

Chapter 4

Operator projection

4.0. Introduction

As it was mentioned in Chapter 1, RRG posits four grammatical representations for each sentence. Semantic and syntactic projections were investigated in preceding chapters. This chapter deals with operator projection in Farsi. The organization of this chapter is as follows: in Section (4.1), I will introduce the RRG notions of operators. Section(4.2), analyzes different grammatical categories such as aspect, negation, directionals, etc. in Farsi using the RRG theory of operator system. Then, the linear order of different operators in Farsi and the formal representation of operator projection combined with the constituent projection will be presented. Section (4.3) will be the summary of this chapter.

4.1. Operator Projection in RRG

Grammatical categories such as aspect, tense, directionals and modality are treated in RRG as operator constituent, modifying different layers of the clause. The operators consist of morphemes which are the realization of the grammatical categories, while the constituents of the LSC consist of the predicate, its arguments and periphery. These categories are analyzed as the syntactic head of a

maximal projection in mainstream Generative Grammar (Radford 1997, Cook and Newson 1996, Cowper 1992).¹ On this view a functional category (i.e. operator) serves as head of the clause. The sentence is therefore an Inflectional Phrase (IP). On the contrary, RRG treats lexical and functional categories quite differently. There is no possibility of an operator being taken to be the head of a lexical phrase. In RRG the head of a phrase is a function of its semantics: an NP is headed by a nominal nucleus, a PP by an adpositional nucleus, and a clause by a predicated element.

I will not attempt to present a complete analysis of these categories in this chapter. Rather, I will merely provide a place for them so that I can show how Farsi follows the RRG's operator system and supports the assumption that the ordering of the morphemes expressing these categories reflects their scopes.

VanValin and LaPolla (1997) present some examples of operators as follows.

(4.1) a. **Nuclear operators:** Aspect, Negation, Directionals (only those modifying orientation of action or event without reference to participants).

b. **Core operators:** Directionals (only those expressing the orientation or motion of one participant with reference to another

participant or to the speaker), Modality (root modals, e.g. ability, permission, obligation), Internal negation.

c. **Clausal operators:** Status, Tense, Evidentials, Illocutionary force.

The nuclear operators modify the action, event, or state itself, without reference to the participants. Aspect is a nuclear modifier since it mirrors the internal temporal structure of the event itself, without reference to anything else. Some directionals are considered as nuclear because they indicate the direction of the action without reference to the participants. However, some directionals are core because they exhibit the direction of motion of one of the core arguments.

Core operators such as directionals and modality have scope over the whole core and thus over nucleus and the arguments. Core operators modify the relation between the arguments and the action or event. There are two groups of clausal operators. The first group includes the tense and temporal and realis-irrealis scale. The second group of operators of clausal level includes evidentials and the illocutionary force. Evidentials indicate the epistemological basis of the proposition. The illocutionary force (IF) operator stipulates the type of speech act.

Operators are qualitatively different from predicates and their arguments. Therefore, they are represented in a separate projection of the clause from predicates and arguments. VanValin and LaPolla (1997:47) represent the operator projection as the following figure.

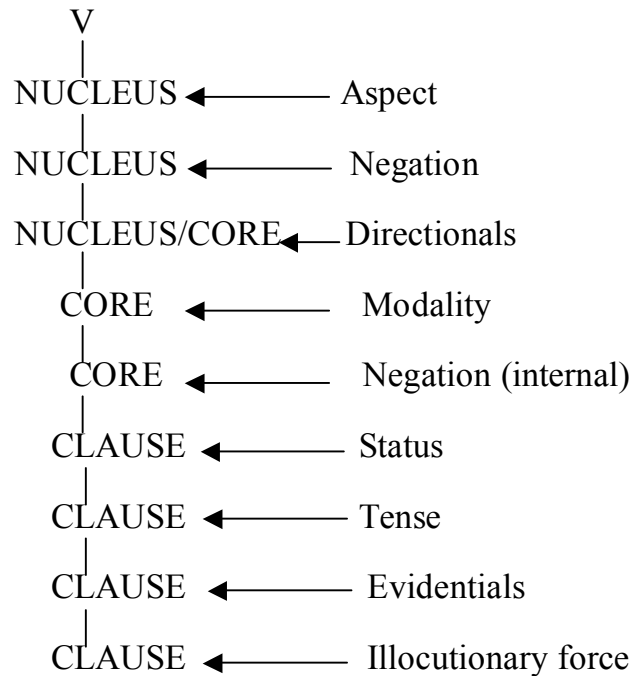


Figure 4.1 Operator projection in LSC

As it can be seen, the operator projection mirrors the constituent projection in terms of layering; thus ‘nucleus’ in the operator projection matches with the ‘nucleus’ in the constituent projection, and so on. RRG claims that there is a relative order among the morphemes with reference to the nucleus and assumes that the ordering manifests their relative scopes. It is believed that the morphemes realizing nuclear operators should be closer to the

nucleus than those realizing core or clausal operators, and those expressing core operators should be between those realizing nuclear operators and clausal operators and those manifesting clausal operators should be outside of those signaling nuclear and core operators.² There are two possible linear ordering of operators depending on the position of verb stem, as in (4.2).

(4.2) a. IF-EVID-TENSE-STATUS-MOD-DIR-ASPECT-Verb stem

b. Verb stem-ASPECT-DIR-MOD-STATUS-TENSE-EVID-IF

This ordering can be validated from the large number of languages that are studied in Foley and VanValin (1984), Bybee (1985), and Ohori (1992). Foley and VanValin (1984) investigates a large number of different languages related to diverse families.

Bybee (1985) examines the morphemes in pairs to determine their relative order. In a 50-language sample, she finds only one exception to the proposal that aspect occurs closest to the verb stem, with tense and then mood occurring closer to their periphery. Her study can be summarized as follows:

"Aspect markers were found to be closer to the stem than tense markers in 8 languages, while the opposite order did not occur in the sample. There were a total of 18 languages that have both aspect and tense, but in 10 cases their ordering was not relevant to the hypothesis.

Aspect markers were found to be closer to the stem than mood markers in 10 languages, out of a total of 23 that have both aspect and mood. There were no languages in the sample in which the mood marker occurred closer to the stem than the aspect marker.

