Subject-Object Asymmetries in Persian Argument Ellipsis and the Anti-Agreement Theory

Abstract: In this article, we investigate the distribution of argument ellipsis in Persian in the context of the recent debate concerning the syntactic derivation of null arguments. Using sloppy/quantificational interpretations of elided arguments (Oku 1998; Takahashi 2008), we provide novel examples showing that Persian exhibits subject-object elliptical asymmetries. We develop various arguments, based on verb-identity effects, specificity-governed positions of direct objects, VP-internal trapping effects caused by PP-scrambling and anaphor binding, and the relative order of a verb with respect to its clausal complement, against the Verb-Stranding VP-ellipsis analysis of the subject-object asymmetry (Huang 1987, 1991; Otani and Whitman 1991). We argue instead that the asymmetry in question is straightforwardly accounted for by the anti-agreement theory of Saito (2007) to the effect that φ-feature agreement blocks LF-Copy underlying argument ellipsis. Our analysis predicts that the logical subject in Persian should be able to permit argument ellipsis when it is not in the position associated with ϕ-agreement. We show that this prediction is indeed borne out in locative/experiencer-constructions as well as passive constructions whose inanimate logical subjects do not enter into agreement relation with any functional head. We also briefly explore one significant consequence of our analysis for the proper analysis of the so-called differential object marker *–râ* and conclude that this marker is the default morphological case in the technical sense of Marantz (1991).

Keywords: argument ellipsis, verb-stranding VP-ellipsis, sloppy/quantificational interpretation, LF-copy, φ-agreement, -râ

1. Introduction

There has been considerable debate in the last three decades or so over the nature of mechanism(s) responsible for the ellipsis of grammatically required arguments such as subjects and objects within the framework of generative grammar. The most authoritative hypothesis in the field until the 1980s had it that the missing arguments are not literally "empty" in the syntactic structure, but rather occupied by *pro*'s, the null counterpart to regular overt pronouns. The extensive research on null subjects in languages like Italian (Perlmutter 1971; Taraldsen 1978; Chomsky 1981; Jaeggli 1982; Rizzi 1982, 1986) has yielded the well-known generalization that the availability of the *pro*-subject in a language is conditioned by rich agreement under T because the latter, by hypothesis, recovers the φ-features of the missing subject, thereby circumventing the need for overt subjects, unlike in languages with relatively impoverished agreement inflections, such as Modern English. The general validity of this generalization – which later came to be known as *Taraldsen's Generalization* – was soon called into question, however, by parallel investigations into the range and depth of permissible pro-drop patterns in Japanese, Korean and Chinese (Kuroda 1965; Ohso 1976; Hoji 1985; Saito 1985; Huang 1982, 1984), which showed that these languages allow pro drop even more freely than null-subject languages such as Italian even though they uniformly lack any system of φ-agreement – a pattern now widely recognized as *radical pro drop*. Whence has emerged the rather typologically conflicting generalization that *pro* occurs in the context of very rich agreement, as in Italian, or no agreement at all, as in Chinese, Korean and Japanese (see Huang 1982, 1984, Jaeggli and Safir 1989 and Speas 2006 for more detailed discussion).

Alongside the debate concerning the licensing conditions on the distribution of null pronouns, some researchers such as Huang (1987, 1991) and Otani and Whitman (1991)

had raised an important theoretical question whether pro is the only analytical possibility for null arguments in radical pro drop languages. They showed that there are certain instances of null arguments in the East Asian languages whose referential and interpretive properties cannot be wholly explained by the uniform pro-theory, but instead must be analysed in terms of VP-ellipsis – now commonly named *Verb-Stranding VP-Ellipsis* (Goldberg 2005). This line of research has since been extended beyond the East Asian languages to many typologically different languages, including Irish (McCloskey 1991, 2007, 2010), Hebrew (Doron 1999), Swahili (Ngonyani 1996), Egyptian Arabic (Tucker 2011), European/Brazilian Portuguese (Cyrino and Matos 2002; Santos 2009), and Russian (Gribanova 2012, 2013). The new approach pursued by Huang and Otani and Whitman, of course, also sparked a renewed interest in the exact identity of elliptic arguments in the East Asian languages. Subsequent research, particularly, Oku (1998), Kim (1999), Saito (2007) and Takahashi (2008, 2013a, b, 2014), amassed convincing arguments that Japanese, for example, possesses argument ellipsis as a distinct grammatical phenomenon responsible for the generation of elliptic arguments which exhibit sloppy/quantificational interpretations.

