

Raising and Control in Persian

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1 Introduction*

Raising and control constructions have been discussed at length since the early stages of Generative Grammar. While some linguists have assigned the same syntactic structure to both constructions, others have concentrated on the structural and semantic differences between the two. Among the second group, there are some who argue that the distinctions are accounted for syntactically, while others attribute the differences to the semantic nature of the predicates. Within Non-Chomskyan frameworks, for example, differences between raising and control constructions have been suggested to be due to the semantics of their predicates (GPSG, HPSG, and Categorical Grammar, also see Culicover and Jackendoff 2005). Within Chomskyan trend, however, from Standard Theory through Minimalism, the differences between these two constructions have been considered to be of syntactic nature.

The goal of this chapter is to investigate the syntax and semantics of raising and control predicates in Persian in a rather descriptive fashion, although the literature review and the analysis include some theoretical criticisms and suggestions¹. In addition to raising constructions, this chapter includes analyses of three distinct control types in this language: Arbitrary Control (ArbC), Non-Obligatory control (NOC), and Obligatory Control (OC)².

There are predicates in Persian which allow the embedded subject to appear in the (seemingly) matrix subject position. Compare the English raising construction in (1a) to its Persian counterpart in (1b)³.

- (1) a. John seems **e** to be smart.
b. Kimea be-nazar mi-yâd (ke) **e** bâhush bâsh-e
K to view dur-comes (that) smart be-3sg
'Kimea seems to be smart.'

In both sentences, the subject of the embedded clause appears in the subject position of the matrix clause. The bold **e** in both cases represents the empty subject in the embedded clauses.

Persian ArbC comes in two versions: impersonal constructions, as in (2a), and nominal infinitives, as in ((2b))⁴.

- (2) a. *Impersonal ArbC*
bâyad **e** haghghat-ro goft
must truth -râ said
'One must tell the truth.'

* I would like to thank Andrew Carnie, Jila Ghomeshi, David Medeiros, Yosuke Sato, and the audience at the First International Conference on Iranian Linguistics in Leipzig for suggestions and comments. I am also grateful to the two anonymous reviewers for their constructive and helpful comments. All remaining shortcomings are mine.

¹ Theoretical discussions of arbitrary control and obligatory control appear, respectively, in Karimi (2007a) and Karimi (2007b).

² The data provided in this chapter are taken from Farsi, the standard language spoken in Iran.

³ Simple verbs constitute a small subset of verbal predicates in Persian. The majority of predicates consist of a non-verbal element and a light verb in this language. The predicate *be-nazar âmadan* 'to seem' is one example that consists of the non-verbal element *be-nazar* 'to view' and the light verb *âmadan* 'come'. For detailed analyses of Persian complex predicates see, among others, Vahedi (1997), Karimi (1997), Folli, Harley, and Karimi (2005).

Abbreviations: dur; duration; sg: singular; pl: plural, subj: subjunctive, neg; negation.

⁴ The particle *râ* is the accusative marker for specific objects. This element appears as *-ro* and *-o* in spoken language, depending whether it is attached to a vowel or a consonant, respectively. Non-specific objects lack this element.

- b. *Nominal infinitive ArbC*
e Kâr kardan dar in sharâyet xeyli saxt-e
 work doing in this conditions very difficult-is
 ‘Working in these conditions is very difficult.’

Again, the bold **e** represents the null subjects in these cases.

NOC is represented by the example in (3), while the data in (4) exemplify OC constructions.

Non-obligatory control

- (3) Kimea *mi-xâst* [(ke) **e**/Parviz be-r-e]
 K dur-wanted-3sg (that) **e**/Parviz subj-go-3sg
 ‘Kimea wanted **e**/Parviz to go.’

Obligatory control

- (4) a. *Subject control*
 Kimea tasmim gereft [(ke) **e**/*Parviz be-r-e]
 K decision took-3sg (that) **e**/*Parviz subj-go-3sg
 ‘Kimea decided to go.’
- b. *Object control*
 mâ Kimea-ro majbur kard-im [(ke) **e**/*Parviz be sinamâ be-r-e]
 we K – râ forced did-1pl (that) **e**/*Parviz to cinema subj-go-3pl
 ‘We forced Kimea to go to the movies.’

In NOC constructions, either an empty subject or a full noun phrase may appear in the embedded subject position, as in (3). In OC constructions, only an empty subject is allowed in that position. This is true of subject control ((4a) and object control constructions (4b)⁵.

While the empty subject in (1) is considered in the literature to be a trace/copy left behind by the movement of the noun phrase, the one in ArbC and OC is suggested to be an empty pronoun known as PRO since Chomsky and Lasnik (1977). The empty subject in NOC construction is suggested to be *pro* by some linguists (e.g. Hornstein 1999 and work thereafter).

In this chapter, I first discuss the raising predicates in Persian and show that, unlike English, there is no subject to subject movement in this language. That is, what we see in (1b) represents a topic construction, and therefore, (1a) and (1b) are of two different natures. Then I turn to an analysis of the three distinct types of control constructions, and argue that (a) the impersonal ArbC, NOC, and OC predicates have full clauses as their complements, contrary to some of the proposals in the literature, (b) the empty subject in ArbC and OC is not the null pronominal known as PRO, contrary to Chomsky and Lasnik (1977) and work thereafter, and (c) OC is not the result of movement, contrary to Hornstein (1999), among others. In a brief theoretical discussion I propose a general treatment for all types of control constructions by suggesting the existence of a special feature in C (Complementizer) or D (Determiner) which is determined by the lexical semantics of the predicate involved. This analysis is in the spirit of Manzini and Roussou (2000), although it differs from their proposal in certain ways.

The organization of this chapter is as follows. In section 2, a general overview of the literature on raising and control is presented. Section 3 discusses Persian raising constructions, followed by an analysis of ArbC constructions in section 4. NOC and OC predicates are investigated in section 5. Section 6 consists of a brief theoretical proposal. Concluding remarks, including some remaining problems, appear in section 7.

2 Overview of the Literature

In the 70’s, complements to raising and control predicates were both considered to consist of a simple verb phrase (Bresnan 1972, 1982, Brame 1976, Bach 1977).

⁵ Note that the complementizer *ke* is optionally present in the embedded clause of both raising and control predicates, as shown in (1b)-(4). This is not an isolated situation since control infinitives in Romance can be introduced by the prepositional complementizer *de/di* as well, although raising constructions cannot (Rizzi 1982, Kayne 1984, 2000). The presence of a complementizer in a finite control and raising complement is also attested in Balkan languages, including Modern Greek (Terzi 1992).

Thus PRO is considered to receive Null-Case within this model, in contrast to lexical DPs which receive Nominative Case in the subject position of a tensed clause.

