Head Finality is not Consistent: Leftward Movement of Farsi Sentential Complements

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1 Introduction

In this paper, I examine the linear order of Farsi/Persian sentential CP complements with respect to the predicate, and argue that the post-predicate position of CP complements follows from the leftward movement of the CP to its own licensing projection (alongside the other nominal arguments). The analysis put forward here argues that Karimi's (2005) head-final VP/*v*P analysis for Farsi and her base-generated post-verbal position for sentential arguments cannot be maintained when complex verbs and bigger verbal clusters are considered. In order to maintain Karimi's analysis, some theory of rightward extraposition must be assumed, which I also argue against by pointing out problems raised by data from CP-subextraction, binding, and ellipsis. In eliminating the need for rightward extraposition while also accounting for subextraction and binding facts, I propose that CPs raise to a final position through movement to a Functional Projection (FP) lower than the projections in which the predicate and the nominal arguments are licensed.

2 Background

2.1 Word Order Facts

Farsi has widely been analyzed in the literature as a SOV language and it is stated that verbs select their complements to the left, while all other categories select their complements to the right; Farsi illustrates head-initiality in NPs, DPs, PPs, and CPs (Darzi, 1996; Mahootian, 2002; Karimi, 2005). For example, (1) shows that the DP and PP arguments *pirhan* 'shirt' and *baraa Kimea* 'for Kimea' precede the simplex verb *xaridan* 'to buy'.

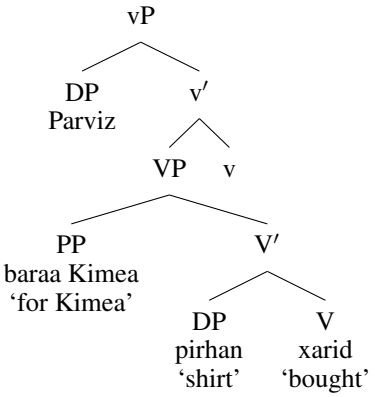
(1) Parviz baraa Kimea pirhan xarid.
Parviz for Kimea shirt bought.3SG
"Parviz bought shirt(s) for Kimea."

In addition to simplex verbs, Farsi has a wide range of complex verbs, which are formed by a Non-Verbal (NV) predicate (Adj, N, P, Adv,...) and a Light Verb (LV). As (2) below shows, non-clausal arguments also surface to the left of complex verbs; in this case, the direct object *Kimea* precedes the predicate *bidaar kardan* 'to awaken'.

(2) Parviz Kimea-ro bidaar kard.
Parviz Kimea-DOM awake did.3SG
"Parviz awakened Kimea."

Karimi (2005) proposes that Farsi verb phrases are head final, accounting for the sentences in (1) and (2) in the following structures in (3) and (4). In (4), the non-verbal predicate is treated as the head of a small clause projection and introduces the internal argument(s) like V does, while the light verb occupies the *v*.

(3)



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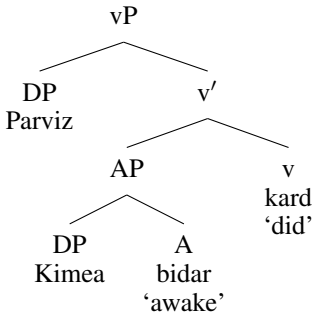


Unlike non-clausal arguments, however, sentential arguments always surface post-verbally. This is true with both simplex and complex verbs. As seen in (5), the CP *ke Kimea xune nist* ‘that Kimea isn’t home’ must follow the simplex verb *goftan* ‘to tell/say’.

(5) a. Parviz be Ali goft [ke Kimea xune nist].
Parviz to Ali said/told.3SG that Kimea home isnt.3SG
“Parviz told Ali that Kimea isn’t home.”

b. *Parviz be Ali [ke Kimea xune nist] goft .
Parviz to Ali that Kimea home isnt.3SG said/told.3SG
“Parviz told Ali that Kimea isn’t home.”

c. *Parviz [ke Kimea xune nist] be Ali goft .
Parviz that Kimea home isnt.3SG to Ali said/told.3SG
“Parviz told Ali that Kimea isn’t home.”

As (6a) below shows, the CP *ke in ketaab-o be-xune* ‘to read this book’ can only surface after the entire complex verb *ghol daadan* ‘to promise’ and it can not precede the NV+LV complex nor intervene between the two elements (as suggested in (6b) and (6c), respectively).