Aspect markers were found to be closer to the stem than person markers in 12 out of 21 languages. In one language, Navaho, the person markers occur closer to the stem than the aspect marker.

Tense markers occur closer to the stem than mood markers in 8 languages out of 20 that have both tense and mood. In one language, Ojibwa, the mood marker occurs closer to stem than the tense marker.

Tense markers occur closer to the stem than person markers in 8 languages out of 17 that have both tense and mood. In one language, Navaho, the person markers occur closer to the stem than the tense markers.

Mood markers occur closer to the stem than person markers in 13 languages out of 26. In 5 languages the opposite order occurs."

(Bybee 1985: 34-35)

The results of her investigation provide strong evidence for the hierarchical ordering of ASPECT, TENSE, and MOOD that is assumed in RRG.

4.2. Operators in Farsi

Having introduced the RRG's notions of operator projection, now, I investigate different grammatical categories within the framework of this theory. Farsi, like English and other Indo-European languages, expresses some grammatical categories by auxiliary verbs. These categories include Modality and Status. However, Farsi is similar to agglutinative languages like Korean (Yang 1994, Park1995) and Turkish (Watters 1993) in coding some other grammatical categories by a string of verbal affixes. These kinds of grammatical categories expressed by verbal affixes include nuclear operators such as aspect, negation and directionality. In this section, both types of these grammatical categories will be studied. I will propose a new perspective on the grammatical categories in terms of RRG operators. The analysis of Farsi operators will show that this language follows Bybee's (1985) Relevance Principle, which dictates that a morpheme whose meaning is more relevant to the semantics of the verb is positioned closer to the verb stem, and RRG's assumption that the ordering of the morphemes expressing operators with respect to the verbs indicates their relative scopes.

4.2.1. Aspect

Two grammatical categories that have to do with temporal properties are tense and aspect. In general, it is assumed that tense relates the time of a situation to another point in time, while aspect is the internal temporal structure of a situation without reference to another point in time (Comrie 1976:6, Foley and VanValin 1984:209). Aspect tells us about the internal temporal structure of the event. All events take place over a period of time, but for practical purposes we can distinguish events of very short duration, punctual or non-durative, from those of longer duration.

Farsi has two major aspectual categories: imperfective and perfective (Comrie 1976:121, Mahootian 1997,). These two aspectual categories interact with two major tense categories. Hence, Farsi has past/present imperfect and past/present perfect.³ The marker of imperfective, as I mentioned in Chapter 3, is the prefix *mi-* which is added to the main verb. On the other hand, the perfective marker is the suffix *-e* added to the past stem of the verb (Mahootian 1997:240). The following sentences in (4.3) illustrate these two aspectual categories.

(4.3) a. man šeš tâ ketâb xaride-am.

I six book bought-be-1sg

‘I have bought six books.’

b. u dar Tehran zendegi mi-konad.

3sg in Tehran life IMP-do-3sg.

‘He lives in Tehran.’

It is interesting to note that some scholars like Mahootian (1997), Vahidian and Emrani (2000), among others, have enumerated several other types of aspects such as habitual, ingressive terminative, punctual, etc. Mahootian (1997:239) gives the following examples of aspects in addition to perfective and imperfective.

(4.4) a. **Habitual** har ruz berenj mi-xordim.

every day rice DUR-ate-1pl

‘We used to eat rice every day.’

b. **Ingressive** dâr-im šoru’ mi-kon-im dars-be-xun-im

have-1pl start DUR-do-1pl lesson SUBJN-read-1pl

‘We are starting to study.’

c. **Terminative** nâme râ nevešt-am.

letter OBJ wrote-1sg

‘I wrote the letter.’

d. **Punctual** Steve diruz mord.

Steve yesterday died.

‘Steve died yesterday.’

The examples above show that scholars like Mahootian have mixed grammatical aspect with lexical aspect (Aktionsart). As Siewerska (1991:116) points out, grammatical aspect receives overt

morphological coding, while lexical aspect is a matter of the type or class of predicate, and as such falls under the typology of states of affairs discussed in Chapter 2. Therefore, one of the advantages of RRG's verb classification is that it distinguishes grammatical aspect, as an operator, from the lexical aspect or Aktionsart.

The morphological markers of the two aspectual categories occur next to the verb stem. The imperfective marker *mi-* occurs before the verb stem, while the perfective marker *-e* occurs after the verb stem. It will be shown in Section (4.2.3) that aspectual markers are the innermost operators in the nucleus in Farsi.

4.2.2. Negation

In the earlier version of RRG (Foley and VanValin 1984), negation was not regarded as an operator but in more recent versions (VanValin 1993, VanValin and LaPolla 1997) it is considered as an operator. Negation can be a nuclear operator which is realized as a derivational negative like *un-* in unhappy in English (ibid:45). In Farsi negation is morphological (Payne 1985) and the negative morpheme must be considered to form part of the derivational morphology of the verb. The negative prefix *na-/ne* is attached to the verb stem of simple verbs and the verbal part of the stem in compound verbs. In the future and the past perfect, the negative prefix attaches to the stem of the first verbal element. In

the passive, the negative prefix precedes the second verbal element in the construction. Let us look at the following examples.

(4.5) a. ne-mi-xand-am.

NEG IMP laugh-1sg

‘I don’t laugh.’

b. harf ne-mi-zan-im

word NEG IMP hit-1pl

‘We don’t talk.’

c. na-xâh-am raft

NEG want 1sg go

‘I won’t go.’

Negation in Farsi is a nuclear operator and always occurs before the aspect marker (see the next Section). The negative morpheme in Farsi follows Dryer’s investigation of position of negatives in SOV languages. Dryer (1988) investigates 345 languages for a number of cross-linguistic generalizations about the word order position of negative morphemes. He finds that two of the four possible subtypes, subject-object-negative-verb and subject-object-verb-negative are common among SOV languages.

