra-position.

Another piece of evidence comes from the sentences in (10) in which the complement appears between the non-verbal element and the light verb of the complex predicates.

- 10) a. mâdar bačče-hâ-râ vâdâr-(e) be [NP in [S ke qazâ-y-e šân –râ be-xor-and]]
 mother child-pl-ACC forced-(Ez) to this that food-Ez their-ACC Subj-eat-3rdpl.
 kard.
 made-3rdsg.

- b. mādār bačče-hâ-râ vâdâr-(e) (be in) kard [s ke qazâ-y-e šân -râ
 mother child-pl.-ACC forced (Ez) to this made-3rdsg. that food-Ez their-ACC
 be-xor-and].
 Subj-eat-3rdsg.

(Dabir Moghadam 1982:58, 91a &b)

The last piece of evidence that he presents comes from the occurrence of the infinitival nominalized form of the clausal argument occurring in the pre-verbal position. This is illustrated in (11).

- 11) a. mādār bačče-hâ-râ [NOM be xord-an-e qazâ-y-e šân] vâdâr kard.
 mother child-pl. ACC to eat-inf-Ez food-Ez their-3rdpl. forced made-3rdsg.
 b. mādār bačče-hâ-râ vâdâr-(e) be [NOM xord-an-e qazâ-y-e šân] kard.
 mother child-pl. ACC forced-(Ez) to eat-inf-Ez food-Ez their-3rdpl. made-3rdsg.

Based on the above data, Dabir Moghadam (1982) concludes that clausal complements are derived from a prepositional phrase in the pre-verbal position.

1-2. The Problem of Pre-verbal Position of Clausal Arguments

Karimi (1989:183, 184) criticizes Dabir Moghadam's suggestion that clausal argument is dominated by an NP node that originate in the preverbal position. Consider the following sentences in (12).

- 12) a. unâ porsid-an [s ke mâ movafaq šod-im.]
 they ask-3rdpl. that we successful become-1stpl.
 'They asked if we had succeeded.'
 b. *[s ke mâ movafaq šod-im] porside šod.
 that we successful became-3rdpl. asked become-3rdsg..

Karimi maintains that if the clausal complements are under the node of NP they should have a grammatical passive form in which they move into the surface subject position. However, as (12b) shows, the passive form of these sentences results in ungrammatical sentence.

It is worth noting that the complementary distribution of clausal complements and NP complements in (12) does not show the clear picture of the problem of Dabir Moghadam's proposal regarding the CP position. Even if the clausal complement is in post-verbal position, the passive form of the sentence is ungrammatical as illustrated in (13).

- 13) ?? *porside šod* [S' ke mâ movafaq šod-im.]
 asked became-3rdsg. that we successful became-3rdpl.

If we change the verb *porsidan* 'to ask' to *goftan* 'to say' the problem will be clearer, as shown in (14).

- 14) a. *unâ goft-an* [S' ke Sârâ movafaq šod]
 they said-3rdpl. that S. successful become-3rdsg.
 'They said that Sârâ had succeeded.'
- b. *[S' ke Sârâ movafaq šod] *gofte šod.*
 that we successful became-3rdsg. said-Prt become-3rdsg..
- c. *gofte šod* [S' ke Sârâ movafaq šod]
 said-Prt become-3rdsg. that S. successful become-3rdsg.

The second problem with analyzing clausal complements as embedded in NPs, which is highlighted by Karimi (1989:186), is that there are verbs which take a clausal argument but are not subcategorized for an NP complement. Consider the following examples taken from Karimi (1989:186, 128 a & b).

- 15) a. *mo'alem gozâšt* [S' ke Sepide be kelâs be-r-e].
 teacher let that S. to class Subj-go-3rdsg.
 'The teacher let Sepide go to class.'
- b. * *mo'alem* [_{NP} in-o [S' ke Sepide be kelâs be-r-e] gozâšt].
 teacher this-ACC that S. to class to-go-3rdsg. let

As (15b) shows, the verb *gozâšt* ‘let’ is not subcategorized for NP and this is supported by the ungrammaticality of the passive form in (15c).