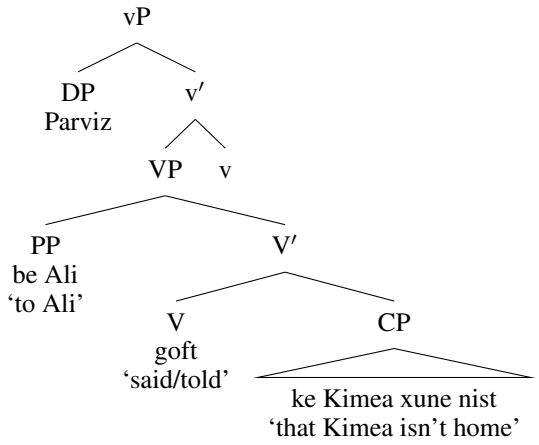
(6) a. Parviz be Ali ghol daad [ke in ketaab-o be-xune] .
Parviz to Ali promise gave.3SG that this book-DOM SBJTV-read.3SG
“Parviz promised Ali to read this book.”

b. *Parviz be Ali [ke in ketaab-o be-xune] ghol daad.
Parviz to Ali that this book-DOM SBJTV-read.3SG
“Parviz promised Ali to read this book.”

c. *Parviz be Ali ghol [ke in ketaab-o be-xune] daad.
Parviz to Ali promise that this book-DOM SBJTV-read.3SG gave.3SG
“Parviz promised Ali to read this book.”

To account for the cases in (5), Karimi proposes that verbs select for their CP arguments to the right while still selecting for nominals to the left, suggesting the following structure in (7).

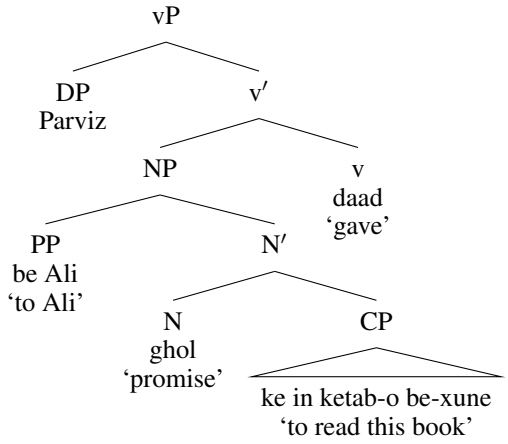
(7)



2.2 Issues with the Base-generation Hypothesis

While Karimi's base-generated post-verbal hypothesis for CPs seems to account for (5), it cannot be extended to (6a) without further assumptions. The issue becomes clear once Karimi's proposed structure for Farsi complex predicates is extended to (6a). Assuming that the non-verbal elements of a complex verb select for their complements the same way that simplex verbs do, CPs are wrongly predicted to be selected to the right of the NV and to intervene between the NV and the LV, yielding the structure in (8). There is, however, no plausible verb movement in (8) that would derive the NV - LV - CP order.

(8)



The analysis runs into further complications when bigger verbal clusters are involved. In the presence of a complex verb + Aux heads, CP arguments consistently surface to the right of the cluster. This is shown with the Perfect Aux in (9a) and with the Future Aux in (10a).

(9) a. Parviz be Ali ghol daad-e ast [ke in ketaab-o be-xune].
Parviz to Ali promise give-PTCPL is.3SG that this book-DOM SBJTV-read.3SG
“Parviz has promised Ali to read this book.”

b. *Parviz be Ali ghol [ke in ketaab-o be-xune] daad-e ast.
Parviz to Ali promise that this book-DOM SBJTV-read.3SG give-PTCPL is.3SG
“Parviz has promised Ali to read this book.”

(10) a. Parviz be Ali ghol xaahad daad [ke in ketaab-o be-xune].
Parviz to Ali promise will.3SG give that this book-DOM SBJTV-read.3SG
“Parviz will promise Ali to read this book.”

b. *Parviz be Ali ghol [ke in ketaab-o be-xune] xaahad daad.
Parviz to Ali promise that this book-DOM SBJTV-read.3SG will.3SG give
"Parviz will promise Ali to read this book."

Again if we assume that the CP originates as a right-hand complement to the NV predicate, then the CP should be able to surface inside the verb cluster, contrary to fact. This shows that the post-verbal base-hypothesis fails to hold unless some theory of rightward extraposition is assumed. Based on the data in (9) and (10), the CP must rightward-extrapose higher than just the smallest *v*P that contains the elements that make up the complex verb. In the following section, I argue that rightward extraposition as an operation is not motivated and there is empirical evidence to suggest that the CP must be low relative to the predicate and the nominal arguments of the predicate.

3 Against Rightward Extraposition

In this section, I argue against rightward extraposition on three grounds: CP's transparency to subextraction, scope interaction between the CP and the nominal arguments, and CP deletion in Farsi *v*-stranding *v*P ellipsis. Each of these is discussed in subsections 3.1, 3.2, and 3.3, respectively.

3.1 Transparency to movement

If sentential complements rightward extrapose and raise to a righthand edge position, they should become islands to extraction. When it comes to Farsi, Karimi (2005) argues against extraposition given empirical evidence of the CP's transparency in (11).