The most important research question in the current comparative syntax of elliptic arguments, thus, boils down to which language(s) employ which syntactic mechanism(s) (e.g., *pro*, VP-ellipsis or argument ellipsis) for which null argument(s) (e.g., null subject or null object), as well as why a particular mixture of these combinations, not others, is attested. The objective of this paper is to compare the competing theories of null arguments put forth in the literature from the perspective of Persian, a language which has heretofore never been studied with respect to the phenomenon of argument ellipsis. As we will see shortly, one of the most intriguing grammatical features of Persian is that it

exhibits significant variability in the surface word order of syntactic constituents strictly governed by discourse-configurational notions (non-)specificity and topic/focus, thereby providing us with various testing grounds to empirically distinguish among the competing hypotheses regarding the origin of elliptic argument constructions.

The present paper is organized as follows. In section 2, using sloppy/quantificational interpretations of null arguments as diagnostic tests for argument ellipsis (Oku 1998; Takahashi 2008a, b), we show that Persian exhibits a curious subject-object asymmetry; null objects, but not null subjects, allow sloppy/quantificational interpretations. At first blush, this asymmetry may invite the Verb-stranding VP-ellipsis analysis, according to which a main verb undergoes V-to-T raising, followed by VP-ellipsis. However, we introduce a wide range of arguments, some based on the previous work and others based on language-specific properties of Persian, against this analysis. The arguments include the lack of verb-identity effects, the relative order of specific vs. non-specific direct objects vis-à-vis low adverbs, VP-internal trapping effects created by PP-scrambling and anaphor binding, and the fixed order between verbs and their clausal complements (Karimi 2005). We also point out empirical problems which face other alternative analyses of elliptic arguments in Persian which do not resort to argument ellipsis, including Hoji's (1998) indefinite *pro*-analysis developed on Japanese null object constructions. In section 3, we propose that the core subject-object ellipsis asymmetry is correctly predicted by the anti-agreement theory (Saito 2007) to the effect that the application of LF-Copy underlying argument ellipsis is blocked by the presence of φ-feature agreement under functional heads (Ts and *v*'s). The present analysis further predicts that the empty subject in principle should allow argument ellipsis as long as it stays in a position not associated with such an agreement. We show that this prediction is

indeed borne out in locative/experiencer constructions as well as in passive constructions in which the inanimate logical subject does not enter into agreement relation with any functional head. Our analysis also allows us to narrow down the analytic search space for the identity of the so-called differential object marker *-râ* which has been vigorously contested in the literature on Persian syntax. We put forth a new analysis of this marker as a default morphological case in the technical sense of Marantz (1991)/Bobaljk (2006) which is constituent with the anti-agreement analysis of Persian argument ellipsis. Section 4 is the conclusion of the paper.

2. Subject-Object Asymmetries in Persian Argument Ellipsis

Persian is an Iranian language of the Indo-Iranian sub-branch of the Indo-European family. It is a head-initial language except for the VP-level at which verbs occur in the final position (Karimi 2005). Persian is widely known for its large, open-ended list of complex predicates, consisting of a non-verbal element within the complement of *v* and a semantically bleached light verb generated under *v* (Karimi 1997; Folli et al. 2005: Megerdoomian 2012; Toosarvandani 2009): the number of simplex verbs is extremely limited, with some estimated 120 verbs remaining in current use (Mohammad and Karimi 1992: 195), and most verbal concepts are expressed instead by increased reliance on complex predicates. Persian exhibits subject-verb agreement, but not object-agreement. Examples (1a, b) show that the sentence-final predicate exhibits overt agreement in person and number with the subject, not with the direct object.[1]

[1] The following abbreviations are used in the data section of this paper: ACC, accusative; AOR, aorist; ASP, aspect; CL, classifier; COMP, complementizer; DAT, dative; EZ, ezafe; FUT, future; GEN, genitive; IND, indicative; INTERR, interrogative; NEG, negation; NOM, nominative; PAST, past tense; PL, plural; PASS, passive; PRES, present tense; SG, singular; SUBJ, subjunctive; TOP, topic; 1/2/3, first/second/third persons.