4.2.3. Directionals

The other common nuclear operator in the languages of the world is directional. This grammatical category expresses a directional

orientation of the nucleus, whether the action is up, down, toward, or away from some point of reference (Foley and VanValin 1984). Directional morphemes can either indicate the direction of the action itself, or they can indicate the direction of motion of one of the core arguments. Farsi does not have a rich system of directionals and this grammatical category is ignored in almost all traditional and modern descriptions of this language. In Farsi, directional notions are usually lexicalized into the verb so that speakers may not even be aware that there is a separate meaning component of directionality. Verbs like *hol dâdan* ‘to push’ and *kešidan* ‘to pull’ involve movement in a specific direction, which is either toward the subject or away from it.

(4.6) a. ân-hâ mâšin râ hol mi-dahand.

they car OBJ push IMP-give-3pl

‘They push the car.’

b. asb gâri râ mi-keš-ad.

horse cart OBJ IMP-pull-3sg.

‘The horse pulls the cart.’

However, it should be noted that Farsi adds prefixes to the verb indicating top or down direction. The two main prefixes that indicate this kind of directionality include *bar/var-* and *foru-* (Aboulghassemi 1996: 247, Khanlari 1986:126). The following examples illustrate this notion of directionality.⁴

(4.7) a. xamir var-âmad.

dough DIR-come-PAST-3sg.

‘The dough leavened.’

b. mât bar-âmad.

moon DIR-come-PAST-3sg.

‘The Moon rose.’

c. seyl foru-nešast.

flood DIR-sit-PAST-3sg

‘The flood subsided.’

It is worth noting that only top-down directionals are marked in this way. As I mentioned earlier, Farsi does not have a rich system of directionality and the use of top-down markers is limited to a small number of verbs. Another member of Iranian languages that has a rich system of this kind of directionality is Kurdish (Rezai 1996). Kurdish has two prefixes marking the top or down direction of the verbs. These two prefixes *hal*- and *dâ*- are widely used with a large number of Kurdish verbs, as illustrated by the following examples.

(4.8) a. hal-kêšân ‘to lift up’

a'. dâ-kêšân ‘to hang’

b. hal-xesten ‘to throw straight up’

b'. dâ-xesten ‘to throw straight down’

c. hal-derin ‘to tear straight up’

c'. dâ-derin ‘to tear straight down’

- d. hal-parin ‘to jump straight up’
- d'. dâ-parin ‘to jump straight down’
- e. dâ-kaften ‘to tumble down’
- e'. hal-kaften ‘to be shot up’

Directional morphemes occur before the markers of negation and aspect in Farsi. This is a good piece of evidence indicating that directional morphemes are the outermost operators of the nuclear layer. This is illustrated by the following examples.

(4.9) a. divâr foru-ne-mi-rizad.

wall DIR-NEG-IMP-collapse-3sg

‘The wall does not collapse.’

b. ân-hâ zud az xâb bar-mi-xizand.

they early from sleep DIR-IMP-getup-3sg.

‘They get up early.’

c. xašm-aš foru-ne-mi-nešinad.

anger-poss DIR-NEG-IMP-sit-3sg.

‘His anger does not quench.’

The morphemes marking directions in the above sentences indicate the direction of the verb. These kinds of directional markers are considered as nuclear operators (VanValin and LaPolla 1997:42).

From the above observation, I can suggest the relative order of the directional operator and the two other operators discussed so far, as (4.10).

(4.10) Directional - Negation - Aspect - Verb stem.

It is important to note that this linear ordering follows the RRG operator projection (Foley and VanValin 1984:216).

Interestingly enough, Kurdish also seems to behave well with respect to the linear order of nuclear operators. The following examples from Kurdish follow the relative order in (4.10).

(4.11) a. çây dâ-n-â-kam.

tea DIR-NEG-ASP-do-1sg

‘I don’t pour tea.’

b. âw hal-n-â-kêšem.

water DIR-NEG-ASP-draw-1sg

‘I don’t draw water.’

c. sêfêk dâ-a-kafêt.

apple DIR-ASP-fall-3sg

‘An apple falls down.’

d. la mâšin dâ - n - â - vaz-em

from car DIR-NEG-ASP-land-1sg.

‘I don’t land from the car.’

4.2.4. Modality and Status.

In the linguistic and logical literature the terms mood and modality have been used with reference to a number of apparently disparate phenomena. These terms have been used in confusing and

overlapping ways in the studies of grammatical categories which must be clearly distinguished (Lyons 1995). RRG uses the term modality to refer to what is called the root or deontic sense of modal verbs. This category includes such things as strong obligation (must or have to), ability (can or be able to), permission (may), and weak obligation (ought or should) (VanValin and LaPolla: 41, Papafragou 2000).

Jakobson (1971:135) defined mood as characterizing ‘the relation between the narrated event and its participants with reference to the participants of the speech event’. More particularly, modality characterizes the speaker’s estimate of the relationship of the actor of the event to its accomplishment, whether he has the obligation, the intention, or the ability to perform it.

The other category which is distinguished within the general domain of mood/modality is status. It includes epistemic modality and categories like realis and irrealis. According to VanValin and LaPolla (1997:41) the basic difference between epistemic and deontic modality is necessity and possibility versus obligation and ability. Siewierska (1991:125) points out that the epistemic modality is assumed to be quantifiable on a scale of possibility, deontic modality on a scale of permissibility.

In Farsi, both deontic and epistemic modality are expressed by auxiliary verbs.⁵ These auxiliary verbs include *bâyad* ‘must’, *šâyad*

‘may’, *tavânestan* ‘can’, *šodan* ‘become’, etc. (Aboulghassemi 1996:214, Khanlari 1976, Shari’at 1989, Vahidian 1994, among others). These modal auxiliaries are ambiguous in that they express both deontic and epistemic modalities.⁶ Nevertheless, the auxiliary *šâyad* ‘may’ is an exception and expresses only epistemic meaning. The sentences in (4.12) show that Farsi, like English and many other languages, shares the same modal forms for the two types of modality.

(4.12) a. Ahmad bâyard az injâ be-ravad.

Ahmad must from here SUBJ-go-3sg.

‘Ahmad must leave here.’

b. Ahmad mi-tavân-ad az injâ beravad.

Ahmad IMP-can-3sg from here SUBJ-go-3sg.