(11) un ketaab-a-ro$_i$ man midoonam [ke Kimea t$_i$ xarid-e ast] .
those book-PL.DOM I know that Kimea buy-PTCPL is.3SG
"As for those books, I know that Kimea has bought (them)."

Additionally, Dutch (Zwart, 1993), Malagasy (Potsdam & Edmiston, 2016), a.o. show the same properties; CPs surface post-verbally in an otherwise head-final configuration, yet they remain transparent to subextraction. Given these observations and Zwart's further argument that movement to the right of the verb isn't motivated for feature checking as no such position is known to exist, I take subextraction as one of the arguments against rightward extraposition.

3.2 Binding

Another piece of evidence against assuming a head-final *v*P and against analyzing CPs as being adjoined to the right of the predicate comes from variable binding facts. Consider the following sentence consisting of the complex predicate *ghol daadan* 'to promise', the Perfect Aux *ast* 'be', the internal PP argument *be har daaneshaamooz* 'to every student' and CP argument *ke ketaab-ash raa be-xaanad* 'to read his book', and the external argument 'Parviz'.

(12) Parviz be **har daaneshaamooz** ghol daade ast [ke **ketaab-ash** raa
Parviz to every student promise give-PTCPL is.3SG that book-his DOM
be-xaanad].
SBJTV-read.3SG
"Parviz has promised every student to read his (every student's) book."

In (12), *har daaneshaamooz* 'every student' variably binds *ketaab-ash* 'his (every student's) book'. Because 'every student' appears to be inside a PP, I assume that the QP can bind out of the PP; this is perhaps due to the P being a case marker or something of the sort, or due to the QP being in [Spec.PP] and the specifier of a specifier being able to c-command and bind into the sister of the PP (Kayne, 1994). I argue that for this binding to be possible, the CP must be in the c-command domain of the PP and therefore quite low in the structure. Since PP arguments are generally analyzed as VP in-situ in VP/*v*P head-final analyses, rightward extraposition of CP in sentences like the one in (12) would position the CP outside of the c-command domain of the PP argument. The CP cannot be argued to adjoin as low as VP given it must follow the entire verbal cluster *ghol daade ast*-'has promised' and cannot intervene between any of the elements within the cluster.

3.3 CP ellipsis

Lastly, I refer to examples of Farsi *v*P ellipsis (Rasekhi, 2018) to argue that the structural position of sentential complements must be lower than the predicate, and therefore not in a rightward extraposed position. Consider the following sentence (13a) consisting of the simplex verb *goft*-'tell', the internal PP argument *be pesar-esh* 'to her son' and CP argument *ke emrooz madaares tatil-and* 'that schools are closed today', and the external argument 'Zahra'.

(13) a. Zahra [be pesar-esh] na-goft [ke emrooz madaares tatil -and].
Zahra to son-her NEG-told.3SG that today schools closed are.3PL
"Zahra didn't tell her son that schools are closed today."

b. Vali Maryam [~~be pesar-esh~~] goft [~~ke emrooz madaares tatil and~~].
but Maryam ~~to son-her~~ told.3SG ~~that today schools closed are~~.3PL
"But Maryam did tell (her son) (that schools are closed today)."

In an ellipsis pair, with (13a) as the antecedent clause, (13b) shows that except for the contrastive external argument 'Maryam' and the predicate, both the PP and the CP are elided. Since Rasekhi analyzes verb phrase ellipsis as an instance of movement of the contrastive elements (the predicate + contrastive arguments) out of the ellipsis site to a TP-internal Focus head, followed by *v*P deletion, the deletion of the PP and the CP arguments must mean that they are trapped inside the *v*P and therefore in a low position.

Sentential complements can also be elided following a complex predicate. The sentence in (14b) shows that the CP 'to present' and 'Ali' both get deleted, with the the direct object DP 'me' and the predicate *majboor kard*-'force' as the remnants.

(14) a. Ali [hama-ro] majboor kard [ke present konan].
Ali all-DOM force did.3SG that present SBJTV-do.3SG
"Ali forced everyone to present."

b. Vali ~~Ali~~ [man-o] majboor na-kard [~~ke present konan~~].
but ~~Ali~~ I-DOM force NEG-did.3SG ~~that present SBJTV-do.1SG~~
"But (he) didn't force me (to present)."

Again, (14) cannot be accounted for through rightward extraposition as the CP must remain inside the *v*P and and be c-commanded by the nominal arguments.

Lastly, sentential complements can be trapped in the ellipsis site following an even bigger cluster: complex predicate + Perfect Aux.