1-3. Clausal Arguments in a Post-Verbal Position

Karimi (1989, 2001, 2005) suggests that clausal arguments are base-generated post-verbally. Karimi (1989:194), according on Stowells’ (1981) Case Resistance Principle repeated in (16) proposes that clausal arguments in Persian are base-generated post-verbally, since this position is immune to case assignment and clausal arguments resist case-assignment.

- 16) **Case Resistance Principle**
Case may not be assigned to a category bearing a case assignment feature.

(Stowel 1981:146)

Karimi (2001:84), based on the position of clausal arguments in complex DPs and relative clauses, argues that if the post-verbal CP were base generated in the preverbal position, and had moved into the post verbal position, extraction out of it would not be possible since it would be in adjunct position. This was shown in (17) and (18) where the CP is the part of the Complex DP or relative clause. She suggests that the fact that we can extract from CPs in (19b) shows that they are base generated in their surface position. Thus she points out that the relative clauses and the clausal arguments in complex DPs are in pre-verbal position, as we noted for PPs containing complement in (8) and (9).

- 17) a. in vaqeiyat [CP ke Ramin bigonâh-e] barâ hame rošan-e.
 this fact that R. innocent-be-3rdsg. for everyone clear-be-3rdsg.
 ‘The fact that Ramin is innocent is obvious to everyone.’

(Karimi 2001:78, 51)

- b. *Ramin_i in vaqeiyat [CP ke t_i bigonâh-e] barâ hame rošan-e.
R. this fact that innocent-be-3rdsg. for everyone clear-is-3rdsg.
- 18) a. un ketâb-i [CP ke Sepide diruz mi-xund] ru miz-e.
that book-Rel that S. yesterday Dur-read-Pst-3rdsg. on table-be-3rdsg.
'That book that Sepide was reading yesterday is on the table.'
(Karimi 2001:78, 52)
- b. *Sepide_i un ketâb-i [CP ke t_i diruz mi-xund] ru miz-e.
S. that book-Rel that yesterday Dur-read-Pst-3rdsg. on table-be-3rdsg.
- 19) a. man mi-dun-am [CP ke Kimea un ketâb-o xaride.]
I Dur-know-1stsg. that K. that book-Acc bought-have-3rdsg.
'I know that Kimea has bought that book.'
- b. un ketâb-o_i man mi-dun-am [CP ke Kimea t_i xaride.]
that book-Acc I Dur-know-1stsg. that K. bought-have-3rdsg.
'As for those books, I know that Kimea has bought them.'
(Karimi 2001:84, 9)

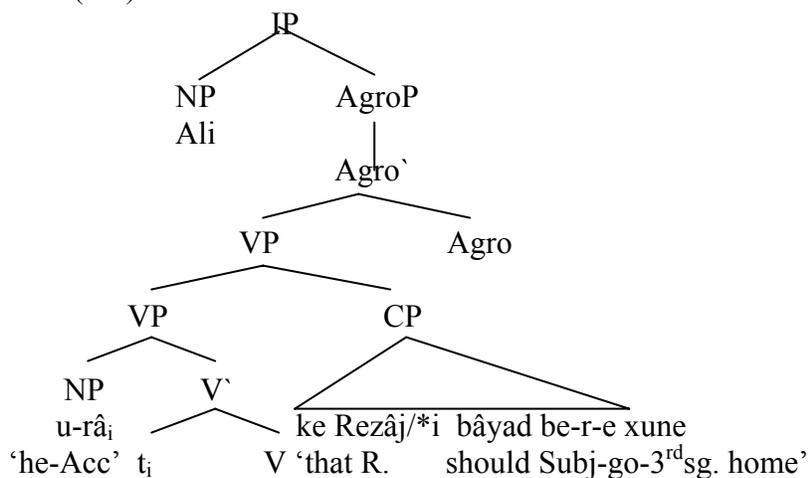
Therefore, extraction out of CPs can not be an authentic evidence for pre-verbal or post-verbal position of them.