(1)a. Mâ tu xune mi-mun-im.

we in home ASP-stay-1PL

'We stay at home.'

b. To tu xune mi-nun-i.

you in home ASP-stay-2SG

'You stay at home.'

Persian is also a radical pro drop language with frequent use of null arguments in both subject and object positions. In the rest of this section, we investigate the range of possible interpretations available to elliptic arguments in this language.

2.1. *Subject-Object Asymmetry in Persian Argument Ellipsis*

Let us first consider an example of the null object construction. (2b) is a case in point. The clitic *esh* in (2a) is a gender-neutral pronoun. The particle *ham* in (2b–c) has two different functions: it can be used either as a focus particle meaning 'also' or as a topic particle meaning 'as for'. We will simply gloss *–râ* as RÂ until section 3.3 when the precise identity of this marker becomes relevant for our discussion.

(2)a. Kimea moalem-esh-ro dust dâr-e.

Kimea teacher-her-RÂ friend have-3SG

'Kimea loves her teacher.'

b. Parviz ham *e* dust dâr-e. (?strict/sloppy)

Parviz also friend have-3SG

'*Lit*. Parviz also loves *e*.'

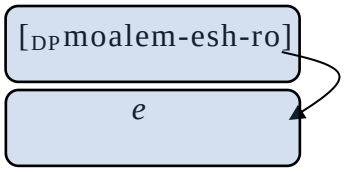
c. Parviz ham un-o dust dâr-e. (strict/*sloppy)
Parviz also him-RÂ friend have-3SG
'*Lit.* Parviz also loves him.'

In (2b), the direct object, designated here as *e*, goes missing due to the fact that the null object is more or less anaphoric to the overt direct object *moalem-esh-ro* 'her/his teacher' in (2a). The missing argument here allows both strict and sloppy interpretations. In other words, the sentence in (2b) means either that Parviz also loves Kimea's teacher (the strict interpretation) or that Parviz also loves Parviz's own teacher (the sloppy interpretation). Suppose that the identity of the null object here is *pro*. Given the plausible heuristic that the syntax and semantics of empty pronouns closely mirrors that of their overt counterparts, the sloppy interpretation for the null object in (2b) would be mysterious. This is because the example in (2c), with the overt pronominal *un-o* 'him' in direct object position, can only yield the strict interpretation.

The argument ellipsis theory, on the other hand, provides a straightforward account for the sloppy interpretation obtained in the null object construction. Here and throughout this paper, we follow Oku's (1998) technical execution of this phenomenon in terms of LF-copy (see section 2.4 for detailed discussion on this theory which relates the availability of argument ellipsis to the availability of Japanese-style scrambling). Oku proposes that in Japanese, an empty argument with sloppy interpretations arises when the argument in question is recovered at LF by copying the overt argument into the ellipsis site. Transporting this LF-Copy analysis to Persian, the null object construction in (2b) is analyzed as shown in (3).

(3) LF: Kimea [$_{DP}$moalem-esh-ro] dust dâr-e.

LF: Parviz ham *e* dust dâr-e.



In this representation, the overt object *moalem-esh-ro* 'her/his teacher' in (2a) is copied at LF onto the corresponding empty object position in (2b) to yield the sloppy interpretation for the null object. Indeed, the example in (4), with the direct object from (2a) repeated in direct object position in (2b), does exhibit the sloppy interpretation.

(4) Parviz ham **moalem-esh-ro** dust dâr-e. (sloppy)
Parviz also teacher-her-RÂ friend have-3SG
'Parviz also loves her teacher.'

We assume throughout this paper that the strict interpretation is derived uniformly by the *pro*, following the traditional *pro*-theory, and focus instead on the availability of the sloppy interpretation, which is the relevant diagnostic test for argument ellipsis.