(15) a. Hamid [doost-esh-ro] hanooz ghaaneh na-kard-e ast [ke baaham
Hamid friend-his-DOM yet convinced NEG-do-PTCPL is.3SG that together
berand mosaaferat].
SBJTV-go.3PL trip/vacation
"Hamid hasn't yet convinced his friend to go on a trip together."

b. Vali ~~Hamid~~ [khaanom-esh-o] ghaaneh kard-e ast
but ~~Hamid~~ wife-his-DOM convinced do-PTCPL is.3SG
[~~ke baaham berand mosaaferat~~].
~~that together SBJTV-go.3PL trip/vacation~~
"But (he) has convinced his wife (to go on a trip together)."

CPs that follow a verbal cluster involving an Aux head must be assumed to have adjoined higher than the *v*P, potentially AuxP or TP. Since Rasekhi analyzes such ellipsis cases as *v*P deletion, however, the CP must have remained low in the *v*P and cannot have been raised higher in (15). Based on the data discussed here, I argue that the CP's derived position must be lower than that of the predicate and all the nominal argument(s) in the structure. This, however, cannot be sufficiently achieved through a rightward extraposition approach.

4 Restating the Puzzle and the Solution

The discussion of the post-verbal position of Farsi sentential complements, in the context of the widely adopted head-final VP/*v*P analyses, revisits a puzzle that can be restated as follows: CP arguments show properties of verbal complements, yet it cannot be maintained that they remain VP-internal under a head-final verb phrase approach. Imposing rightward extraposition complicates things further as it poses its own problems and comes short in accounting for the data discussed in section 3. Therefore, I propose that the linear order is derived through leftward movements and rightward extraposition is done away with entirely.

4.1 The Alternative Analysis and Binding

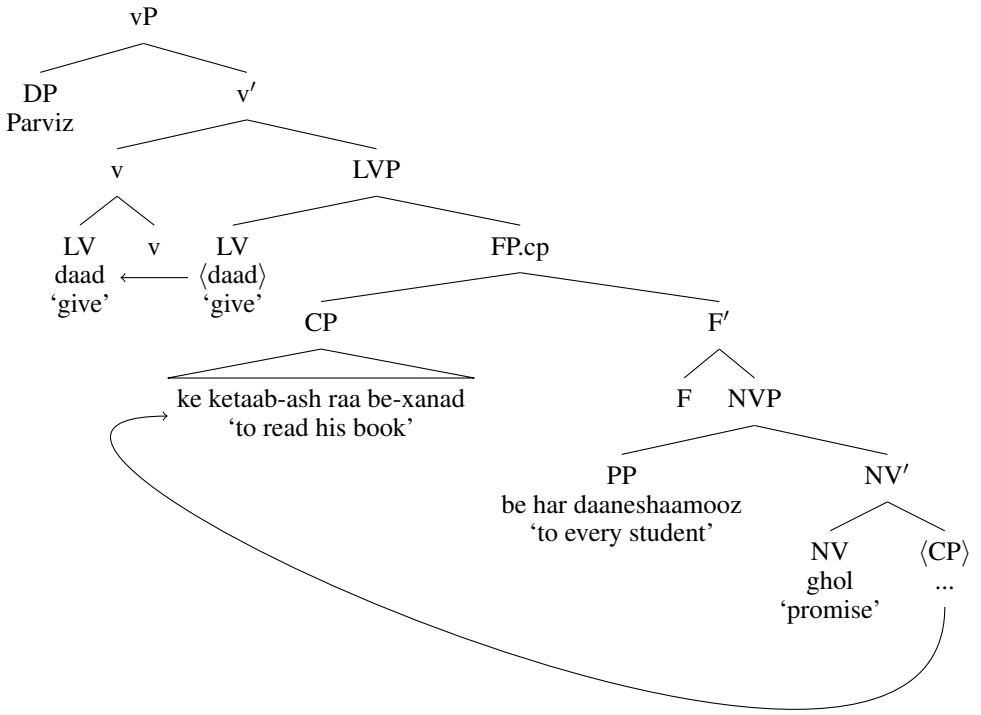
I propose an alternative narrow syntax solution according to which CPs raise to a final position outside of the predicate domain in which they originate. A similar idea has previously been discussed by Taleghani (2006) for Farsi as a way to achieve the correct linear order of the CP and complex verbs. Taleghani considers *v*P remnant movement as a potential analysis. By this analysis, the CP originates as the righthand sister of the NV predicate and must move to a *v*P phase edge due to a [-Focus] feature. Once the NV LV adjacency is achieved, this remnant *v*P moves to the specifier of a Focus phrase yielding the order NV - LV - CP. Even the base-generated post-verbal approach finds *v*P-remnant movement inevitable, though it can be argued that "achieving NV LV adjacency" is not enough to motivate this operation and bigger verbal clusters are still a problem. Additionally, Potsdam & Edmiston (2016) investigate extraposition in Malagasy (a VOSX language) and propose that extraposed constituents move to projection above the predicate's original position (the X position) followed by the remnant movement of the predicate and its object. In the same vein, I argue that Farsi CPs raise out of their original position to a projection lower than where the predicate and its non-clausal arguments surface.