The nature of tense in infinitive complements was discussed in the literature as early as in the 70's. Bresnan (1972) argues that the infinitival complement of a control verb (as opposed to that of a raising verb) is specified for tense, and implies unrealized future. Stowell (1982) concurs with this proposal. Building on the same idea, Martin (2001) proposes a three-way Case system for subject positions:

- | | | | |
|------|--------------------|---------------------|--|
| (11) | [+Tense, + finite] | checks Nom Case | (Full noun phrase) |
| | [+Tense, - finite] | checks Null Case | (PRO in control constructions) |
| | [-Tense, - finite] | Does not check Case | (subject positions in raising constructions) |

There are, however, some empirical problems with both Case-less and Null Case assumptions. Borer (1989), for example, states that overt pronouns are possible in infinitive constructions in Italian and Korean. Furthermore, Harley (2001) shows that PRO appears freely in Nominative Case positions in Irish. Similarly, Stenson (1989) argues that PRO appears in tensed clauses in Icelandic, and Sigurðsson (1991) shows that this element is governed and Case-marked in this language. Finally, Ghomeshi (2001) and Karimi (2005) provide data indicating that PRO and lexical DPs can both appear in the subject position of subjunctive verbs in Persian, as the data in (12) attest.

- | | | | | | |
|------|----|---------------------------------|------------------------|--------------------------|----------------|
| (12) | a. | man fekr | mi-kon-am | [_{CP} ke Kimea | be-r-e] |
| | | I thought | dur-do-1sg | that K | subj-go-3sg |
| | | 'I think that Kimea (will) go.' | | | |
| | b. | Kimea tasmim gereft | [_{CP} ke PRO | be-r-e] | |
| | | K | decision caught-3sg | that | subj-go-3sg |
| | | 'Kimea decided to go.' | | | |

The embedded clauses in (12) are identical in terms of verbal morphology and tense. Both are tensed, and indicate future action. This fact clearly shows that PRO is not in complementary distribution with an overt DP.

PRO and Null Case pose some problems from a purely theoretical point of view as well. That is, Null Case applies only to PRO, and is a property of infinitives, two purely descriptive properties, as observed by Hornstein (1999), Manzini and Rousou (2001), among others.

Having presented the basic properties of control and raising constructions in this section, I will now turn to a discussion of raising predicates and their properties in Persian.

3 Raising constructions

Before discussing the raising constructions in Persian, a few facts about the syntax and verbal morphology of this language need to be reviewed here.

Persian is a Null subject language which exhibits fairly free word order. The reordering of phrasal elements are considered to be the result of discourse functional elements such as topic and focus (Karimi 2005). Relevant to our discussion is the fact that there are no infinitive clauses in this language. The predicate in the embedded clause of raising and control constructions is typically represented by a subjunctive form⁸. As for Persian verbs, they consist of the following morphological elements:

- Aspectual prefix *mi-* (glossed as dur(ation))
- Mood prefix *be-* (employed for imperative and subjunctive cases)
- Negative prefix *ne-* (which is in complementary distribution with the subjunctive prefix *be-*)
- Agreement suffixes, representing person and number.

required government by a head. Government has been abandoned within the Minimalist Program. Thus PRO can no longer be assumed to be in an ungoverned position.

⁸ In addition, desire verbs (*to like, be pleased, etc.*) and conditionals take the subjunctive form as well.

The following data show the presence of verbal morphemes (in italic)⁹:

(13) kimea *mi-tun-e* ketâb *be-xun-e*
 K dur-can-3sg book subj-read-3sg
 'Kimea can sing.' (Kimea is able/has permission to read)

(14) Kimea *mi-tun-e* ketâb *na-xun-e*
 K dur-can-3sg book neg-read-3sg
 'Kimea has the permission not to sing.'

Returning to raising predicates, the following facts hold with respect to these constructions in Persian. First, the embedded subject does not need to move into the matrix clause, as in (15)¹⁰.

(15) be nazar mi-yâ-d (ke) bachche-hâ xaste bâsh-an
 to view dur-come-3sg that child-pl tired subj.be-3pl
 'It seems that children are tired.'

Second, there is no agreement between the matrix verb and the moved embedded subject, as in (16). The subject agrees with the embedded verb in these cases. The letter 't' in this and similar examples represents the trace of the moved element.

(16) bachche-hâ be-nazar mi-yâ-d / *be-nazar mi-yâ-n t xaste bâsh-an
 child-pl to view dur-come-3sg/*to view come-3pl tired be-3pl
 'As for the children, it seems that they are tired.'

Furthermore, any other phrasal element from the embedded clause may move into the matrix clause in these constructions.

(17) ketâb-â-ro be-nazar mi-yâ-d/*mi-yâ-n (ke) bachche-hâ t xunde bâsh-an
 book-pl-râ to view dur-come-3sg/*dur-come-3pl that child-pl read be-3pl
 'As for the books, it seems that the children have read (them).'

In (17), the object has moved into the matrix clause while the embedded subject remains in-situ. As the inflection on the matrix verb indicates, there is no agreement between the verb and the extracted object. Based on these pieces of evidence, it has been argued in the literature that Persian lacks raising constructions (Hashemipour 1989, Karimi 1999, and Ghomeshi 2001)¹¹. It is worth noting that the subject position in these constructions is not filled by an expletive either, since this language lacks both overt and covert expletives, as argued in detail by Karimi (2005)¹².

Raising constructions offer two issues that are relevant to our general discussion in this chapter. First, the sentences in (16) and (17) present instances of topicalization, as the English translation indicates. That is, the subject or the object, and sometimes both of them, may move into the matrix clause in so called raising constructions only if they are topicalized (or focused). Otherwise, they stay in situ. This issue shows that the overt subject of the embedded clause receives its Case in-situ, and does not have to move for the purpose of Case assignment. Thus unlike English, there is no A(argument) movement (subject-to-subject movement in this case) in Persian so-called raising constructions¹³. Second, the tense of the embedded predicate has to be anaphoric. That is,

⁹ A number of the predicates discussed in this chapter are modals. For an elaborated discussion of Persian modals see Taleghani (2006). Some properties of Persian modals, in addition to those in English, French, German, Japanese and Turkish are discussed in Karimi, Racy, Sato, and Taleghani (in preparation).

¹⁰ The copula *be* has its own subjunctive form which appears as *bâsh-* (see the example in (15)).

¹¹ Darzi (1996) suggests that Persian exhibits raising constructions. See Karimi (2005) for some arguments against this claim.

¹² Lack of raising constructions is not a unique property of Persian syntax. Philippaki-Warbuton and Catsimali (1999) argue that there is no raising in Modern Greek, and that what appears in the matrix clause is a topicalized element. This is similar to what we see in Persian.

¹³ For a more detailed analysis of A-movement, in general, and raising, in particular with respect to the grammar of Persian see Karimi (2005).

this predicate does not have an independent tense, since its tense is determined by the matrix clause. This is evident by the ungrammaticality of the following sentence.

- (18) *diruz be-nazar mi-âmad ke Kimea fardâ be-r-e
 yesterday to-view dur-came-3sg that K tomorrow subj-go-3sg
 Intended meaning: *It appeared yesterday that Kimea will go today.

This fact suggests that the embedded clause lacks a T(ense) P(hrase), and consists only of a V(erb) P(hrase). However, the presence of the complementizer *ke* ‘that’ contradicts this assumption. Crucially, a full noun phrase appears in the subject position in these constructions, indicating that the subject noun phrase can receive Nominative Case in that position, as mentioned before. This issue will become relevant when we discuss control constructions in this language.