Turning now to elliptic subjects, the example in (5b) illustrates a null subject construction in which the embedded empty subject is somehow anaphoric to the overt subject in the full-fledged antecedent clause in (5a). Unlike null objects, however, null subjects disallow the sloppy interpretation; (5b) can mean that Parviz said that Kimea's friend knows French, but cannot mean that Parviz said that Parviz's own friend knows French.

(5) a. Kimea goft [$_{CP}$ ke dust-esh farsi balad-e].
Kimea said COMP friend-her Farsi know-3SG
'Kimea said that her friend knows Farsi.'

b. Parviz goft [$_{CP}$ ke *e* farânse balad-e]. (strict/*sloppy)
Parviz said French know-3SG
'*Lit*. Praviz said that *e* knows French.'

c. Parviz goft [$_{CP}$ ke un farânse balad-e]. (strict/*sloppy)
Parviz said COMP he French know-3SG
'*Lit*. Praviz said that he knows French.'

In this regard, it is conceivable that the null subject in Persian must be realized as *pro*, for the overt third-person pronoun *un* only allows the strict interpretation, as shown in (5c).

We introduce further evidence for the subject-object asymmetry in Persian argument ellipsis from the E-type/quantificational ambiguity exhibited by empty arguments in Persian. Takahashi (2008a) proposes the availability of quantificational interpretations as another diagnostic test for argument ellipsis together with sloppy interpretations. Consider first the null object construction in (6b) to illustrate how this test plays out in Persian.

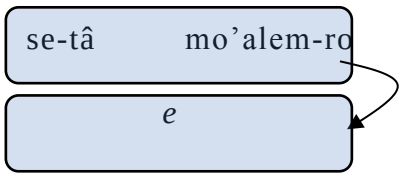
(6) a. Kimea se-tâ mo'alem-ro davat kard.
Kimea three-CL teacher-RÂ invitation did
'Kimea invited three teachers.'

b. Parviz ham *e* davat kard. (E-type/quantificational)
Parviv also invitation did
'*Lit.* Parviz also invited *e*.'

c. Parviz ham un-â-ro davat kard. (E-type/*quantificational)
Parviz also them-PL-RÂ invitation did
'*Lit.* Parviz also invited them.'

The null object in (6b) allows two interpretations. One interpretation – the E-type interpretation (Evans 1980) – is that the set of three teachers that Parviz invited is identical to the set of three teachers that Kimea invited. The other interpretation – the quantificational interpretation – is that the set of three teachers that Parviz invited may be different from the set of three teachers that Kimea invited. The latter interpretation cannot be explained by the pro-theory, for the example in (6c) with the overt plural pronoun *unâ* 'them' blocks the quantificational interpretation. Again, this interpretation is correctly accounted for under the argument ellipsis theory, according to which the LF-representation for (6b) will be as in (7).

(7) LF: Kimea se-tâ mo'alem-ro davat kard.
LF: Parviz ham *e* davat kard.



In this representation, the quantified object *se-tâ mo'alem-ro* 'three teachers' is copied from the preceding clause onto the empty object position in the elliptical clause. The quantificational interpretation obtains because the copied object then can behave independently from its antecedent in terms of quantification.

Example (8b) illustrates the null subject construction. Interestingly, the null subject here only permits E-type interpretations, on a par with overt pronouns, suggesting again that Persian employs *pro*-strategy uniformly for the null subject argument.

(8) a. Kimea goft [$_{CP}$ ke se-tâ dâneshju mi-tun-an ingilisi harf be-zan-an].
Kimea said COMP three-CL student ASP-can-3PL English talk SUBJ-hit-3PL
'Kimea said that three students can speak English.'

b. Parviz goft [$_{CP}$ ke *e* mi-tun-an farânse harf be-zan-an].(E-type/*quantificational)
Parviz said COMP ASP-can-3PL French talk SUBJ-hit-3PL
'*Lit*. Parviz said that *e* can speak French.'

c. Parviz goft [$_{CP}$ ke unâ mi-tun-an farânse harf be-zan-an].(E-type/*quantificational)
Parviz said COMP they ASP-can-3PL French talk SUBJ-hit-3PL
' '*Lit*. Parviz said that they can speak French.'

The question then is what lies behind the interpretive asymmetry between null subjects and null objects in Persian. We discuss one influential analysis of such an asymmetry in the following subsection.