I first lay out my assumptions regarding Farsi phrase structure. Farsi is underlying SVO and all phrases are head initial (Kayne, 1994). Since all word order is derivable from a basic hierarchical Spec-Head-Comp relationship, I account for the derivation of complex predicates in general and the post-predicate position of sentential complements through consistent leftward head and constituent movement to higher licensing functional projections. To show this, I will discuss the derivation of the sentence in (12), repeated below as (16).

(16) Parviz be **har daaneshaamooz** ghol daade ast [ke **ketaab-ash** raa
Parviz to every student promise give-PTCPL is.3SG that book-his DOM
be-xaanad].
SBJTV-read.3SG
"Parviz has promised every student to read his (every student's) book."

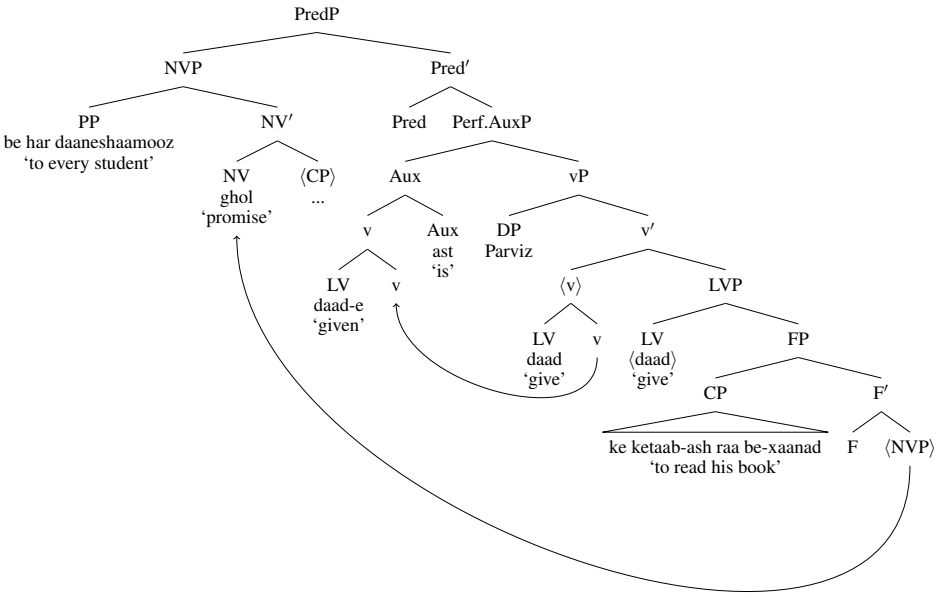
I assume that the non-verbal predicate *ghol* 'promise' projects a small clause and introduces the internal arguments PP 'to every student' and CP 'to read his book'. I propose that CP complements always raise to a licensing functional projection (FP.cp) outside the predicate domain. This is proposed as feature-driven A movement that always targets sentential arguments and is not to simply achieve NV LV adjacency. The light verb (LV) projects its own LVP and is further dominated by the external argument-introducing *v*P. These steps are shown in (17) below.

(17)



The Perfect Aux *ast* ‘be’ hierarchically projects higher than *v*P and attracts the *v*. All small clause predicates (perhaps all predicates in general) obligatorily front to a functional projection (PredP) highest in the verb cluster. PredP is the licensing position that Zwart (1993) and Koster (1999) adopt for small clause predicates in Dutch. In Farsi, this fronting operation targets the constituent that contains the predicate and its internal arguments. Therefore, CP “extraposition” to FP.cp and predicate fronting to PredP operate independently. In this case, NVP remnant moves to PredP as the CP has already been extracted (as shown in 18 below).