Darzi (1996:70), following Karimi (1989), suggests that clausal arguments of the verbs follows the verbs. In the case of the extraction out of CP arguments of the verbs, he explains that the complement clause should either be base-generated as a sister of the verb to the right or must have moved into the right of the verb preserving its L-marking property from a position preceding the verb before being extraposed. The second alternation is ruled out, because if complement clauses in Persian were base-generated pre-verbally and extraposed, then they might right adjoint to the vP and the arguments inside the complement clause would not be in the c-command domain of the matrix direct object, and this is incompatible with the phrase structure of Persian in

which the matrix object c-commands the complement clause. This is illustrated in sentence (20) diagram (6-4).

- 20) Ali u-râ_i qâne' kard ke Rezâj/*i bâyard be-r-e xune.
 A. he-Acc convinced did-3rdsg. that R. should Subj-go-3rdsg. home
 'Ali convinced him that Rezâ should go home.'

DIAGRAM (6-4)



(Darzi 1996:68, 39)

To summarize, in this section we have presented a brief discussion of different proposals on the position of clausal arguments of the verbs. We saw that all of them have some flaws. However, let's assume that the clausal arguments of the verbs are base-generated post verbally. Then the question of interest is: how can this hypothesis account for the word order of the CP in Persian complex predicates? I address this question in the next section.

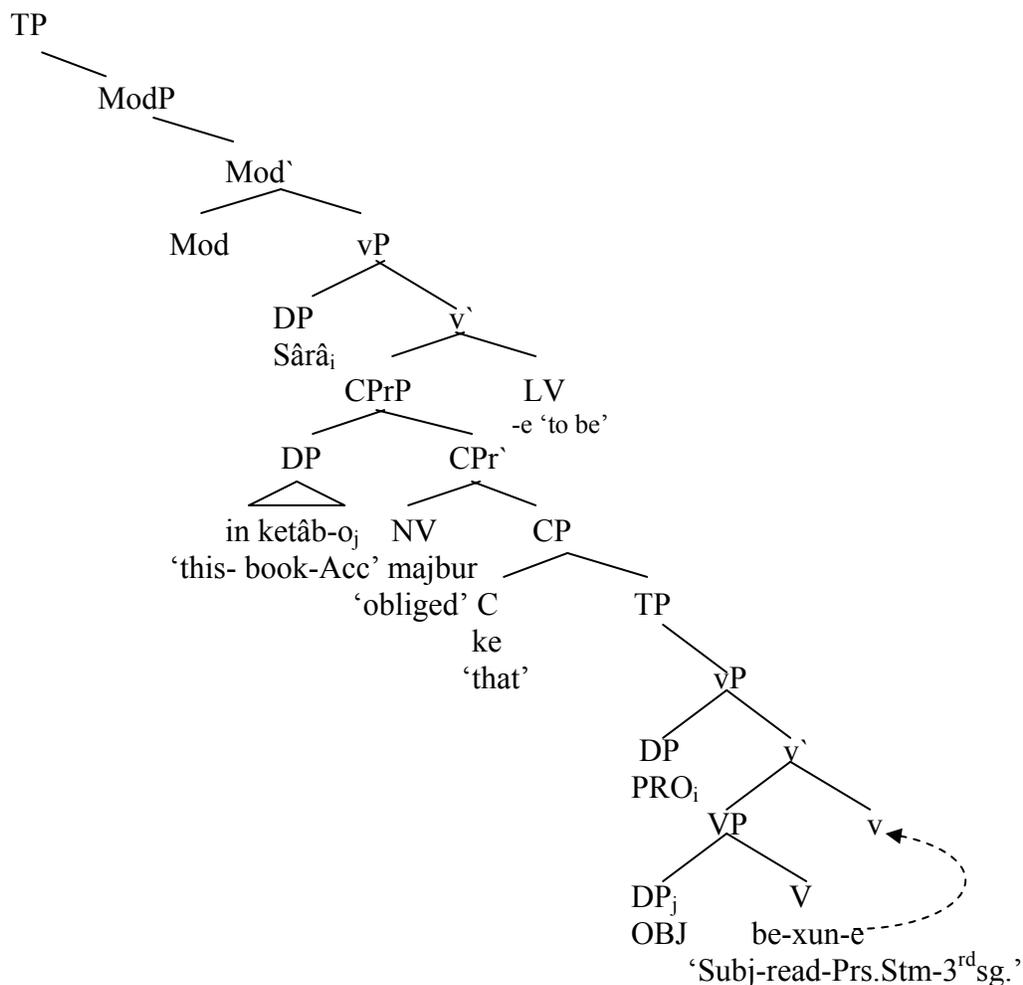
2. The Position of Clausal Arguments inside Complex Modal Predicates