4. Arbitrary Control (ArbC)

As stated in the introduction of this chapter, there are two types of ArbC in Persian. The first one to discuss here is called *Impersonal Constructions* (IC). The second one is nominal in nature which we call *Nominal Infinitives* (NI) here. I will start with a description and analysis of the first group.

4.1 Impersonal Constructions (IC)

Arbitrary control is found in impersonal constructions (IC) in Persian, exemplified by (2a), repeated in (19a), and the one in (19b).

- (19) a. bâyard PRO haghghat-ro goft
 must truth -râ said
 ‘One must tell the truth.’
- b. mi-sh-e PRO haghghat-ro goft
 dur-possible -is truth -râ said
 ‘It is possible to tell the truth.’

The properties of Persian IC constructions are as follows.

General properties

The major ingredients of impersonal constructions are the adverbial *bâyad* ‘must’ and the semi auxiliary *mi-sh-e* ‘it is possible’. Historically, both forms have derived from regular verbs. However, *bâyad* has lost its verbal inflection completely, while *mi-sh-e* has maintained the durational prefix *mi-* and the third person inflection *-e*¹⁴. The main verb in these constructions consists of the past stem with no overt inflection, representing the 3rd person singular for the past tense. The main verb in (20) below exemplifies the third person in past tense¹⁵.

- (20) un goft ke
 s/he said-3sg that....

Infinitives utilize this stem plus the infinitive morpheme *-an*. Therefore, the predicates in IC constructions are called *masdar-e moraxam* ‘curtailed infinitives’ in Persian grammar books, and *short infinitives* by Karimi (2005). We use the term *impersonal* to refer to the arbitrary interpretation of the subject in these constructions.

External argument

The claim that there must be an external argument in IC constructions is supported by the following arguments:

- a. The ability of the verb to license the Accusative Case (cf. Burzio’s Generalization, Burzio 1986), as in (19).

¹⁴ Persian auxiliaries are real verbs, and appear with full inflection. Therefore, *mi-sh-e* is considered a semi-auxiliary since it only appears in 3rd person singular.

¹⁵ The final *-t* in *goft* (and its allomorph *-d* where the verbal root ends in a voiced consonant or a vowel) represents the past tense morpheme in Persian.

b. The incompatibility of IC to be formed with subject-less (raising) constructions.

- (21) a. be-nazar mi-y-âd ke in dâstân dorost na-bâsh-e
 to-view hab-come-3sg that this story right neg-subj.be-3sg
 'It seems that this story is not correct.'
- b. *bâyad be-nazar âmad ke in dâstân dorost na-bud
 must to-view come-that this story right neg-be

The predicate *be-nazar-mi-yâ-d* 'seems' in (21a) is a so-called raising predicate which has no subject (see section 3 in this chapter). The string in (21b) shows that the impersonal construction is incompatible with this predicate.

c. Intentional adverbs cannot be used in so-called raising constructions, while they are permitted in ICs when the predicate requires an agent.

- (22) a. *amdan be nazar mi-yâ-d ke Kimea be madrese rafte
 intentionally to view hab-come-3sg that K to school gone-3sg
- b. bâyad amdan bâ in kâr mokhâlefât kard
 must intentionally with this matter objection do
 'One must purposely object to this matter.'

Arbitrary reading

Persian IC receives an arbitrary reading, as in (23).

- (23) mi-dun-am (ke) [*bâyad raft*]
 dur-know-1sg that must go
 'I know one must go.' (Ghameshi 2001:20)

There are pieces of evidence that support this claim.

a. IC is incompatible with a referential antecedent for its subject, as suggested by Ghameshi.

- (24) *sa'y kard-am (ke) [*bâyad raft*]
 try did-1sg that must go (Ghameshi 2001:21)

In (24), IC is the complement to the obligatory control predicate *sa'y kardan* 'to try'. The ungrammaticality of this sentence is justified if the subject receives an arbitrary reading, and thus cannot be controlled by the implicit referential subject of the main clause. Note that the arbitrary subject can be controlled by another arbitrary subject, as in (25).

- (25) bâyad say kard [ke PRO movaffagh shod]
 must effort do-3sg that successful become-3sg
 'One must try to become successful'

The arbitrary subject in the embedded sentence in (25) is controlled by the arbitrary subject in the impersonal matrix clause.

b. IC is incompatible with weather constructions.

- (26) a. bârun âmad
 rain came
 'It rained.'
- b. *bârun bâyad âmad

c. IC is incompatible with an emphatic pronoun:

- (27) *bâyad xod in kâr-râ kard
 must self this job-râ do

Generic reading

The data discussed in this section show that IC receives a generic reading equivalent to the overt arbitrary pronoun *one* in English. That is, the subject seems to be bound by a generic operator that provides a global interpretation. We come back to this issue in section 6.

Lack of overt subject

IC cannot take an overt subject, as in (28).

- (28) *un bâyad goft ke
 s/he must said that...

Why is the presence of an overt DP excluded from the subject position in IC? One possible answer is that these clauses are not tensed. However, IC is a full clause (e.g. C(omplement) P(hrase)) when embedded inside another clause, as in (29).

- (29) Kimea goft [_{CP} ke bâyad in kâr-ro kard]
 K said-3sg that must this work-râ do
 ‘Kimea said that one must do this.’

Overt complementizers are traditionally considered to represent finite clauses. Rizzi (1997), for example, argues that *that* is specified for clause-typing (+declarative), but also for finiteness. As (29) shows, IC appears with the complementizer *ke* ‘that’, and thus must have tense. Furthermore, IC may appear as an independent clause by itself, as in (19), implying that there must be some sort of tense in this clause.

An alternative response is that Persian lacks an overt impersonal pronoun comparable to English *one*. We will see, however, that lack of overt impersonal pronoun is naturally accounted for by the analysis advanced in section 6¹⁶.

4.2 Nominal infinitives (NI)

In this section I briefly examine nominal infinitives in Persian. We will see that, similar to their English counterparts, the null subject in these constructions can be replaced by an overt DP, and receive a generic reading.

The examples in (30) and (31) exemplify nominal infinitives in Persian. As mentioned in section 4.1, the infinitive consists of the past stem plus the infinitive morpheme *-an* that appears as a suffix on the verbal stem (and glossed as ‘inf’).

- (30) Kâr kard-an dar in sharâyet xeyli saxt-e
 work do-inf in this conditions very difficult-is
 ‘Working in these conditions is difficult.’

- (31) Dir âmad-an kâr-e xubi nist
 Late com-inf work-Ez good not-is
 Lit. Coming late is not a good thing.

One argument of the nominal infinitive may appear as an overt DP in these constructions, similar to English gerunds. The examples in (32) and (33) correspond to (30) and (31), respectively.

¹⁶ There is another type of impersonal construction in Persian where the DP *âdam* ‘people’ appears in the subject position, and receives an arbitrary interpretation.

(i) âdam mamulan in kâr-ro ne-mi-kon-e
 people usually this work-râ neg-dur-do-3sg
 ‘One usually does not do this.’