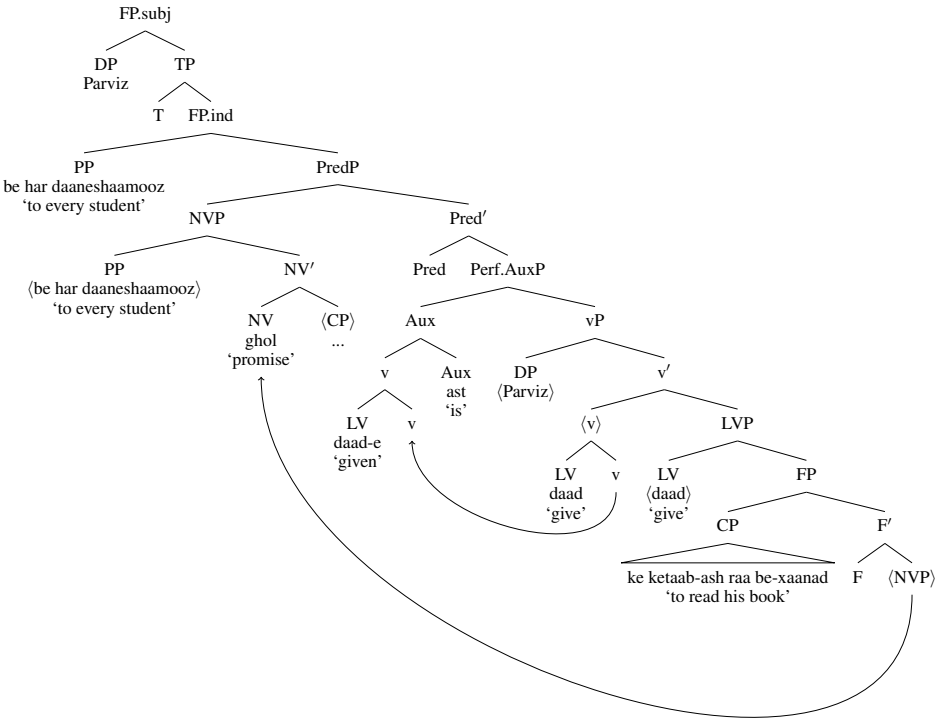
(18)



The derivation is not yet complete as the PP internal argument ‘to every student’ and the DP external argument ‘Parviz’ must further be licensed in their own functional projections FP.ind and

FP.subj, respectively. As the structure in (19) shows, both the PP and the DP c-command the CP in their derived position.

(19)



The proposed analysis has the following advantages: (a) CPs are consistently licensed in their functional projection (similar to the licensing of the dir.obj and ind.obj); (b) CPs in [Spec.FP] are not islands to extraction and the scrambled argument c-commands its trace and properly binds it whether extraction happens prior to or post CP "extraposition"; (c) the binding data are accounted for since CP arguments are in c-command domain of nominal arguments; and (d) rightward extraposition is eliminated as no right edge feature checking position is known to exist (Zwart, 1993).

4.2 The Alternative Analysis and Ellipsis

The analysis in (19) further makes two crucial claims: (a) complex predicates in general are derived through the fronting of the non-verbal predicate XP to a projection above the highest *v*P (auxiliary *v*Ps included), and (b) the elements that make up the verbal cluster at PredP form an XP constituent that can independently be targeted for fronting and ellipsis in Farsi.

When it comes to Farsi *v*P ellipsis of the kind shown in section 3.3 above, there is independent data to suggest it's not sufficient to analyze ellipsis as involving contrastive verb movement to a *v*P-external Foc head and contrastive argument movement to that [Spec.FocP], followed by *v*P deletion (Rasekhi, 2018). Instead, what appears to be "verb" head movement is actually maximal projection movement, and ellipsis can be analyzed as the fronting of constrastive XPs (as remnants) followed by the deletion of the whole *FP.subj* clause. I argue this alternative approach to be the case based on examples such as the following ellipsis pair in (20), consisting of a verbal cluster formed by the complex verb *hedye daadan* 'to gift' and the Future Aux *xaastan* 'to will/want' in the strict order of *hedye xaahad daad* 'gift - will - give':