The order of non-verbal elements and the light verbs in Persian complex predicates is a critical problem for the proposals based on the base-generated post

verbal position of clausal arguments of the verbs. Consider example (4) and its structure in diagram (6-1), repeated in (21) and diagram (6-5) respectively.

- 21) Sârâ majbur-e (ke) in ketâb-o be-xun-e.
 S. obliged-be-3rdsg. that this book-ACC Subj-read-3rdsg.
 ‘Sârâ is obliged to read this book.’

DIAGRAM (6-5)



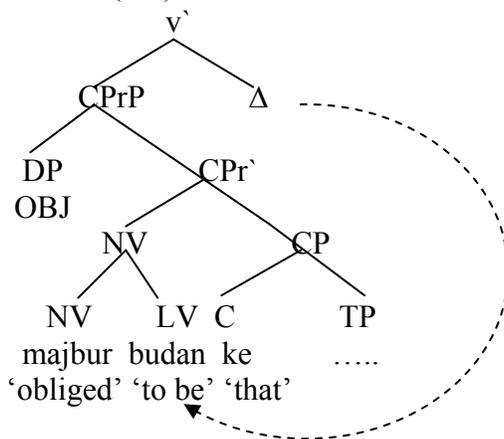
As the structure in diagram (6-5) shows, assuming that the non-verbal element is the complement of the right-headed light verb, predicts that the CP occurs in between the non-verbal element *majbur* ‘obliged’ and the light verb *-e* ‘to be’ while the actual

sentence shows that CP follows the light verb. If Persian clausal arguments are base-generated post-verbally how can the above underlying structure be accounted for? How does CP end up following the light verb position in (6-5)? I have three alternative proposals for this problem. I discuss the strong and weak points of each one of them.

2-1. Lowering LV

If Persian clausal complements of the verbs are base-generated post-verbally one solution could get the right word order is that the light verb in the complex modal predicates lowers down and adjoins to the non-verbal element. In this way, the CP follows the complex predicate. Therefore, we would have the following structure for the complex predicate in diagram (6-6).

DIAGRAM (6-6)

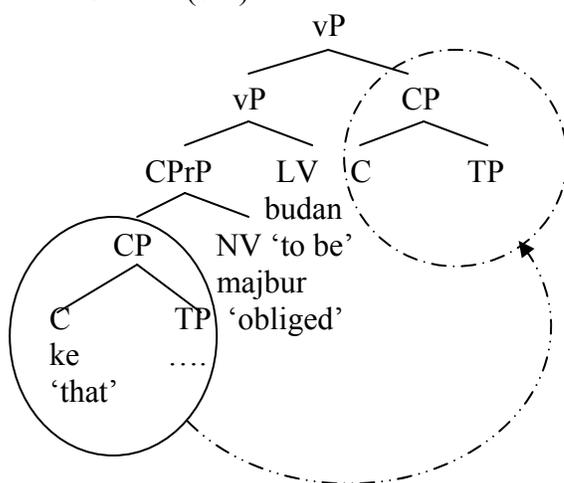


As the structure in (6-6) shows, LV lowers down and adjoins to the NV. The main problem of lowering is that the trace is not bound and this is a violation of the ECP principle. (Chomsky 1986). Additionally, these elements are not morphologically united into a single phonological word, which is the main motivation for the most well-supported lowering analysis of English past tense *-ed* (Bobaljik 1994).