This construction is different from the one discussed in the text since the verb appears with a third person inflection for present tense, and the aspectual prefix *mi-*

- (32) kâr kardan-e *Kimea* dar in sharâyet xeyli saxt-e
 work do-inf-Ez K in this conditions very difficult-is
 ‘Kimea’s working in these conditions is very hard.’
- (33) Dir âmad-an-e *Kimea* kâr-e xubi na-bud
 Late come-inf-Ez K work-EZ good neg-was
 ‘Kimea’s late coming was not a good thing.’

The *Ezafe*¹⁷ particle in (31), (32) and (33) is responsible for the Case of the DP *Kimea* in these examples, as argued for by Samiian (1983, 1994).

4.3 Discussion

The natural question that arises here is this: is the subject in IC constructions PRO, *pro*, or something else? Stenson (1989) argues that the subject of Irish autonomous impersonals is the element PRO. The null subject in these constructions, similar to their IC counterpart in Persian, need not (in fact, cannot) be controlled by a referential DP. It thus seems clear that if it is PRO, it is arbitrary PRO. However, the existence of PRO has been challenged in recent years, as we saw in section 2 (see also section 5.2) in this chapter.

Is this null element *pro*? One property of IC constructions is that the emphatic *xod* cannot be placed in the subject position of these constructions, as observed in section 4.1. The example illustrating this fact appears in (27), repeated below in (34).

- (34) *bâyad xod in kâr-râ kard
 must self this job-râ do

The semantics of the emphatic *xod* is incompatible with the arbitrary reading of the subject (but see also section 6). That is, the mismatch here is parallel to the impossibility of an arbitrary *they* reading for (35) below.

- (35) They themselves say that it is going to rain today.

Thus these examples do not convincingly show that *pro* cannot be the subject in Persian ICs. There emerge, however, some difficulties if we assume *pro* as the subject in these constructions.

First, it is interesting to note that in Brazilian Portuguese *pro* is completely vanishing from the subject position, although historically it existed in this language. The empty arbitrary subject, however, prevails in this language (William Alexander, personal communication). This fact shows that these two elements must be of distinct semantic and syntactic natures.

Second, another major difference between *pro* and the arbitrary subject is that only the latter is underspecified in terms of number and person¹⁸. That is, although the verb has number and person features (usually 3rd person singular in Persian), these features are fixed and cannot vary. In other words, the arbitrary subject is not ϕ -complete in these cases, and thus it is not clear how this is to be reconciled with the semantic nature of *pro*. The underspecification of the ϕ -features in arbitrary subjects is evident by the fact that they are not compatible with weather verbs, as in (26b), repeated in (35).

- (36) *bârun bâyad âmad
 rain must come

What (36) implies is that the ϕ -properties of the arbitrary subject cannot even refer to weather nouns, elements that do not independently surface in some languages such as English (as in *it rained*).

Finally, the issue becomes even more complicated if we consider the fact that arbitrary subjects receive different types of interpretation in different types of sentences. Consider the following examples representing a

¹⁷ An *Ezafe* construction is a DP consisting of the head (an element with the feature [+N], such as N or A), its modifier(s), an optional possessive DP, and the *Ezafe* particle *e*, which serves in the structure as a link between the head and its modifiers[*p*ssessor. For a discussion of the Persian *Ezafe* construction, see Samiian (1983, 1994), Karimi and Brame (1986), and Ghomeshi (1996, 1997).

¹⁸ This is true of overt impersonal pronouns such as the French *on* and German *man*.

type of impersonal construction in Persian that is different from those discussed thus far. The arbitrary subject in (37) receives an existential reading, while the one in (38) has a generic reading.

- | | | |
|------|---|---------------------|
| (37) | dar mi-zan-an
door hab-hit-3pl
'Someone is knocking at the door.' | Existential reading |
| (38) | jom'e-hâ madrese-hâ-ro mi-band-an
Friday-pl school-pl -râ hab-close-3pl
'It is the case that on Fridays 'they' close the schools' | Generic reading |

The sentence in (37) has the interpretation that someone is knocking at the door at this time, while the one in (38) receives a reading that implies that generically it is the case that schools are closed on Fridays¹⁹.

Turning now to the subject in NI constructions, we saw that this element can either be null or overt, similar to its English counterpart that appear in a gerundive form. This has prompted Hornstein (1999) to suggest that the null subject is *pro* in these constructions. However, one major problem with this analysis concerns the presence of the arbitrary subject, but lack of *pro*, in English and similar languages. That is, if the arbitrary subject is *pro*, how can we explain the lack of a referential empty category in other constructions in English? Although Persian is a Null Subject Language which otherwise allows *pro* in the subject position, lack of this element in English provides a problem for postulating the existence of *pro* as the arbitrary subject in NI constructions, since they have the same properties as English gerundive forms. I will propose an alternative analysis in section 6.

We now turn to a discussion of Persian NOC and OC constructions in the next section.

5. Non-Obligatory Control (NOC) and Obligatory Control (OC)

The number of predicates that allow NOC and OC in Persian is limited. These two groups of predicates include the following:

- | | | | |
|------|--------------------|------------------------------|--|
| (39) | NOC | | |
| | a. | xâstan | (wanting) 'to want' |
| | b. | ghol dâdan | (promise giving) 'to promise' |
| (40) | Subject OC | | |
| | a. | sa'y kardan | (effort doing) 'to try' |
| | b. | tasmim gereftan | (decision taking) 'to decide' |
| | c. | tavânestan | 'to be able' |
| | d. | shoru' kardan | (start doing) 'to start' |
| | e. | yâd raftan/âmadan | (memory going/coming) 'to forget/remember' |
| | f. | ejâze dâshtan | (permission having) 'to have permission' |
| | g. | jor'at kardan | (daring doing) 'to dare' |
| (41) | Direct Object OC | | |
| | a. | majbur kardan | (force doing) 'to force' |
| | b. | tashvigh kardan | (encouragement doing) 'to encourage' |
| | c. | nasihat kardan | (advice doing) 'to advise' |
| (42) | Indirect Object OC | | |
| | a. | entezâr dâshtan | (expectation having) 'to expect' |
| | b. | tosieh kardan | (recommendation doing) 'to recommend' |
| | c. | ejâze dâdan | (permission giving) 'to permit' |
| | d. | nasihat kardan ²⁰ | (advice doing) 'to advise' |

¹⁹ See Spyropoulos (2002) who noted that the existential reading represents a specific time frame (e.g. present tense), while the generic reading implies an indefinite time frame.

²⁰ The complex predicate *nasihat kardan* 'to advise' may take a direct or an indirect object.

A null subject may alternate with an overt DP in the subject position of the complement clause of a NOC predicate, while only a null subject is allowed in Subject and Direct Object OC constructions, as in (3) and (4), respectively. The same situation holds for Indirect Object OC, as shown in (43).

- (43) Kimea be Rahjue nasihat kard [ke e/*Parviz na-r-e]
 K to R advice did that neg-go-3sg
 'Kimea advised Rahjue not to go.' Lit: Kimea gave Rahjue the advice not to go.