‘Ahmad can leave here’

These sentences are both ambiguous. Example (a) can mean either that ‘it is a logical necessity that Ahmad leave here’ or ‘that Ahmad is obliged to leave here.’ Example (b) can mean that ‘Ahmad is able to leave here’ or that ‘Ahmad has permission to leave here.’ This illustrates well the difference between the epistemic and deontic meaning of Farsi modal auxiliaries. As stated before, expressing both deontic and epistemic meanings by the same modal verbs is also found in English and many other languages. Papafragou (2000) refers to this ambiguity as a case of structural polysemy. He

believes that this structural polysemy is resolved pragmatically during the process of utterance comprehension.

Among different modal auxiliaries in Farsi, *šâyad* ‘may’ has a different behaviour in that it always has an epistemic interpretation.⁷ Traditional Grammarians have regarded this auxiliary as the marker of the subjunctive mood (Shafa’i 1983:91, Vahidian 1994). As indicated in Section (4.1), RRG claims that deontic and epistemic modalities are operators at two different layers. The former is an operator of the core layer, the latter of the periphery layer (Foley and Olson 1985). This assumption is also supported by Functional Grammar. Hengeveld (1989) has pointed out that objective modality (RRG’s deontic modality) operates on the predication while epistemological modality on the proposition. I mentioned above that most auxiliary verbs in Farsi are ambiguous in that they express both epistemic and deontic meanings. Hence, one can conclude that speaking of two different layers in this case is irrelevant. However, as stated earlier, there is a modal verb in Farsi that expresses only epistemic meaning. As a matter of fact, this auxiliary always precedes all other auxiliaries. This modal (*šâyad*) is presented in the following examples:

(4.13) a. *šâyad betavân nevešt.*

may can write

‘It is possible that one can write.’

b. *šâyad bešavad raft.*

may can go

‘It is possible that one can go.’

c.* *betavân šâyad nevešt.*

can may write

d.* *bešavad šâyad raft.*

can may go.

As seen from the above sentences, *šâyad* which is an epistemic modal always occurs before deontic modals. In these sentences *betavân* and *bešavad* are deontic modal auxiliaries. The ungrammaticality of (c-d) sentences indicates that epistemic modals have scope over deontic ones. It is a strong evidence for the assignment of the deontic and epistemic to two different layers. Since the obligatory ordering is epistemic before deontic, it can be concluded that epistemic modals belong to an outer layer. Following RRG, I refer to epistemic modals as status and deontic ones as modality.⁸ In sum, it should be noted that the linear ordering of status and modality in Farsi supports the RRG’s assumptions regarding the operator system. As indicated above, at the core layer, there is only a single operator, modality. Foley and Olson (1985:35) have also noted that operators at the core layer are rare.

4.2.5. Tense and Evidentials

Tense is a category which expresses a temporal relationship between the time of the described event and some reference time. Tense locates the time of the reported event with respect to the time of the speech event (Foley and VanValin 1984:208, Comrie 1985b). Traditional Grammarians regard tense as a category of the verb on the basis of its morphological attachment to the verb. On the other hand, some linguists (Lyons 1995) have argued that tense should be regarded as a category of a whole sentence, or in logical terms of the whole proposition, since it is the truth-value of the proposition as a whole, rather than just some property of the verb, that must be matched against the state of the world at the appropriate time point. Foley and VanValin (1984:209) and Foley and Olson (1985) claim that the function of tense is much like the peripheral setting NPs like temporals and locatives, and tense is, in fact, a peripheral-layer operator.

The grammatical system of coding the source of information is referred to as ‘evidentials’ (Foley and VanValin 1984:218, Chafe and Nichols 1986). This category is also referred to as epistemic mood by some scholars (Chung and Timberlake 1985). The evidential expresses how the speaker obtains the information about the situation described. Siewierska (1991:126) states that evidentials indicate the factuality of the proposition in terms of how

the speaker has obtained knowledge of it. Foley and VanValin (1984) show that Kewa has a simple binary distinction, indicating evidential status: seen and unseen.

Farsi, like English and most European languages, does not have a set of evidential verbal suffixes or verbal auxiliaries, but possesses this operator type nevertheless. The function of evidentials is carried out by certain clausal adverbs such as *zâheran* ‘seemingly’, *guyâ* ‘very likely’, *bišak* ‘undoubtedly’, etc. Consider the following sentences.

(4.14) a. *bišak* *bâyad qabul be-šavad*

undoubtedly must accept SUBJ-become-3sg.

‘Undoubtedly s/he must be accepted.’

b. *mosalaman mitavân u râ did.*

certainly can s/he OBJ see.

‘Certainly one can see him/her.’

c.* *bâyad bišak qabul bešavad.*

must undoubtedly accept SUB-become-3sg

d.* *mitavân mosalaman u râ did*

can certainly s/he OBJ see

As seen from the above examples, adverbs functioning as evidentials can appear before modality or status (4.14 a-b). The opposite order in which the evidential is within the scope of modality operator is ungrammatical. In (4.14 a-b) *bišak*

‘undoubtedly’ and *mosalaman* ‘certainly’ are evidential adverbs and occurred before *bâyad* ‘must’ and *mitavân* ‘can’ respectively. This observation leads us to the assumption that evidentials belong to an outer layer and have scope over modality and status operators. Thus, despite the fact that Farsi does not have evidential verbal suffixes, the evidential adverbs follow the RRG’s ordering of operator system.

So far, I have shown that evidentials have scope over modality and status operators. Now, then, what would the relation be between the other clausal operators, i.e. tense, and evidentials? To answer this question we should consider the relative order of temporal and evidential adverbs appearing in the same sentence. As VanValin and LaPolla (1997:165) point out, multiple adverbs in a sentence are constrained by the layers of the operator projection.⁹ In the following examples the evidential adverbs precede the temporal ones. The opposite order yields ungrammatical sentences.

(4.15) a. ânhâ zâheran zud âmad-and.

they seemingly soon come-PAST-3pl

‘Seemingly they came soon.’

b. mosalaman mâ bemoqa’ xâhim raft.

certainly we on time will-1pl go

‘Certainly we will go on time.’

c.* ânhâ zud zâheran âmad-and.

they soon seemingly come-3pl
d.* bemoqa' mosalaman mâ xâhim raft
on time certainly we will-1pl go.

The ungrammaticality of (4.15 c-d) provides significant evidence that temporal adverbs are inner than evidential adverbs. Thus, it can be concluded that evidential operators have scope over tense operators.