2.2. *The Verb-Stranding VP-Ellipsis Theory of Null Arguments in Persian*

The V-Stranding VP-Ellipsis (henceforth VVPE) Theory, originally proposed for Japanese/Chinese elliptic arguments by Huang (1987, 1991) and Otani and Whitman (1991), maintains that the empty argument in direct object position arises when the main verb is left as a remnant due to overt V-to-T raising followed by VP-ellipsis, thereby giving the surface appearance of elliptic objects. It is well known (Sag 1976; Williams 1977) that in languages with VP-ellipsis such as English, sloppy interpretation for the missing direct object can arise as the result of VP-ellipsis, as shown in (9).

(9) David scratched his arm, and Bob did [$_{VP}$ Ø], too. (strict/sloppy)

a. David [$_{VP}$ λx(x scratch his arm)] → Bob did [$_{VP}$ λx(x scratch his arm)] → strict

b. David [$_{VP}$ λx(x scratch x's arm)] → Bob did [$_{VP}$ λx(x scratch x's arm)] → sloppy

Within William's (1977) system of LF-reconstruction, the strict reading for (9) (i.e., "Bob scratched David's arm too.") obtains when the antecedent VP shown in (9a) is copied onto the empty VP, where *his* is taken as a referential pronoun referring to *David*. The sloppy reading for (9) is derived, on the other hand, by copying the antecedent VP shown in (9b) onto the VP-ellipsis site, where *his* is taken as a variable bound by a lambda operator so that *his* can be bound instead by *Bob*. The point here, of course, is that the ambiguity between sloppy and strict readings is contingent on the prior application of the VP-ellipsis. Consequently, then, it may well be that the subject-object asymmetry in Persian could be similarly explained away through VVPE; that is to say, in Persian, the null object, but not the null subject, allows sloppy readings because only the former is within the VP, as schematically illustrated in (10).

(10) [$_{TP}$ Subject … [$_{VP}$Object + t_v] V + T]]

No ellipsis (strict only) VP-ellipsis (sloppy + strict)

Indeed, Persian has VP-ellipsis, and this operation yields a similar ambiguity, as in English. This point is illustrated in (11b).

(11) a. Kimea ketâb-esh-ro xund.

Kimea book-her-RÂ read

'Kimea read her book.'

b. Parviz ham kamintor. (strict/sloppy)

Parviz also this way

'Parviz too.'(= Parviz also read Kimea's book. Or Parviz also read Parviz's book.)

At first blush, then, the VVPE might look quite feasible for the ellipsis of arguments in Persian. This expectation is further reinforced by Toosarvandani (2009), who shows that Persian has what he calls *v*-stranding VP-ellipsis where the non-verbal element of a complex predicate (as well as its internal arguments) is deleted, leaving behind just the light verb under *v* head. One example of *v*-stranding VP-ellipsis is given in (12).

(12) Sohrâb piranâ-ro out na-zad vali Rostam ~~[$_{NP}$ piranâ-ro otu]~~ zad.

Sohrab shirt.PL-RÂ iron NEG-hit.PAST.3SG but Rostam shirt.PL-RÂ iron hit.PAST.3SG

'Sohrab didn't iron the shirts, but Rostam did.' (Toosarvandani (2009:61))

Toosarvandani proposes that this ellipsis be analyzed as deletion of the complement of the stranded *v*, a pattern strongly reminiscent of the VVPE approach introduced above.

Tempting as the VVPE analysis might be, we introduce below five arguments showing that this analysis cannot be transported to argument ellipsis in Persian. Our first argument against the VVPE analysis concerns the (lack of) verbal-identity requirement imposed on the application of VP-ellipsis. McCloskey (1991, 2007, 2010), Doron (1999), and Goldberg (2005) observe that for VP-ellipsis to occur, the main verb within the VP-ellipsis site must

be identical to the main verb of the full-fledged antecedent clause. This verb-identity requirement is illustrated below in (13a, b) from Irish. See also Doron (1999) and Goldberg (2005) for examples from Hebrew and Swahili illustrating the same requirement.