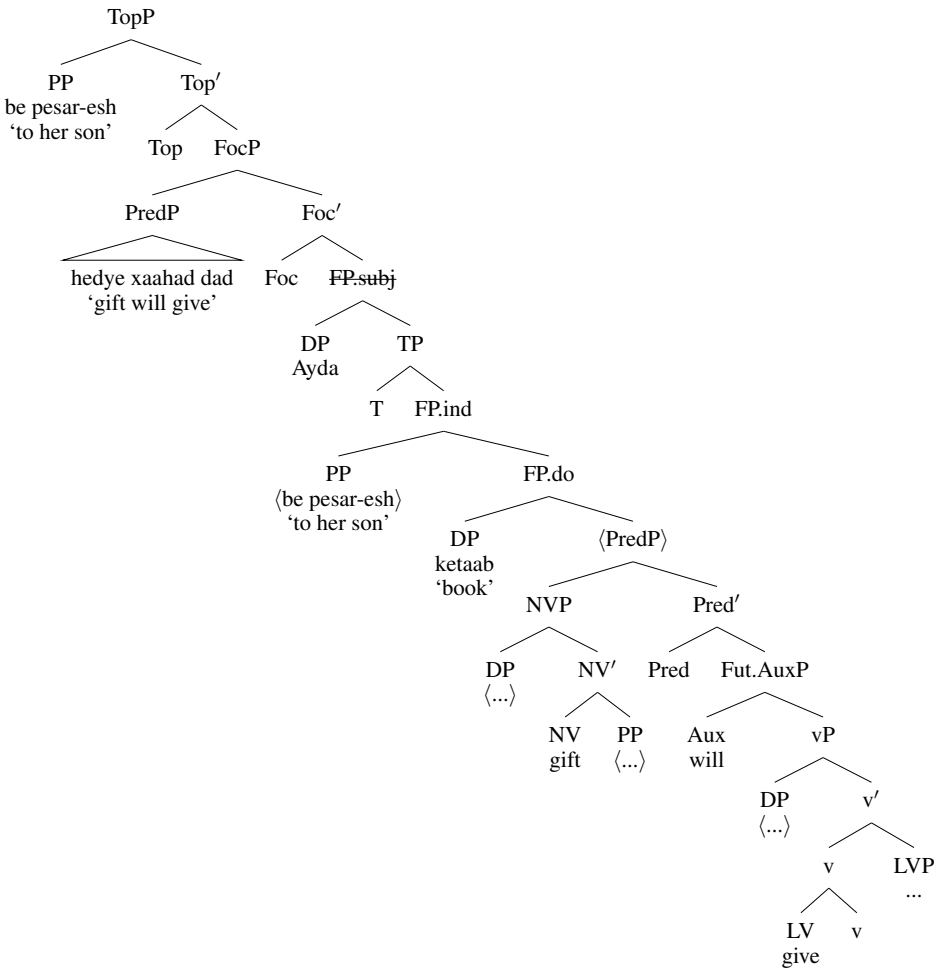
(20) a. Aydaa be doxtar-esh ketab hedye na-xaahad daad.
Aydaa to daughter-her book gift NEG-will.3SG give
"Aydaa will not gift book(s) to her daughter."

b. Vali ~~Aydaa~~ be persar-esh ~~ketab~~ hedye xaahad daad.
but ~~Aydaa~~ to son-her ~~book~~ gift will.3SG give

"But (she) will gift (book(s)) to her son."

As (20b) shows both the contrastive PP argument *be pesaresh* 'to her son' and the entire cluster *hedye xaahad daad* 'will gift' can escape ellipsis. I argue that this cluster movement cannot be an instance of verb to Focus movement (Rasekhi, 2018) as it's not clear how the complex predicate and the intervening Fut Aux ever form a complex head and are targeted as a head. The raising of the verbal cluster out of the ellipsis site is instead an instance of maximal projection (PredP) movement to some higher XP followed by *FP.subj* deletion, as shown in (21) below.

(21)



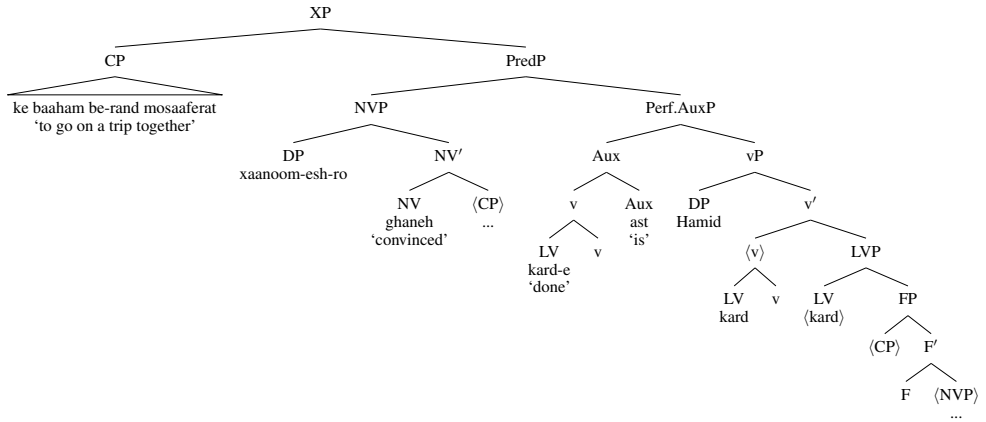
Extending this idea to (15), repeated below as (22), one additional assumption needs to be made to account for (22b).

(22) a. Hamid [doost-esh-ro] hanooz ghaaneh na-kard-e ast [ke baaham
Hamid friend-his-DOM yet convinced NEG-do-PTCPL is.3SG that together
be-rand mosaaferat].
SBJTV-go.3PL trip/vacation
"Hamid hasn't yet convinced his friend to go on a trip together."

b. Vali ~~Hamid~~ [xaanoom-esh-o] ghaaneh kard-e ast
but ~~Hamid~~ wife-his-DOM convinced do-PTCPL is.3SG
[~~ke baaham be-rand mosaaferat~~].
~~that together SBJTV-go.3PL trip/vacation~~
"But (he) has convinced his wife (to go on a trip together)."