4.2.6. Illocutionary force

Illocutionary force is a very important and universal operator. It refers to whether an utterance is an assertion, a question, a command or an expression of wish (VanValin and LaPolla 1997:41). This operator is considered as the outermost operator. An earlier analysis which also argued in essence that illocutionary force is the outermost operator can be found in Ross (1970). Generative Semantists suggested that every sentence contains in its semantic structure a clause that identifies the nature of the speech act performed by means of the sentence (Wierzbicka 1998). Lyons (1995:251) argues that most illocutionary forces are culture specific, however, there are three of them that are widely used and assumed to be universal. He refers to these three as making assertions, asking questions and issuing directives. Sadock and Zwicky (1985) point out that most languages are similar in

presenting three basic sentence types with similar functions and often strikingly similar forms.¹⁰ They term these three basic sentence types declarative, interrogatives and imperative.

Languages use different means for expressing illocutionary force. In English, sentence types can be distinguished by the intonation and word order. As a result, illocutionary force, which marks three basic distinctions is signalled by the position of the tense marker: interrogatives by core-initial tense, declaratives by core internal tense and imperative by no tense (VanValin and LaPolla :42).

In Farsi, Traditional Grammarians have enumerated several sentence types such as declarative, interrogative, imperative, exclamative, optative, etc. (Shafai' 1983, Khanlari 1986 among others). However, among these different types only three of them are basic: declaratives, interrogatives and imperatives (Rezai, to appear). Declarative sentences in Farsi are the unmarked case and no change is effected in the sentence.

Farsi distinguishes declarative from interrogative primarily by intonation. Declarative sentences have a falling intonation in the final position, while interrogative sentences have a rising intonation in the same place (Sepanta 1998:112). This can be illustrated by the following examples.

(4.16) a. Ali âmad. [↘] 'Ali comes'

Ali come -PAST

b. Ali amad. [↗] ‘Does Ali come?’

Ali come-PAST

Another major sentence type in Farsi is imperative. A positive imperative sentence is formed by adding *be-* to the present stem of the verb. In the negative imperative the *be-* prefix is replaced by the negative prefix *na-* as the following examples:

(4.17) a. dars be-xân.

lesson IMPR-read

‘Study!’

b. bâzi na-kon.

play IMPR-do.

‘Do not play.’

The sentence terminal intonations in these three sentence types specify the performative components of situations described by the proposition. Indeed, these intonation contours mark the illocutionary force of sentence. The analysis that the sentence final intonation contours are illocutionary force in Farsi will support the RRG’s operator system which regards illocutionary force as a outermost clausal operator, taking the whole clause as well as the other clausal operators within its scope. As VanValin and LaPolla (1997: 48) point out, the way in which a speaker expresses a

proposition, whether it is a question, an assertion or whatever, concerns the whole clause.

I can summarize the findings of this Section as follows: The operators and their associated layers in Farsi are represented in Figure (4.2). The ordering of the operators reflects their scope relations, illocutionary force having scope over all other operators and all constituents of every layer, and aspect having scope only over the nucleus.

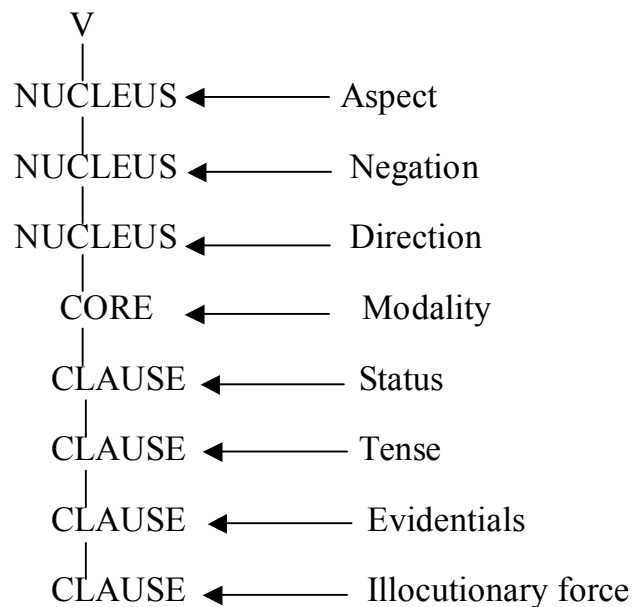


Figure 4.2. Farsi operator projection

Comparing Figure (4.1) with that of (4.2), it can be seen that the operators in Farsi fully follow the RRG operator system and support

RRG assumption that the ordering of the morphemes expressing operators with respect to the verb indicates their relative scope.

Since the operators are qualitatively different from predicates and their arguments, they are represented in a distinct projection of the clause from predicates and arguments. Operators are arranged in terms of ever wider scope with respect to the verb. The operator projection in Figure (4.2) may be combined with the constituent projection represented in Figure (2.17) to yield a more complete picture to the clause, as in Figure (4.3). The periphery is omitted, because it can appear in a number of different positions. What I show here is two projections of the clause, one of which contains the predicate and argument (the constituent projection), while the other contains the operators (the operator projection). They are both linked through the predicate, which may be a verb, NP, AdjP or PP, because it is the one crucial element common to both.