(13) a. Ar **cheannaigh** siad teach? - Creidim gur **cheannaigh**.
COMP.INTERR buy.PAST they house believe.PRES.1SG COMP buy.PAST
'Did they buy a house?' 'I believe they did.'

b.* Níor **cheannaigh** siad ariamh teach ach **dhíol**.
NEG buy.PAST they ever house but sell.PAST
'Intended: They never bought a house, but they sold (a house).

((13a) from McCloskey (1991: 274); (13b) from McCloskey (2007: 22))

(13a) is fine because the verbs in the antecedent and elliptical clauses are identical. (13b) is ill-formed, on the other hand, because the stranded verb is not identical to its correlate. Bearing this verbal idenity requirement in mind, if the VP-ellipsis is indeed reponsible for the origin of a null object with sloppy readings in Persian, as it should be under the VVPE analysis, we predict that the null object construction in this language should exhibit the verbal-idenity requirement, just like Irish. The grammaticality of the example in (14b) shows, however, that this prediction is incorrect. Here, the verbs in the two otherwise parallel sentences can be different – *nevesht* 'wrote' vs. *xund* 'read', but nonetheless the null object can still exhibit the sloppy (as well as strict) interpretation.

(14) a. Kimea nâma-sh-ro **xund**
Kimea letter-her-RÂ read
'Kimea read her letter.'

b. Parviz ham *e* **neveshte**. (?strict/sloppy)
Parviz also wrote
'*Lit*. Parviz wrote *e*.'

Our second argument against the VVPE analysis comes from the relative order of the specific/non-specific direct object vis-à-vis VP-level adverbials. Consider (15–16)

(15) Kimea [$_{DP}$ mâshin-o] [$_{PP}$ bâ deghghat] mi-shost amma Ali e_{DP}
Kimea car-RÂ with precision ASP-washed.3SG but Ali
[$_{PP}$ bâ bideghghati] khoshk mi-krad. (Specific object > Adjunct PP)
with imprecision dry ASP-did.3SG
'Kimea washed the car carefully, but Ali dried it carelessly.'

(16) Kimea [$_{PP}$ bâ deghghat] [$_{NP}$ mâshin] mi-shost amma Ali
Kimea with precision car ASP-washed.3SG but Ali
[$_{PP}$ bâ bideghghati] e_{NP} khoshk mi-krad. (Adjunct PP > Non-Specific Object)
with imprecision dry ASP-did.3SG
'Kimea washed the car carefully, but Ali dried it carelessly.'

The example in (15) illustrates that the specific object *mâshin-o* 'the car' precedes the VP-level manner adverb *bâ deghghat* 'carefully'. The example in (16) illustrates that this

order is reversed when the object is non-specific. Let us assume then, following Karimi (2003a, b, 2005), that the specific object is outside the VP and moves into the [Spec, *v*P] whereas its non-specific variant remains within the VP (see section 3.2 for further clarifications on this two object position hypothesis and its relevance for the distribution of argument ellipsis as well as for case checking and agreement in Persian). Under this assumption, the only structural position for the manner adverbials in (15) and (16) would be within the VP. The VVPE analysis, then, could not derive the elliptical patterns exhibited in (15) and (16), for it would have no way of deleting the specific/non-specific object without also deleting *bideqqati* 'carelessly' contained within the VP domain.

Our third argument against the VVPE analysis is based on what we might call trapping effects created by scrambling in Persian. The essence of this argument owes itself to Şener and Takahashi's (2010) argument from Turkish, which is in turn constructed on the model of an argument originally developed by Oku (1998) for Japanese argument ellipsis. Consider first examples of PP-scrambling in Persian, shown in (17a, b).

(17) a. Kimea$_i$ [$_{DP}$ ketâb-esh$_{i/*j}$-ro] [$_{PP}$ bâ Arezu$_j$] xund.
Kimea book-her-RÂ with Arezu read
'Kimea read her book with Arezu.'

b. Kimea [$_{PP}$ bâ Arezu$_j$]$_k$ [$_{DP}$ ketâb-esh$_{i/j}$-ro] t_k xund.
Kimea with Arezu book-her-RÂ read
'Kimea read her book with Arezu.'