2-2. Extraposition of CP

Another alternative is that to reject the post-verbal base-generated hypothesis and assume that CP is in pre-verbal position and moves to the right of the verb. This solution gives us the right order of the non-verbal element and light verbs in complex predicates. Thus we have the structure like (6-7).

DIAGRAM (6-7)



However, there are some theoretical problems with this solution in addition to the empirical problems noted above. First, movement is usually assumed to be a leftward operation not rightward. Second, there is no clear motivation for rightward movement in this case. (Remember that the center-embedding motivation proposed by Soheili (1972) runs into problems with PP+NP–embedded CP which may occur preverbally.)

2-3. Remnant Movement

Karimi (2001) proposes VP remnant movement as a tentative solution for the movement of non-specific object in (22), the verbal modifiers in (23), and the indirect object in (24).

- 22) man az mardî xune xarid-am [CP ke to be man mo'arefi kard-i.]
 I of man house bought-1stsg. that you to me introduction did-2ndsg.
 'I bought a house from a man that you introduced to me.'
- 23) man un ŠE'R-i-ro xeyli dust dâr-am ke Kimea barâ-am xund.
 I that POEM-Rel-ACC very friend-have-1stsg. that K. for-1stsg. read-3rdsg.
 'I like the poem very much that Kimea read for me.'
- 24) man un ketâb-i-ro be Kimea dâd-am ke Sepide diruz xarid.
 I that book-Rel-ACC to K. gave-1stsg. that S. yesterday bought-3rdsg.
 'I gave Kimea the book that Sepide bought yesterday.'

(Karimi 2001:87-88, 80, 83, 89)

She presents the following steps of remnant movement for (24):

a. Step I: [D+N] moves into [Spec, K_SP⁴¹]

man [VP [K_SP [un ketâb-i-ro]_i [DP t_i [CP ke Sepide diruz zarid]]]]....

→Relative clause moves out of the VP

man [CP ke Sepide diruz xarid]_K [VP [K_SP [un ketâb-i-ro]_i [DP t_i t_k]]]....

b. Step II: VP moves

man [FP [VP [K_SP [un ketâb-i-ro]_i [DP t_i t_k]]]_j be Kimea dâd-am [CP ke...]_k t_j

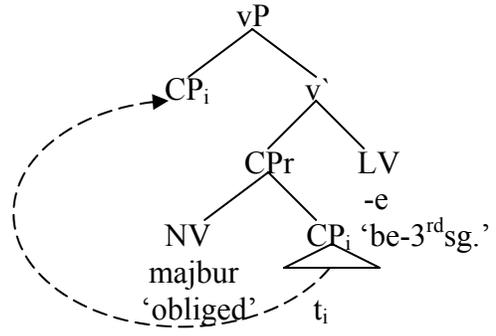
Karimi (2001:88) explains that the movement in step II is triggered by the focus feature. Since VP has a focus feature, it must move into the Spec of FocP. She proposes that CP does not have this feature, and hence it must move out of VP before remnant movement. Can VP remnant movement be a solution for the position of the CP in Persian complex modal predicates?

For VP remnant movement in complex modals, we could propose the following steps:

⁴¹ Karimi (1996) suggests that râ is the head of the maximal projection K_SP. râ as the head of K_SP shows the dual property of the râ, as a case assigner and an specificity marker.