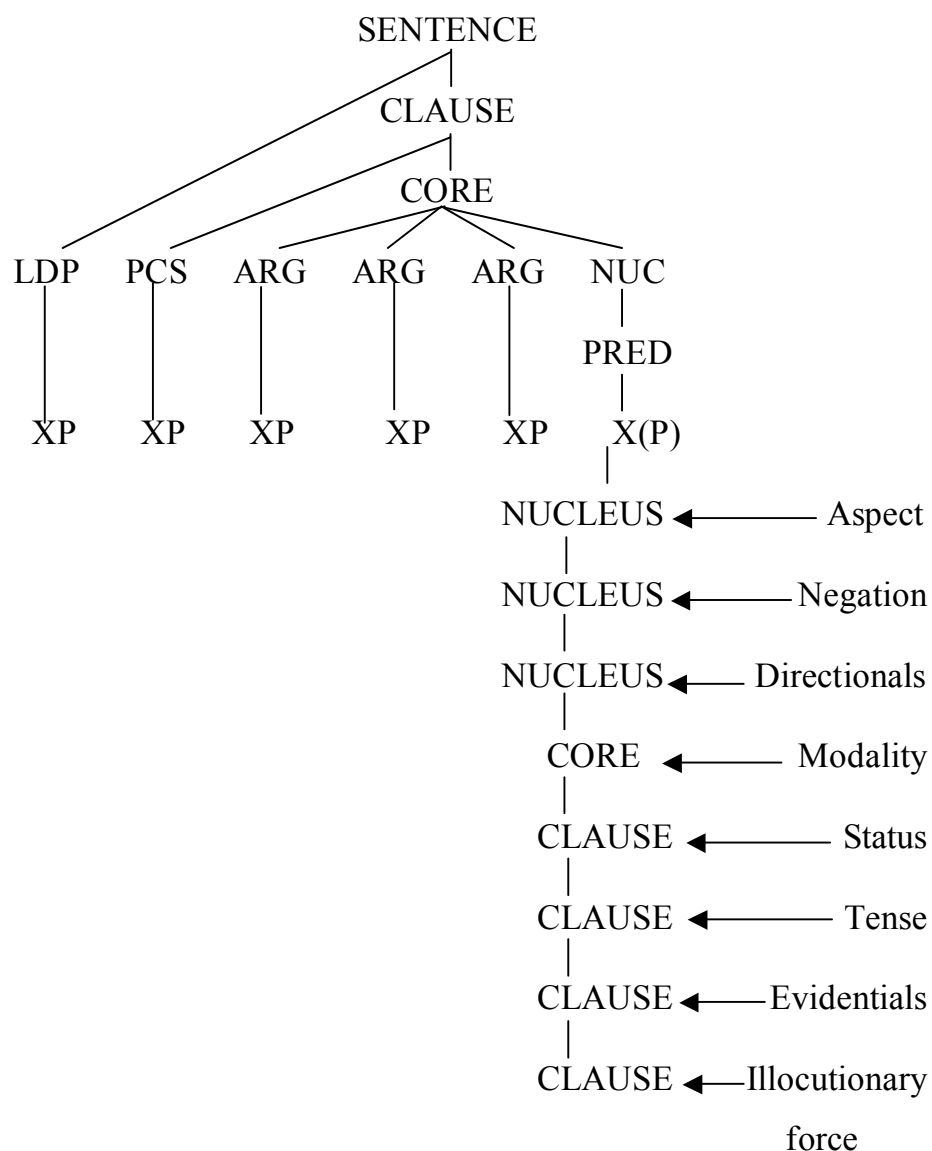


Figure 4.3 Farsi LSC with constituent and operator projections

It is important to note that operators are ordered with respect to each other in terms of the scope principles discussed earlier, with the verb or other predating element in the nucleus as the anchorpoint, and thus the ordering restrictions on the morphemes expressing the operators are universal. By looking at the linear

order of operators in Farsi and comparing it with the comparable order of operators in languages such as English, Korean and Japanese, we can see that this ordering is universal and works cross-linguistically.¹¹