In this section, I review some of the proposals previously discussed in the literature, and show that they cannot account for control data in Persian. In section 5.1, I argue that OC constructions are full clauses (CPs) rather than verb phrases (vPs), contra Ghomeshi (2001) (or Bresnan 1972 with respect to English). Then I turn to a discussion of PRO in section 5.2, and provide evidence against its existence. I investigate Hornstein's (1999) movement analysis in 5.3, and offer counter evidence to his claim. Finally I briefly review the arguments against *pro* in these constructions in section 5.4

5.1 The syntactic category of OC: vP or CP?

Is OC a verb phrase (vP) or a full clause (CP) containing T(ense)? I try to answer this question in this section.

Following Wumbrandt (1999), Ghomeshi (2001) provides some arguments to show that OC has a vP construction. Two of her arguments are reviewed in this section. First, there is no independent Tense in OC, thus there is no Tense Phrase (TP) in this construction.

- (44) a. *Bijan diruz mi-tunest (ke) [faradâ be-r-e]
 Bijan yesterday dur-be-able-past-3sg (COMP) tomorrow subj-go-3sg
 '*Bijan could yesterday go tomorrow.'
- b. ?Bijan diruz sa'y-kard (ke) [faradâ be-r-e]
 Bijan yesterday try - do -past-3sg (COMP) [tomorrow subj-go-3sg]
 '*Bijan tried yesterday to go tomorrow.' (Ghomeshi 2001:26)

That is, the tense in the embedded clause must be anaphoric of the one in the matrix clause: the matrix and embedded verbs take place at the same point of time. Therefore, independent temporal adverb is not allowed in the embedded clause.

Second, there is no indirect question in OC constructions. This leads Ghomeshi to believe that there is no Complementizer Phrase (CP) in the embedded clause:

- (45) a. Bijan goft (ke) [chi mi-xun-e]
 Bijan said (COMP) what dur-read-3sg
 'Bijan said what he is reading/he will read.'
- b. Bijan (chi) mi-tun-e (ke) [(chi) be-xun-e]
 Bijan (what) dur-be-able-3sg (COPM) [(what) subj-read-3sg]
 'What can Bijan read?' (Ghomeshi 2001: 24)

In (45a), the embedded clause is a full CP, and therefore, an indirect question is possible. In (45b), in contrast, there should not be a CP, since no matter where the *wh*-phrase appears, a direct question is the only possible interpretation. On the basis of these pieces of evidence, Ghomeshi suggests the following phrase structure for OC constructions:

- (46) [CP Control verb [vP PRO]]

There are, however, some pieces of counter evidence to both assumptions. First, not all control constructions have anaphoric tense in the embedded clause. It seems that speech act verbs, such as *encourage* and *decide* allow non-anaphoric tense in their complements, contrary to verbs with intentional semantics such as *try*.

- (47) a. Kimea diruz Parviz-ro tashvigh kard [ke fardâ be-r-e]

Kimea yesterday Parviz-râ encouragement did [that tomorrow subj-go-3sg]
 ‘Yesterday Kimea encouraged Parviz to go tomorrow.’

- b. Kimea diruz tasmim gereft [ke faradâ be-r-e]
 Kimea yesterday decision took [that tomorrow subj-go-3sg]
 ‘Yesterday Kimea decided to leave tomorrow.’

Although *sa’y kardan* ‘to try’ in (44b), *tashvigh kardan* ‘to encourage’ and *tasmim gereftan* ‘to decide’ in (47) are all core OC predicates, and the verb is in subjunctive mood in all of them, only the latter (=47) allows temporal modifiers in the embedded clause. This is compatible with Landau (2004) who makes a distinction between C(ontrol) subjunctive and F(ree) Subjunctive: the former has anaphoric tense that falls within the matrix tense domain, and therefore, cannot introduce temporal modifiers (cf. 44a&b), while the latter has its own tense (cf. 47a&b). He further suggests that C-Subjunctive is compatible with PRO, while F-Subjunctive may allow either PRO or pro in the subject position. Landau’s analysis, however, faces a serious problem with respect to the data discussed in this chapter. We saw in section 3 that raising predicates force an anaphoric tense in the embedded clause, which would be compatible with Landau’s C-Subjunctive. We also saw that the embedded clause in these constructions allows an overt DP in the subject position, contrary to what Landau’s theory would predict²¹.

Second, certain NOC verbs which clearly have tense and allow an overt subject do not allow indirect questions either:

- (48) a. Kimea (emruz) mi-xâd [(ke) Parviz (fardâ) chi be-xun-e]
 Kimea (today) dur-want-3sg [(that) Parviz (tomorrow) what subj-read-3sg]
 ‘What does Kimea want Parviz to read?’
 *‘Kimea wants Parviz what to read.’
- b. Kimea dust dâr-e [(ke) Parviz chi be-xun-e]
 Kimea friend have-3sg [(that) Parviz what subj-read-3sg]
 ‘What does Kimea like (for) Parviz to read?’
 *‘Kimea likes what (for) Parviz to read’

Furthermore, the complement clauses of both NOC and OC, similar to raising verbs discussed in section 3, are optionally introduced by the complementizer *ke* ‘that’ which suggests that all these constructions are full clauses consisting of a C(omplementizer) P(hrase)²².

I propose a generalized phrase structure for all OC and NOC constructions as in (49). They all have a T(ense) node, T(ense) is selected by C(omplimentizer) (Chomsky 2005), and therefore, OC constructions consist of CP.

- (49) a. [CP C TP T Control Verb [CP C..... T_[+tense] vP] (47)
 b. [CP C TP T Control Verb [CP C..... T_[Anaphoric] vP] (44)

Whether or not the embedded clause has independent (49a) or anaphoric (49b) tense must be part of the semantic specification of the matrix verb. In the same way, whether or nor the embedded clause allows indirect question must be part of the semantic specification of the matrix verb.

5.2 The null subject is not PRO

As discussed in section 2, PRO is considered to appear in positions where Null Case is assigned. This is the subject position of infinitive verbs in control constructions which, according to Martin (2001), have Tense, but lack finiteness. Overt subject noun phrases, however, can only appear in Nominative Case positions where both Tense and Finiteness are present. This assumption does not hold water in Persian for the following reasons.

First, raising constructions seem to have anaphoric tense and lack finiteness, as shown in (18), repeated below in (50a). This is compatible with its English counterpart in (50b).

²¹ For further criticism of Landau’s analysis see Hornstein (2003) and Boeckx and Hornstein (2004).

²² Following Hashemipour (1989) who suggest that *ke* is a subordination marker which lacks features, Ghomeshi (2001) argues that this element is an enclitic that is cliticized to the following element. For a detailed criticism of this assumption see Karimi (2007b).

- (50) a. *diruz be-nazar mi-âmad ke Kimea fardâ be-r-e
 yesterday to-view dur-came that K tomorrow subj-go-3sg
 Intended meaning: *It appeared yesterday that Kimea will go today.
- b. *Yesterday John seemed to leave tomorrow.

Yet full noun phrases may appear in the subject position of Persian raising verbs, as discussed in section 3.

Second, we saw in the previous section that the embedded clause is tensed and arguably finite, at least in some of the control constructions, as exemplified by (47), repeated below in (51).