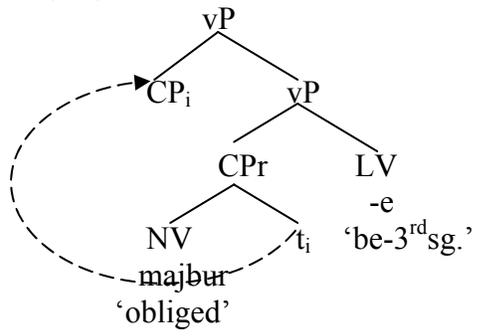
Step I: CP, which is inside the CPr moves out leftward of the CPr and lands at the edge of vP phase as illustrated in diagram (6-8).

DIAGRAM (6-8)



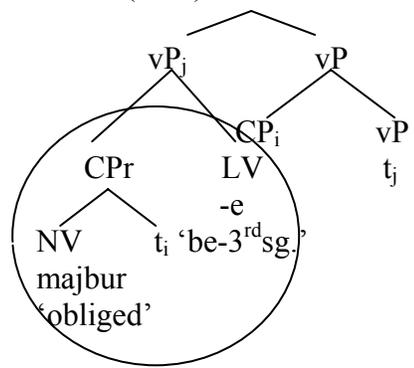
Thus, the NV and LV are adjacent to each other and the NV and LV are now in the right order. This is shown in diagram (6-9).

DIAGRAM (6-9)



Step II: The lower vP which includes the right order of NV-LV, moves into the Spec of FocP for matching focus feature. This is illustrated in diagram (6-10).

DIAGRAM (6-10) FocP



The main question that arises here is what is triggered the movement of CP? Following Holmberg (1999), I suggest that this movement is a kind of object shift movement and object shift movement is triggered by the [-Focus] feature. This analysis also proposed by Karimi (2001:91) for the CP in Complex DP. Karimi (2001), however, rejects remnant vP movement for the lack of motivation for all those ad hoc movements out of vP prior to remnant vP movement.

The main problem of vP remnant movement which is suggested by Mohajan (2003) and Karimi (2001) is that the trace of CP is not bound with its antecedent. In Chomsky's (2001b) Phase Theory, there is a solution for this problem. Following Chomsky (2001b), I suggest that the binding relation occurs before moving the vP into the edge of FocP. In this way, the trace of CP is bound by its antecedent before moving into the edge of FocP.

It is worth noting that remnant movement is also critical in analysis motivated by Kayne's (1994) Linear Correspondence Axiom (LCA) and Mahajan (2003).

3. Conclusion

In this chapter, I have discussed the problem of the word order of NV and LV within complex modal predicates. First, I have presented a brief overview of different proposals regarding the position of CP in Persian. In this section, we have seen that there are some proposals in which CP is located in the pre-verbal position and I have presented some main problems of these proposals. Then I have discussed Karimi (1989, 2001, 2005) and Darzi (1996) in which the CP is base-generated post-verbally. Finally, I have proposed three suggestions regarding the CP argument position in complex

predicates and I highlighted the advantages and disadvantages of each proposals. Based on the given discussion, the last proposal– i.e., vP remnant movement is the most reasonable one and it is compatible with new theories and suggested for some other languages such as Romance languages (Kayne 1994) and Hindi (Mahajan 2003).

CHAPTER 7

CONCLUDING REMARKS

Concluding Remarks and Further Research

This dissertation is focused on the morpho-syntactic and semantic analysis of operators such as modal, tense, aspect and negation in Persian. The main question addressed in this research is: does morpho-syntactic structure of the operators, especially modals, map on the semantic interpretation of them or vice-versa?