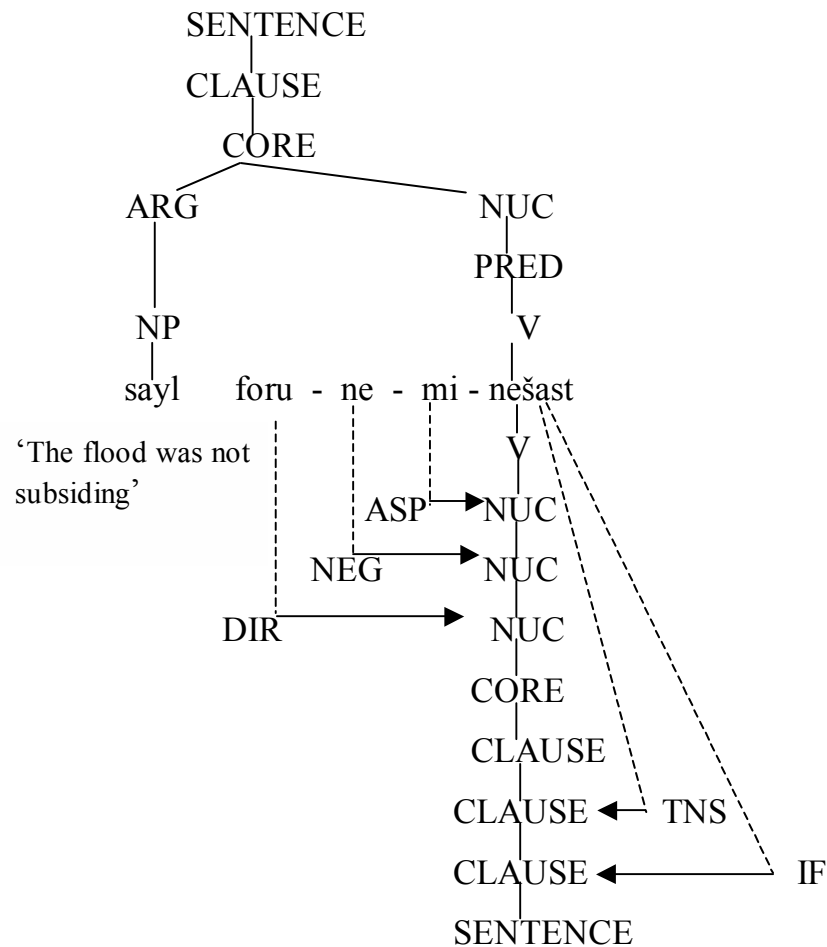


Figure 4.4 Farsi LSC with operators

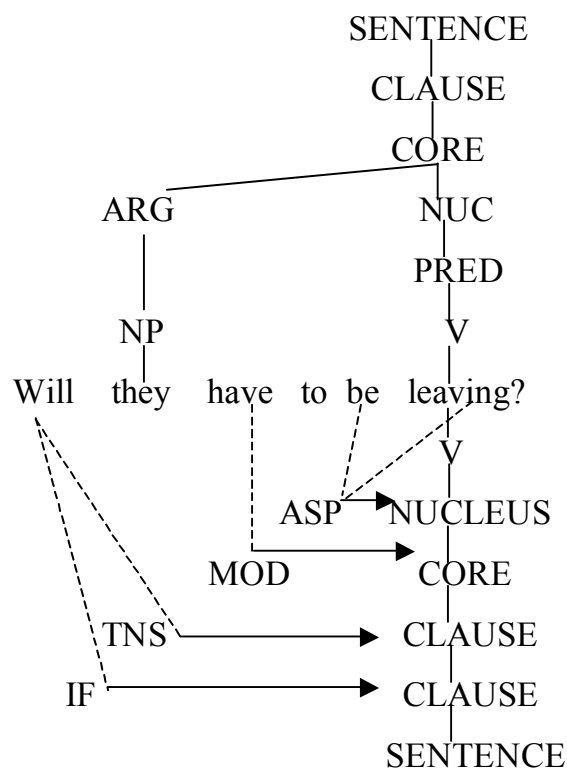


Figure 4.5 English LSC with operators (from VanValin, in press: ch1).

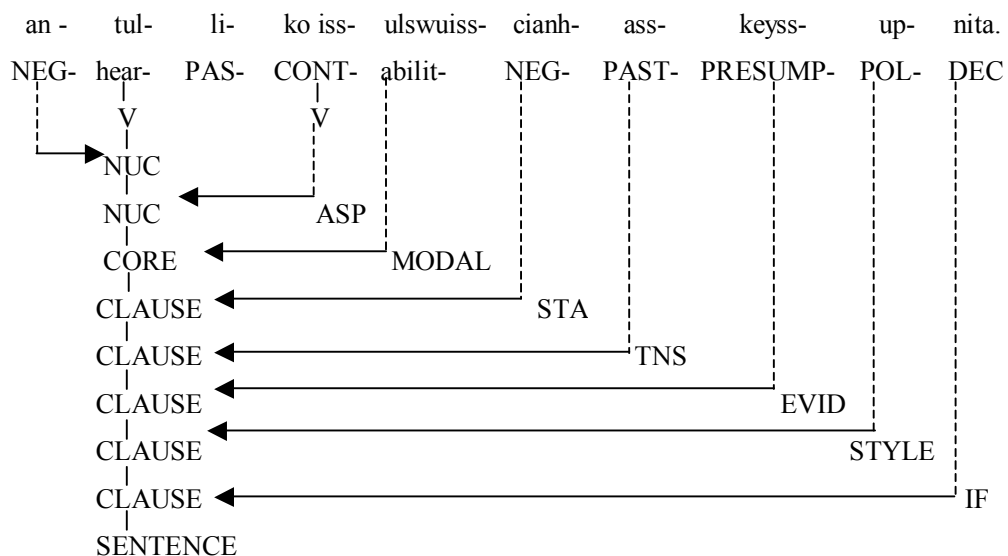
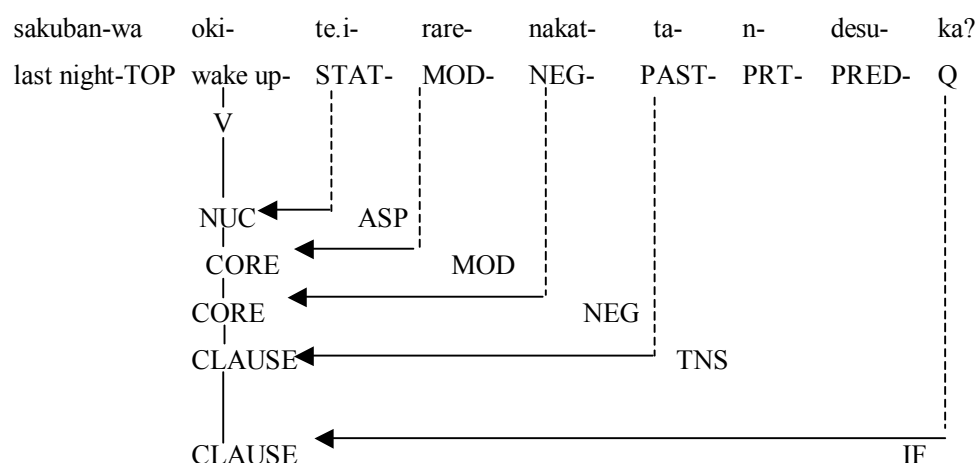


Figure 4.6 Korean operator projection (from Yang 1994).

The above sentence means ‘I guess that he might not be heard’



‘Weren’t (you) able to stay awake last night?’

Figure 4.7 Japanese operator projection (Ohori, 1992).

4.3. Summary

In this chapter, I analyzed Farsi’s grammatical categories like aspect, tense, negation, etc. with the RRG operator system. Despite the fact that Farsi does not have a fixed linear ordering of verb suffixes like Korean or Japanese, it fully follows the RRG operator system and supports the assumptions that the ordering of the morphemes expressing operators with respect to the verb indicates their relative scopes.

Nuclear operators such as aspect, negation, and directionals are coded by verbal affixes. Categories like modality and status are expressed by modal auxiliaries. Also, certain operators like evidentials are expressed by sentential adverbs. From the above analysis, I can propose the following operator system in Farsi.

(4.18) a. Nuclear operators	Aspect
	Negation
	Directionals
b. Core operators	Modality
c. Clausal operators	Status
	Tense
	Evidential
	Illocutionary Force

RRG's operator projection has several advantages in explaining grammatical categories in Farsi. First, as I stated earlier, it distinguishes lexical aspect (Aktionsart) from grammatical aspect. Second, some grammatical categories like directionals and evidentials which are ignored in most traditional and modern theories of grammar have been recognized. Third, the grammatical category of mood which is problematic for most linguistic schools is divided into two separate categories called modality and status. Fourth, unlike Chomskyan theory (G.B) that treats lexical and functional categories alike in terms of phrase structure (Miremedi 1997), RRG treats lexical and functional (i. e. operator) categories quite differently, and consequently there is no possibility of an operator being taken to be the head of a lexical phrase. This chapter shows that there is a clear semantic explanation for the hierarchical arrangement of the operators in the operator projection within RRG.

In contrast, in GB theory, there is no principled explanation for why TenseP should be higher in the tree than AspectP.