- (51) a. Kimea diruz Parviz-ro tashvigh kard [ke fardâ be-r-e]
 Kimea yesterday Parviz-râ encouragement did [that tomorrow subj-go-3sg]
 ‘Yesterday Kimea encouraged Parviz to go tomorrow.’
- b. Kimea diruz tasmim gereft [ke faradâ be-r-e]
 Kimea yesterday decision took [that tomorrow subj-go-3sg]
 ‘Yesterday Kimea decided to leave tomorrow.’

Interestingly, the complement clause of a non-control verb can have exactly the same verbal morphology (subjunctive) and semantic reading (tensed), as in (52). Yet, a full noun phrase may appear in the embedded subject position.

- (52) Kimea fekr mi-kard ke Rahjue fardâ hatman be kelâs be-r-e
 K thought dur-did that R tomorrow certainly to class subj-go-3sg
 ‘Kimea thought that Rahjue (would) certainly go to class tomorrow.’

In conclusion, PRO seems to appear in positions where full noun phrases may be placed as well. Thus the existence of this element, which is mainly based on its special Case, is doubtful at best.

5.3 OC is not DP-movement

PRO and NP-traces have several differences which were briefly discussed in section 2. However, they also share some similarities. One such shared property is contraction.

Contraction

- (53) a. John’s going [t_{NP} to leave]
 b. John’s gonna leave.
- (54) a. I want [PRO to leave]
 b. I wanna leave.
- (55) a. Who do you want [t_{wh} to vanish]?
 b. *Who do you wanna vanish

Contraction is possible when a NP-trace intervenes (53b). The same situation holds for PRO (54b). In contrast, a wh-trace does not allow contraction (55b).

Furthermore, OC requires PRO to have the following properties which are shared with the NP-trace in raising constructions (Hornstein 1999: 73):

- (56) a. *PRO must have an antecedent*
 *It was expected PRO to shave himself.
- b. *sa’y shod [ke PRO be-r-e]
 effort became that subj-go-3sg
 ‘*It was tried to go.’

- c. John_i seems t_i to be happy.
- (57) *The antecedent must be local.*
- a. *John_i thinks that it was expected PRO_i to shave himself.
- b. *Parviz_i fekr mi-kon-e [ke Kimea sa'y kard [ke PRO_i be-r-e]]
 P thought hab-do-3sg that K effort did that subj-go-3sg
 Intended meaning: Parviz thinks that Kimea tried that he (Parviz) goes.
- c. *John_i seems it is obvious t_i to be happy.
- (58) *PRO must be c-commanded by its antecedent*
- a. *John's campaign expects PRO to shave himself.
- b. *dust-e Kimea_i sa'y kard [ke PRO_i be-r-e]
 friend-Ez K effort did that subj-go-3sg
 Intended meaning: Kimea's friend tried that Kimea goes.
- c. *John_i's sister seemed t_i to be happy.

Moreover, thematic restrictions discussed by Lasnik (1995) are imposed on Persian OC constructions, as evidenced by the data in (59).

- (59) a. Kimea sa'y kard [ke PRO ketâb-ro be Parviz be-d-e]
 K effort did that book-râ to P subj-give-3sg
 'Kimea tried to give the book to Parviz.
- b. *Kimea sa'y kard [ke PRO ketâb-ro daryâft kon-e]
 K effort did that book-râ reception do-3sg
 Intended meaning: Kimea tried to receive the book.

The controlee, similar to the controller, must be agentive in an OC construction (59a). Otherwise, the result will be ungrammatical (59b).

Based on these properties, Hornstein suggests that PRO is in fact a NP-trace. Thus control is subsumed under raising for this author. There are some advantages to such analysis, as summarized below.

- a. OC is reduced to a movement theory, and thus,
- b. There is no need for a purely speculative control module,
- c. nor for the existence of the descriptively motivated Null Case and PRO.

However, there are some problems with this analysis. First, as we saw in section 3, raising constructions allow the noun phrase to have a narrow scope in the original position (embedded clause), while control constructions do not. This was illustrated in (8), repeated below in (60).

- (60) a. A unicorn seems to be in the room. (narrow scope possible for *a unicorn*:
seems a unicorn to be in the room)
- b. A unicorn tried to enter the room. (narrow scope NOT possible for *a unicorn*
**tried a unicorn to be in the room*)

Second, Persian is a topic prominent language which lacks A(rgument) movement out of the verb phrase altogether (Karimi 2005). Lack of raising constructions in this language provide a piece of evidence in this regard, as discussed in section 3. In addition, there is no movement of subject-to-object position, and thus there is no Exceptional Case Marking (ECM) in this language. Compare the English ECM construction in (61a) to its Persian counterpart in (61b).

- (61) a. John believes her to be happy.
- b. Kimea eteghâd dâr-e ke un xoshhâl-e
 K believe have-3sg that she happy-is
 'Kimea believes that s/he is happy'

While the embedded subject *her* in (61a) is assumed to have moved into the object position of the matrix verb to receive Accusative Case, an instance of A(argument) movement, this assumption cannot be held for the embedded subject *un* 'she/he' in (61b), since the complement clause is finite, and its subject receives Nominative Case in that position without the need to move into the matrix clause for the purpose of Case assignment/checking.

Based on these arguments it seems that Hornstein's movement analysis does not hold. One more possibility remains to be discussed: is NOC subject *pro*? This question is briefly addressed in the following section.

5.4 NOC subject is not *pro*

Hornstein (1999) suggests that the null subject in NOC control is *pro*. The same problems discussed with respect to *pro* in arbitrary control constructions in section 4 hold here as well. That is, (a) how can *pro* be arbitrary in some constructions and referential in some others?, (b) how can it only allow fixed ϕ -features, unlike *pro* which allows full ϕ -features?, and (c) how can English allow *pro* in NOC constructions but not elsewhere?

In the next section, I will briefly present an alternative proposal that would provide a general treatment for null subjects in all control constructions.

6. Control as feature agreement

We saw throughout this chapter that the embedded clauses in raising and control constructions are full clauses (CPs). We also saw in section 3 that raising constructions are instances of topicalization in Persian rather than subject-to-subject movement as is the case in English. As for control constructions, we observed the following properties:

- The embedded predicate in OC and NOC is in the subjunctive mood, similar to the embedded predicate in the so-called raising construction.
- The tense in raising constructions is anaphoric.
- The tense is anaphoric in some OC constructions, and non-anaphoric in some others.
- Yet overt subject DP is allowed in raising constructions, but not in OC.

This summary suggests that the subject position of a control construction, at least in the case of OC, cannot be PRO. We also saw some problems with respect to *pro* as well as Hornstein's movement theory.