In (17a), the anaphoric third-person pronoun *esh* can refer to *Kimea*, but not to *Arezu*. Once we scramble the PP across the accusative DP, however, the pronoun can refer

either to *Kimea* or *Arezu*. This effect brought about by scrambling is illustrated in (17b). For the sake of argument, we adopt the analysis proposed by Karimi (1999, 2003a, b, 2005), according to which scrambling in Persian is driven by topic or focus, and assume that the scrambling of the PP in (17b) targets [Spec, FocP] above the TP; the surface subject is then located in [Spec, TopP]. Bearing this observation in mind, let us now consider the example of an empty object construction shown in (18b).

(18) a. Kimea$_i$ [$_{DP}$ ketâb-esh$_{i/*j}$-ro] [$_{PP}$ bâ Arezu$_j$] xund. (= (17a))
Kimea book-her-RÂ with Arezu read
'Kimea read her book with Arezu.'

b. … ammâ Parviz e_{DP} [$_{PP}$ bâ Arezu$_j$] na-xund.
but Parviz with Arezu NEG-read
'*Lit.* … but Parviz didn't read *e* with Arezu.'

The example in (18b) allows the sloppy interpretation whereby Parviz didn't read Parviz's book with Arezu. The crucial fact to note here is that in (18b), the anaphoric pronoun can refer to *Parviz*, but not to *Arezu*. This means that the PP *bâ Arezu* 'from Arezu' has not undergone scrambling; recall the contrast between (17a) and (17b). The only structure for (18b), then, which meets this requirement under the VVPE ellipsis, would be something like (19). The element to be deleted is indicated by double strikethroughs.[2]

[2] Below, we will provide independent evidence against overt V-to-T raising in Persian, which the VVPE analysis resorts to for the derivation of the null object construction, based on the relative order of a verb with respect to its clausal complement. Hence, the representation in (19) should be taken to simply illustrate the derivation of the example in (18) under the VVPE-analysis.

(19) [$_{TopP}$ Parviz$_i$ … [$_{vP}$ [$_{DP}$ketâb-esh$_{i/*j}$-ro] [$_{PP}$ bâ Arezu$_j$] t_v] na-xund.

Parvi book-her-RÂ with Arezu NEG-read

Overt V-to-T Raising

As can be seen in (19), the VVPE would not be able to delete just the specific direct object DP in [Spec, *v*P] without also deleting the following adjunct PP because both phrases are contained with the VP-ellipsis site. Accordingly, the sloppy interpretation in (18b) would remain mysterious under the VVPE theory.

We would also like to further note that the VVPE analysis for null arguments in Persian has an empirical problem independently of the ellipsis paradigms discussed so far. Recall that this analysis presupposes that main verbs in Persian undergo overt head movement to Ts so that only the internal arguments of the verbs are subject to ellipsis due to subsequent application of the VP-ellipsis. However, there is reason to believe that Persian has no overt V-to-T raising. It is true that, as we have mentioned at the beginning of section 2, Persian is a verb-final language like Japanese. As such, it is difficult to tell whether there is overt V-to-T raising in Persian since the word order effects of such movement are string-vacuous. Importantly, however, Karimi (2005) develops a solid empirical argument against V-to-T raising in Persian based on the relative order of main verbs with respect to their sentential complements.[3] As stated in

[3] See also Toosarvandani (2009: 74–78) for another potential argument against overt V-to-T raising in Persian based on the availability of the so-called repetitive/restitutive readings induced by the modifier *dobāre* 'again' under *v*-Stranding VP-Ellipsis (Johnson 2004; von Stechow 1996; Rapp and von Stechow 1999). We won't discuss Toosarvandani's argument here since his analysis is founded on a different set of assumptions from ours regarding the structural positon of specific vs. non-specific objects in Persian whose justifications would go far beyond the scope of this paper.

the beginning of section 1, Persian is a head-final language, but clausal arguments of verbs occur post-verbally, as in (20).