Notes to Chapter 4

1 An important difference between the functional projection in Chomskyan theory and RRG's operator system is that the former includes verb agreement morphemes among the functional projections, whereas RRG does not consider these as operators.

2 For a comprehensive analysis of operators in RRG, the reader is referred to Foley and VanValin (1984:ch5) and VanValin and LaPolla (1997:ch2).

3 Traditional Grammarians consider past perfect and present perfect as distinct tenses in Farsi. Instead, following RRG framework, I analyze them as perfective aspect and past tense and perfective aspect and present tense, respectively.

4 It should be noted that these prefixes are not always markers of directionality. They have a directional meaning when prefixed to a small number of verbs like *âmadan* 'come', *nešastan* 'sit', *raftan* 'go', etc.

5 These two categories are termed as a single category, subjunctive mood, on both traditional and linguistic studies. Mahootian (1997:247) points out that the subjunctive constructions is used for a variety of functions including optative, intentional, debitive, potential and horative.

6 These two categories are ignored in almost all traditional and modern analyses of Farsi verbal inflections.

7 Among auxiliary verbs in Farsi *bâyad* 'must' and *šâyad* 'may' are referred to as deficient verbs in the sense that contrary to other verbs, they can not be inflected for person and number.

8 More cross-linguistic evidence for the distinction between modality and status and their assignment as operators at different layers is provided in Foley and VanValin (1984:ch5) in RRG terms and Hengeveld (1989) in FG terms.

9 See VanValin and LaPolla (1997), Section (4.4.1.2) for a detailed discussion of adverbs and their semantic representation.

10 For more information on Illocutionary force, the reader is referred to Sadock (1988), Sadock and Zwicky (1985) and Lyons (1995).

11 Additionally, RRG claims that the acquisition of operators by children substantiates the assumed operator system presented in this chapter. For more information on this, see VanValin (1991) and VanValin and LaPolla (1997:Epilog).

Chapter 5

Information Structure

5.0. Introduction

Another major component system of RRG is information structure. This component integrates the discourse factors into the theory, factors which in other syntactocentric theories are frequently ignored in spite of their relevance to syntactic phenomena. In addition to the constituent projection representing clause structure and operator projection representing grammatical categories such as aspect, tense, and modality, another main projection of RRG clause representations is information structure. In this chapter, I will investigate the question of information structure in Farsi simple sentences. This chapter is structured as follows: in Section (5.1) a short synopsis of information structure and its development in RRG will be presented and some basic concepts will be defined. Section (5.2) addresses the question of focus structure in Farsi. Introducing the basic Lambrechtian focus paradigms, I show different focus types in Farsi simple sentences. Then the morphosyntactic marking of focus structure and its representation will be discussed. It will be argued that aside from accentuation, marked word orders are also used to express narrow focus structure. Section (5.3) which is the core of this chapter, is devoted to the interaction of focus structure and syntax. In order to find this interaction, word orders in

transitive and intransitive sentences under different focus types are examined. I conclude that the seemingly free word order in Farsi is much less free in terms of focus structure.

In section (5.4) the potential focus domain in Farsi simple sentences is represented and I will show that except the LDP all other constituents fall within the focus domain. It is also argued that there is an absolute constraint against focal elements appearing post-verbally. Ultimately, in Section (5.5) the summary of the chapter will be presented.

5.1. A synopsis of information structure in RRG

In RRG, the subject of the distribution of information in clauses and sentences is largely discussed in VanValin (1993b) and VanValin and LaPolla (1997). The study of information structure goes back to the beginnings of modern linguistics, to the work of Prague School linguists such as Mathesius in 1920s, and more recent work in this area has included Halliday (1967, 1985), Chafe (1987), Vallduvi (1990), Dryer (1996), to name just a few.

It is largely Lambrecht's works (1988, 1994, 2000) which form the basis of the conception of information structure developed in RRG Theory. Lambrecht (1994) states that the formal structure of sentences is related to the communicative situations in which sentences are used. He claims that this relationship is governed by

principles and rules of grammar, in a component called information structure. This term is used to refer to diverse ways in which information, including propositional information and real-world knowledge, is linguistically encoded. Information structure examines how information is encoded, or packaged in language and why certain structures might be selected to convey a given piece of propositional knowledge.

In Lambrecht's view, propositions undergo pragmatic structuring in accordance with the discourse situations and are then matched with appropriate lexicogrammatical structures. Lambrecht (1994) gives the definition of information structure as follows:

"Information structure is that component of sentence grammar in which propositions as conceptual representations of states of affairs are paired with lexicogrammatical structures in accordance with the mental states of interlocutors who use and interpret these structures as units of information in given discourse contexts."

(Lambrecht 1994:5)

According to Lambrecht (1994:6) the most important categories of information structure are presupposition and assertion, identifiability and activation, and topic and focus. He refers to the old information contained in or evoked by, a sentence as the

pragmatic presupposition and the new information expressed or conveyed by the proposition as the pragmatic assertion. These two terms are defined as follows:

"Pragmatic Presupposition: The set of propositions lexicogrammatically evoked in a sentence which the speaker assumes that the hearer already knows or is ready to take for granted at the time the sentence is uttered.

Pragmatic Assertion: The proposition expressed by a sentence which the hearer is expected to know or take for granted as a result of hearing the sentence uttered."

(Lambrecht 2001: 474).

Topic and focus have to do with a speaker assessment of the relative predictability vs. unpredictability of the relations between propositions and their elements in given discourse situations.

Lambrecht's definition of topic and focus is as follows:

"Topic: A referent is interpreted as the topic of a proposition if in a given situation the proposition is construed as being about this referent, i.e. as expressing information which is relevant to and increases the addressee's knowledge of this referent.

(1994:131)

Focus: The semantic component of a pragmatically structured proposition whereby the assertion differs from the proposition."

(1994:213).

The part of the assertion which is not within the pragmatic presupposition is the focus.¹ What is informative about an assertion is not the information in the focus by itself, but the association of that information with the set of assumptions that constitute the pragmatic presupposition. As Lambrecht (2001) states, the focus of a proposition is that denotatum whose presence in the sentence makes the utterance into an assertion, that is, makes it possible for sentence to convey new information to the addressee. Thus, the focus component is an unpredictable part of the proposition (Lambrecht 2001).