The discussion of the syntactic representation of modals has shown that, in contrast to English and German, Persian modals are represented by control constructions, as well as pseudo-raising constructions in a few cases, since Persian does not have true raising constructions. I have proposed that Persian modals are instances of syntactic control except the complex modal *majbur budan* ‘to be obliged,’ which is the semantic control in the sense of Wurmbrand’s (1999, 2001) proposal. Those modals with the default agreement third person singular like *lâzem budan* ‘to be necessary,’ *momken budan* ‘to be possible,’ *ehtemâl dâštan* ‘to have possibility,’ and *emkân dâštan* ‘to have possibility,’ and those which are defective verbs such as *bâyad* ‘must,’ and *šâyad* ‘may’ are represented by pseudo-raising constructions in which their surface subjects originate from the lower clause and the lower verb assigns the theta roles to the subject. In contrast to Wurmbrand’s (1998) proposal in that all semantic control constructions are instances of restructuring constructions, I have shown that Persian semantic controls do not appear in restructuring context, and the only case of

restructuring in Persian is a functional restructuring which includes two pseudo-raising modal verbs *bâyad* ‘must,’ and *šâyad* ‘may.’

The discussion of the structural position of Persian modals has shown that there is no one-to-one correspondence between the semantic interpretations and the syntactic structure of these operators. Persian modals are located in different structural positions, i.e., epistemic modals locate in T and root modals locate in Mod^o.

The categorization of Persian modals into auxiliary and complex modals highlights some lexical semantic features of Persian complex predicates in general and complex modals in particular. All Persian complex modals are atelic, except *majbur šodan* ‘to be forced’ which is telic because of the inherently telic LV *šodan*. Furthermore, the interaction of modals and event structure has shown that root, deontic modals are compatible with eventive verbs, while epistemic modals are compatible with both stative and eventive verbs. The dynamic modals *Lâzem budan* ‘to be necessary,’ *ehitiyâj dâštan* ‘to need,’ and the doentic modal *majbur budan* ‘to be obliged’ show a restricted behavior with respect to the telicity of the embedded verb: in particular, when the embedded verb is stative. Root modals often compatible with eventive embedded verbs and incompatible with the stative embedded verbs, while these modals are also compatible with stative modals.

Interestingly, there is an interaction between the event class and the aspectual marking of the complement verb in Persian. Eventive verbs in complement of an epistemic modal must occur in the perfect while stative verbs must occur in the

present. Therefore, we can say that making a verb perfective is tantamount to making it stative.

There are some overlaps between two operators: tense and aspect in some languages. This overlap has been shown in the discussion of the tense and aspect in Persian. Moreover, I have categorized Persian complex verbal forms into three main groups: 1) Complex predicates which are composed of NV elements (nominal, adjectival, particle, and preposition) and the LVs. 2) Verbal complex predicates which are formed of past participles and the auxiliary verb *budan* ‘to be’ (e.g., present and past perfect) or the auxiliary verb *xâstan* ‘want’ and the verbs (e.g., future tense). 3) Bi-clausal predicates in progressive tenses. These complex predicates are formed of the auxiliary verb *dâštan* ‘to have’ and the simple present tense or past imperfective verbs.

I have also suggested that the morpho-syntactic structure of Persian future tense show the properties of Serial Verb Constructions (SVCs). In the case of morpho-syntactic structure of Persian progressive tenses, I have proposed that these are instances of the Aspectual Complex Predicate which is a kind of SVCs. SVCs are verbal constructions which can stack several events in a single clause and share at least one and possibly more arguments. The complex takes only one subject or external argument. Aspectual Complex Predicates are those complex in which one of the verbs in the complex makes no semantic contribution other than aspect, and its only function is the expression of stativity. The morpho-syntactic structure of tenses reveals the event structure and semantic notions of them. In the case of Persian progressive tenses, I have

suggested that the verb *dâštan* ‘to have’ is an aspectual verb which gives the stative notion to the progressives. Thus Persian progressives are stative.

Based on the fact that Persian progressives are stative events, I have proposed that the reason why Persian progressives lack direct negative forms originates from semantic factors rather than morpho-syntactic reasons.

Negation—as an operator—is interesting because of its syntactic position, and its complicated interaction with other logical operators such as tense and modals. In the morpho-syntactic discussion of negation, I have shown that Persian negation is the morphological negation which is attached pre-verbally. From syntactic view, Persian sentential negation is represented as a head of the maximal projection (NegP) which is c-commanding TP.