In this section, I suggest an alternative analysis based on Manzini and Roussou (2000) (M&R henceforth). These authors argue against an A(argument)-movement in general, and suggest that the DP is base-generated in its surface position. That is, they depart from the standard transformational theory of A-movement. They propose that the DP in the matrix subject position attracts an aspectual feature of a predicate, and that control is just a special case of this operation where the same DP attracts more than one predicate. This is illustrated in (62)

- (62) [_{IP} *John* I [_{VP} *tried* [_{IP} to [_{VP} *leave*]]]] (Manzini and Roussou 2000:422)

In (62), the DP *John* attracts the thematic features of both predicates. This seems to be some sort of return to the analysis in the 70's when the embedded clause in control and raising constructions were suggested to consist of a VP. However, M&R assume a full embedded clause. As for arbitrary control, they suggest that an operator in C attracts the predicate, and provides the generic reading. What follows in this section is an proposal in the spirit of M&R's analysis.

Descriptively, this proposal has the following properties:

- (63) a. There is an agreement between the features in the matrix predicate and the matrix C(omplementizer) in the case of OC, NOC (64a).
- b. This agreement creates a path with the embedded C and predicate.
- c. A similar agreement holds between C and the predicate in IC constructions (64b), as well as the D(eterminer) and the nominal predicate in NI constructions (64c).

- d. This agreement satisfies the theta-features of the predicates, and determines the semantic type and interpretation of the clause/phrase.
- e. The agreement relation must be strictly local without intervention.

The statements in (63) are schematized in (64).

- (64) a. OC, NOC
 [C DP..... [_{VP} Predicate-φ [C ...[_{VP} ... Predicate-φ]]]
- |-----|-----|-----|-----|
- Agreement
- b. IC
 [C bâyard / shâyad [_{VP} Predicate-φ]
- |-----|
- Agreement
- c. NI
 [D[_{NP} Predicate-φ ...]]
- |-----|
- Agreement

There are many reasons for choosing C and D as the crucial heads. For example, C determines the clause type (finiteness, etc.) and D determines the type of the noun phrase (definiteness, etc.)²³. The agreement between the predicate and C goes through the head of the matrix subject DP in (64a), and creates a path with the embedded C and the embedded predicate. A similar agreement relation is held between C and the predicate in (64b), and D and the nominal predicate in (64c). The difference between (b) and (c) in (64) is that the highest head is a C in the former and a D in the latter. Otherwise, the main principle holds for all cases in (64). The relationship between the highest head and the predicate dictates the type of the clause/phrase, and satisfies the thematic roles of the predicate. It also determines the generic reading in IC and NI constructions. The locality condition in (63e) is supported by the fact that an intervening element blocks the agreement. Thus the ungrammaticality of (57b), repeated in (65) is accounted for.

- (65) *Parviz_i fekr mi-kon-e [ke Kimea sa'y kard [ke PRO_i be-r-e]]
 P thought hab-do-3sg that K effort did that subj-go-3sg
 Intended meaning: Parviz thinks that Kimea tried that he (Parviz) goes.

The proposal advanced here is somewhat different from that suggested by M&R. First, it does not necessarily deny the existence of A-movement in subject prominent languages. This is mainly due to the distinct scope domains observed in control versus raising constructions (cf. examples in (8))²⁴. Second, M&R's analysis is focused on OC and arbitrary constructions, and no suggestions are offered with respect to control in DP constructions. Thus this analysis is an extension of theirs.

There seems, however, to be at least one piece of counter evidence to feature agreement in the case of OC, which is exemplified by quantifier floating as in (66) and (67).

Quantifier Floating:

- (66) a. *hame* mâ sa'y kard-im [ke be sinamâ be-r-im]
 all we effort did-1sg that to cinema subj-go-1sg
- b. mâ sa'y kard-im [ke *hame* be sinamâ be-r-im]
 'We all tried to go to the movies.'
- (67) a. mâ *hame* bacheche-hâ-ro majbur kard-im [ke be sinamâ be-r-an]

²³ A full theoretical justification for this analysis, including the significance of C and D, and the consequences of such an analysis with respect to Phase Theory (Chomsky 2001) is discussed in Karimi (2007a) for ArbC and Karimi (2007b) for OC and NOC.

²⁴ However, see the discussion in M&R where arguments are offered to account for this distinction.

we all child-pl-râ force did-1pl that to cinema subj-go-1pl

- b. mâ bacheche-hâ-ro majbur kard-im [ke *hame* be sinamâ be-r-an]
 ‘We forced all the children to go to the movies.’

The quantifier is inside the embedded vP in (66b) and (67b), as illustrated in (68)²⁵.

(68) ... DP [ke ... [_{DP} *hame*]

If the DP is directly base-generated in its surface position, the sentences in (66b) and (67b) would be predicted to be ungrammatical, contrary to facts. In other words, how can we account for the presence of the quantifier in the embedded clause if we assume a feature agreement between the embedded predicate and the head of the clause, and no overt subject in the embedded clause?

One property of the subjunctive predicate in Persian is that it is attached to an inflectional suffix representing person and number, as seen in (66) and (67). It could be argued that the agreement inflection allows the quantifier to appear in embedded subject position. If this line of argumentation is correct, we should not be able to have an overt noun phrase in the subject position of IC constructions where there is no inflectional suffix. This prediction is borne out as we saw in (34), repeated below in (69).

- (69) *bâyad xod in kâr-râ kard
 must self this job-râ do

The presence of the quantifier in (66) indicates that the subject position of a subjunctive verb is in fact a Nominative Case position. Otherwise, the quantifier would not receive Case in that position, and the sentence would be ungrammatical. This issue further supports the claim that the subject of the OC construction is not PRO.

One obvious question is this: why does the appearance of an overt DP render the sentence ungrammatical in an OC construction? The answer is that the presence of a DP in the subject position of an OC construction is barred by principles of the binding theory. That is, in a sentence like the one in (70), the lower overt DP, a R-expression, is co-indexed and c-commanded by the higher DP, violating Principle C of the binding theory which states that R-expressions should be free everywhere.

- (70) *John_i sa’y kard [_{CP} ke John_i be-r-e]
 John effort did that John subj-go-3sg

Thus the obligatory null subject in OC constructions is predicted by principles that independently exist in the grammar.

7. Conclusion

The discussion in this chapter offers the following conclusions. First, raising is not a subject-to-subject movement in a topic prominent language such as Persian. Second, raising and control constructions are full clauses (CP), contrary to some of the previous suggestions. Third, tense is anaphoric in so-called raising constructions, but not in all types of control constructions. Furthermore, the presence of a full DP in the embedded subject position of a so-called raising verb indicates that Nominative Case is assigned in that position. Similarly, the presence of a quantifier in the embedded subject position of an OC verb indicates that Nominative Case is assigned in that position as well. These facts, combined with the lack of an overt DP in the subject position of impersonal constructions suggests that Tense plus Agreement is the combination that licenses Nominative Case. Crucially, null subjects in certain control constructions can be accounted for by the properties and principles that already exist independently (such as Principles of the binding theory). Finally, it was suggested that feature agreement between the predicate and the head of the CP or DP determines the type of CP/DP and satisfies the theta-features of the predicates.

References

²⁵ Similar cases are observed in English where the quantifier is left behind. This is shown in (i).

(i) We tried to all go to the movies.