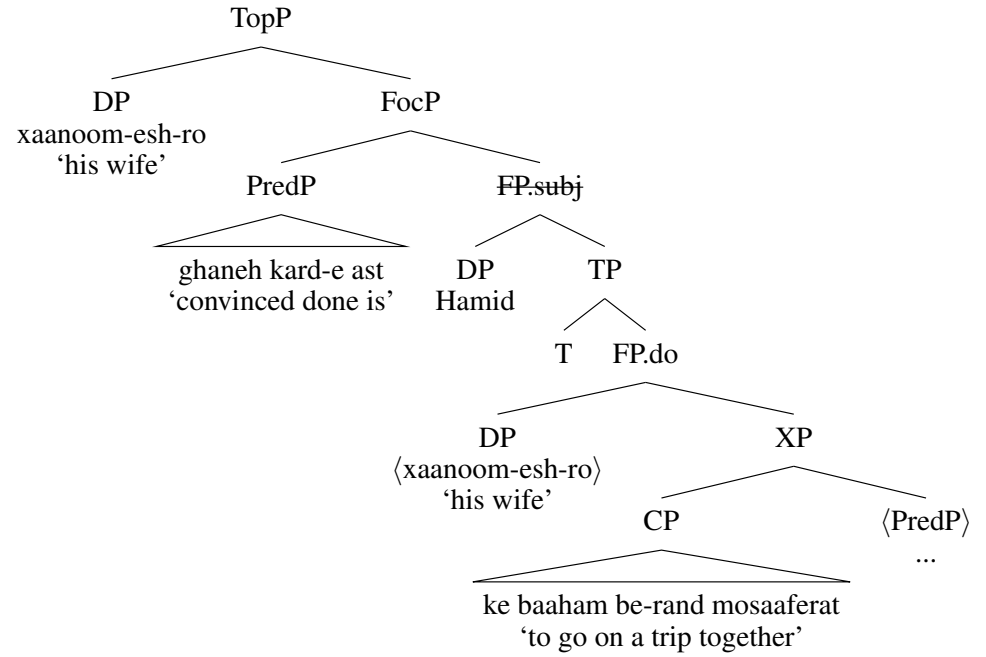
Since the CP argument is also deleted in this sentence and therefore isn't escaping ellipsis alongside the verbal cluster *ghaaneh karde ast*-'has convinced', it must raise out of PredP first to some projection (XP), prior to the movement of PredP out of *FP.subj*. This is shown in (23) below:

(23)



I claim the motivation behind this seemingly vacuous movement is the general requirement of ellipsis that the remnants are in a contrastive relationship with the constituents in the antecedent clause. Since the CPs in (22) don't meet this requirement, the one in (22b) must remain in the ellipsis site and therefore move to a position just outside of PredP but still lower than the derived position of the nominal argument(s). As the structure in (24) shows, the rest of the derivation is as expected; the PredP raises out of the ellipsis site alongside the contrastive DP 'his wife' and *FP.subj* gets deleted.

(24)



Importantly, it is possible for a CP argument to escape ellipsis alongside the verbal cluster if it stands in contrast to the CP in the antecedent clause. An example is given in (25) below. In this case, the PredP that raises out of *FP.subj* in (25b) contains the CP as well.

(25) a. Ali [be bache-ha-sh] ghol daad [ke dir biyad].
Ali to child-PL-his promise gave.3SG that late SBJTV-come.3SG
"Ali promised his children to come late."

b. Vali Zahraa [~~be bache-ha-sh~~] ghol daad [ke zood biyad].
but Zahraa ~~to child-PL-her~~ promise gave.3SG that early SBJTV-come.3SG
"But Zahraa promised (her children) to come early."

5 Conclusion

In this paper, I've revisited the puzzle of post-verbal sentential arguments in Farsi. I have argued that the base-generation account proposed by Karimi (2005) (CPs as righthand sisters to predicates) falls short in accounting for the linear order facts in sentences involving complex verbs and verbal clusters, unless some theory of rightward CP extraposition is assumed. I have pointed out how rightward extraposition poses problems for empirical data involving subextraction, variable binding, and verb phrase ellipsis. As an alternative, I have proposed an LCA (Kayne, 1994) analysis that only relies on leftward movements and assumes that CP arguments move to their licensing projections lower than the positions in which the predicate and all other nominal arguments are licensed. The proposed analysis has the advantage of eliminating rightward extraposition and accounting for the hierarchical relationships as a consequence of consistent feature-driven movements.

Abbreviations

DOM - Differential Object Marking | 3SG - 3rd Person Singular | SBJTV - Subjunctive | PTCPL - Participle | PL - Plural | NEG - Negation | 3PL - 3rd Person Plural

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