Since most of Persian modals are complex predicates the interaction of the modal with the negation shows the interesting results. In this research, I have presented two main strategies: Modal Suppletion Strategy (MSS) and Negation Placement Strategy (NPS) with respect to the interaction of modals and the negation. According to Persian data, I have proposed that Persian is an NPS language. Negation may take wide or narrow scope over root modals depending on its position, except in the dynamic root modal *ehdiyâj dâštan* ‘to need’ where negation may only take the wide scope over the modal. However, the interaction of the negation with Persian epistemic modals shows inconsistent behavior with respect to scope. The negation may only take the narrow scope with respect to the epistemic modals *šâyad* ‘may,’ and *ehemâl dâštan* ‘to be probable/likely.’ It may take both the wide scope and the narrow scope in the case of

emkân dâšťan ‘to be probable/likely.’ Therefore, we can conclude that the structural analysis of the interaction of Persian modals and negation shows that the syntactic structure maps on the semantic interpretation or vice-versa. There are just a few gaps with respect to the scope possibilities of particular modals.

Persian is an SOV language. This means that the direct object precedes the verb if it is non-specific, and if it is specific it is marked by the specific marker *râ*. The syntactic structure of complex modals and the interaction of these modals with the negation result in a wrong word order if we assume that the SOV order is an underlying word order in Persian. At the end of this research I have suggested three tentative proposals for this problem.

The first suggestion is *Lowering LV* in that the light verb in the complex modal predicates lowers down and adjoins to the non-verbal element. The main problem of lowering is that the trace is not bound and this is the violation of the ECP principle. (Chomsky 1986).

The second alternative is that we assume that CP is in pre-verbal position and *extraposes* to the right of the verb. There are some theoretical problems with this solution. First, movement is the leftward operation not rightward. Second, there is no motivation for rightward movement in this case. The last proposal is *Remnant Movement*. For the remnant movement of complex modals first, CP, which is inside the complex modals moves out of the complex and lands at the edge of vP phase. Then NV and LV are adjacent to each other and they will be in the right order. Finally, Lower vP which includes the right order of NV-LV, moves into the Spec of FocP for matching

focus feature. It is worth noting that since Persian is a scrambling language, I have assumed that the remnant movement is triggered by the focus feature. Thus at the end of the remnant movement the whole vP is in focus position and the movement of CP is also focus triggered. The main problem of vP remnant movement is that the trace of CP is not bound with its antecedent. In Chomsky's (2001b) Phase Theory, there is a solution for this problem. Following Chomsky (2001b), I have suggested that the binding relation occurs before moving the vP into the edge of FocP. In this way, the trace of CP bound with its antecedent before moving into the edge of FocP.

There are some unresolved issues that I leave them for further research. These issues are as follows:

In this research, I have shown that in modals, there is no one-to-one correspondence between the syntactic structures and semantic interpretations. However, the interaction of modals and tense with negation shows that syntactic structure maps on the semantic interpretation. A question of interest is: how do Persian quantifiers, as operators interact with negation? Does the syntactic structure of quantifiers map on their semantic interpretation or not?

In the case of the interaction of the epistemic modal *šâyad* 'may', and *ehtemâl dâštan* 'to have possibility,' negation only has the narrow scope and in the case of the dynamic root modal *ehtiyâj dâštan* 'to need,' negation has wide scope over the modal and the proposition. A question arises here is, why does the negation has wide scope in *ehtiyâj dâštan* 'to need' and only has narrow scope in the epistemic modal *šâyad* 'may', and *ehtemâl dâštan* 'to have possibility'?

In the case of the interaction of the dynamic modals *lâzem budan* ‘to be necessary’ and *ehdiyâj dâštan* ‘to need,’ a question that arises here is, why are these root modals, in contrast to deontic root modals and similar to epistemic modals, compatible with both stative and eventive verbs?

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