- Bach, Emmon 1977 Review of Postal's *On raising*. *Language* 53:621-654
- Boechx, Cedric and Norbert Hornstein 2004 Reply to "Control is not movement". *Linguistic Inquiry* 34:269-280.
- Borer, Hagit 1989. Anaphoric AGR. In Osvaldo Jaeggli and Kennet Safir (eds.) *The Null Subject Parameter*, 69-109. Kluwer Academic Publishers..
- Brame, Michael 1976 *Conjectures and refutations in syntax and semantics*. North-Holland: Studies in Linguistic Analysis.
- Bresnan, Joan 1972 Theory of complementation in English syntax. Doctoral dissertation, MIT, Cambridge.
- Bresnan, Joan 1982 Control and complementation. *Linguistic Inquiry* 13: 343-434.
- Burzio, Luigi 1986 *Italian Syntax*. Dordrecht: Reidel.
- Chomsky, Noam 1973**
- Chomsky, Noam 1981 *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, Noam 1995 *The Minimalist Program*. Cambridge/London: The MIT Press.
- Chomsky, Noam 2005 Three factors in language design. *Linguistic Inquiry* 36:1-22
- Chomsky, Noam 2001 Derivation by phase. In *Ken Hale: A life in language*, ed. by M. Kenstowicz, 1-52. Cambridge/London: The MIT Press.
- Chomsky, Noam, and Howard Lasnik 1977 Filters and control. *Linguistic Inquiry* 8 (3): 425-504.
- Chomsky, Noam, and Howard Lasnik 1993 Principles and parameters theory. In *Syntax: An International Handbook of Contemporary Research*, J. Jacobs, A. von Stechow, W. Stemefeld, and T. Vennemann (eds.), 506-569. Berlin: Mouton de Gruyter.
- Culicover, Peter and Ray Jackendoff 2005 *Simpler Syntax*. New York: Oxford University Press.
- Darzi, Ali 1996 Word order, NP movement, and opacity conditions in Persian. Ph.D. diss., Department of Linguistics, University of Illinois at Urbana-Champaign.
- Davis, William D., and Stanley Dubinsky 2004 *The Grammar of Raising and Control: A Course in Syntactic Argumentation*. Oxford: Blackwell Publishing.
- Folli, Raffaella, Heidi Harley, Simin Karimi 2005 Determinants of event type in Persian complex predicates. *Lingua* 115: 1365-1401.
- Ghomeshi, Jila 1996 Projection and inflection: a study of Persian phrase structure. Ph.D dissertation, Department of Linguistics, University of Toronto.
- Ghomeshi, Jila 1997 Non-projecting nouns and the *ezafe* construction in Persian, *Natural Language and Linguistic Theory* 15 (4): 729-788.
- Ghomeshi, Jila 2001 Control and thematic agreement. *Canadian Journal of Linguistics* 46. 1/2: 9-40.
- Harley, Heidi 2001 Irish, the EPP and PRO. Ms. Department of Linguistics, University of Arizona.
- Hashemipour, Margaret 1989 Pronominalization and control in Modern Persian. Doctoral dissertation, University of California, San Diego.
- Hornstein, Norbert 1999 Movement and Control. *Linguistic Inquiry* 30.1: 69-96.
- Hornstein, Norbert 2003 On Control. In *Minimalist syntax*, R. Hendrick (ed), 6-81. Oxford: Blackwell Publishing.
- Karimi, Simin 1997 Persian complex verbs: idiomatic or compositional. *Lexicology* 3 (2): 273-318.
- Karimi, Simin 1999 Is scrambling as strange as we think it is? *MIT Working Papers in Linguistics* 33: 159-190.
- Karimi, Simin 2005 *A minimalist approach to scrambling: evidence from Persian*. Berlin, Mouton de Gruyter.
- Karimi, Simin 2007a Arbitrary control in Persian. Ms, University of Arizona.
- Karimi, Simin 2007b Control under control. Ms, University of Arizona.
- Karimi, Simin and Michael Brame 1986 A generalization concerning the *ezafe* constructions in Persian. Paper presented at the annual meeting of Western Conference on Linguistics (WECOL), University of British Columbia, Canada.
- Karimi, Simin, Sumayya Racy, Yosuke Sato, and Azita Taleghani (in preparation) Epistemic versus root modals: crosslinguistic analysis. University of Arizona.
- Kayne, Richard 1984 *Connectedness and Binary Branching*. Dordrecht, Foris.
- Kayne, Richard 2000 *Parameters and Universals*. Oxford, Oxford University Press.
- Landau, Idan 2004 The scale of finiteness and control. *Natural Language and Linguistic Theory* 4: 811-877.
- Lasnik, Howard 1995 Last resort and attract F. In *Proceedings of FLSM* 6: 62-81. Indiana University Linguistics Club, Bloomington.
- Manzini, Rita and Anna Roussou 2000 A minimalist theory of A-movement and control. *Lingua* 110: 409-447.
- Martin, Roger 2001 Null Case and the distribution of PRO. *Linguistic Inquiry* 32.1: 141-166.
- Philippaki-Warbuton, I., Catsimali, G., 1999 On control in Greek. In *Studies in Greek Syntax*, A. Alexiadou, G. Horrocks, and M. Stavrou (eds.), 153-168. Dordrecht, Kluwer. .
- Postal 1974**

- Rizzi, Luigi 1982 *Issues in Italian Syntax*. Foris, Dordrecht.
- Rizzi, Luigi 1997 The fine structure of the left periphery. In *Elements of Grammar*, Liliane Haegeman (ed.) 281-337. Netherlands: Kluwer.
- Rosenbaum, 1967**
- Samiian, Vida 1983 Origins of phrasal categories in Persian: an X-Bar analysis. Ph. D dissertation, Department of Linguistics, University of California, Los Angeles.
- Samiian, Vida 1994 The *ezafe* construction: some implications for the theory of X-bar syntax. In *Persian Studies in North America: Studies in Honor of Mohammad AliJazayeri*, M. Marashi (ed.), 17-42. Maryland: Iranbooks.
- Sigurðsson, H. Armann 1991 Icelandic Case-marked PRO and the licensing of lexical arguments. *Natural Language and Linguistic Theory* 9: 327-363.
- Spyropoulos Vassilios 2002 A note on arbitrary null-subjects. *Reading Working Papers in Linguistics* 6: 85-100.
- Stenson Nancy 1989 Irish autonomous impersonals. *Natural Language and Linguistic Theory* 7:379-408
- Stowel, Tim 1982 Tense of infinitives. *Linguistic Inquiry* 13: 561-570.
- Taleghani, Azita H. 2006 The Interaction of modality, aspect, and negation in Persian. Doctoral dissertation, University of Arizona, Tucson, Arizona.
- Terzi, A., 1992 PRO in Finite Clauses: A Study of the Inflectional Heads of the Balkan Languages. Doctoral dissertation, City University of New York.
- Vahedi—Langrudi, Mohammad 1997 The syntax, semantics, and argument structure of complex predicates in Modern Farsi. Doctoral dissertation, University of Ottawa, Ottawa.
- Wumbrandt, Susi 1999 Modal verbs must be raising verbs. WCCFL 18 Proceedings, S. Bird, A. Carnie, J. Haugen, P. Norquest (eds), 599-612, Somerville MA, Cascadilla Press.