(20) Kimea Parviz-o vâdâr kard [$_{CP}$ ke nâma-sh-o tâype kon-e].
Kimea Parviz-RÂ force did-3SG COMP letter-her-RÂ type do-3SG
'Kimea forced Parviz to type her letter.' (Karimi (2005: 10))

It is reasonable to assume that clausal complements are based-generated in the complement position of the verb instead of being extraposed there from the pre-verbal position. Example (21) shows that a DP can be extracted from within the CP; if the CP had undergone extraposiiton to the surface post-verbal position, it should have formed an island for extraction, erroneously ruling out the example.

(21) [$_{DP}$ un ketâb-â-ro]$_i$ man mi-dun-am [$_{CP}$ke Kimea t_i xaride].
that letter-PL-RÂ I ASP-know-1SG COMP Kimea bought-have-3SG
'As for those letters, I know that Kimea has bought.' (Karimi (2005: 10))

Note now that, given this independent assumption, overt V-to-T raising would predict that the clausal complement of the verb should precede the verb because such an operation would move the V to the head position of the right-headed TP. Example (22) shows that this prediction is not borne out.

(22) * Kimea Parviz-o [$_{CP}$ ke nâma-sh-o tâype kon-e] vâdâr kard.
Kimea Parviz-RÂ COMP letter-her-RÂ type do-3SG force did-3SG
'Kimea forced Parviz to type her letter.' (Karimi (2005: 10))

To conclude our arguments against the VVPE theory discussed in this subsection, let us make sure that the argument ellipsis theory can accommodate the examples discussed here. Firstly, the lack of the verbal identity requirement is correctly predicted by this theory because the null object there is simply the by-product of copying the overt direct object onto the corresponding null object slot, in the manner already shown in (3). The deletion of the specific/non-specific object to the exclusion of the VP-internal PP-adverbs also makes sense since argument ellipsis, by hypothesis, applies directly to arguments themselves. The examples illustrating VP-internal trapping effects created by PP-scrambling and anaphor binding are accommodated in the same way. Finally, the evidence against V-to-T raising in Persian is consistent with the argument ellipsis theory, for the application of LF-Copy is independent of such a process, unlike in the VVPE theory.

2.3. *Hoji's (1998) Indefinite Pro-Theory*

There is an interesting alternative theory of null arguments developed extensively in Hoji (1998), who suggests that the sloppy interpretation of the null object in Japanese has nothing to do with whether it undergoes ellipsis, be it argument ellipsis or VP-ellipsis. Hoji argues instead that what null objects exhibit is merely "sloppy-like" readings which are derived by the indefinite use of pro (i.e., *pro*$_{NP}$) on a par with indefinite bare nominals. This indefinite *pro* theory is illustrated in Japanese examples below.

(23) a. Subete-no itinensei$_i$-ga soitu$_i$-no booru-o ketta.
all-GEN first-year student-NOM that guy-GEN ball-ACC kicked
'Every first-year student kicked his/her ball.'

b. Subete-no ninensei-mo *e* ketta. (sloppy)
all-GEN second-year student-NOM kicked
'*Lit*. Every second-year student also kicked *e*.'

c. Subete-no ninensei-mo booru-o ketta.
all-GEN second-year student-also ball-ACC kicked
'Every second-year student also kicked a ball.' (Hoji (1998: 141))

The null object in (23b) allows the sloppy interpretation that every second-year student kicked his/her own ball. Hoji observes that the real-world situation described by this interpretation can be truthfully expressed by the sentence in (23c) which has the bare indefinite nominal argument *booru* 'ball' in the direct object position. Accordingly, he concludes that the sloppy interpretation can be accommodated by the null variant of the indefinite bare noun, namely, pro_{NP}.

It is clear that this analysis works nicely for the derivation of the sloppy interpretation for null objects, but it makes wrong empirical predictions when it is tested against sentences within quantificational contexts, another diagnostic we have introduced in section 2.1 for argument ellipsis. Examples (24) are a case in point.

(24) a. Kimea bishtar az panj mehmun davat kard.
Kimea more than five guest invitation did
'Kimea invited more than five guests.'

b. Parviz ham *e* davat kard. (E-type/quantificational)
Parviz also invitation did
'*Lit*. Parviz also invited *e*.'

c. Parviz ham mehmun *davat* kard.
Parviz also guest invitation did
'Parviz also invited guests.'

The example in (24b) permits both E-type and quantificational interpretations according to which the set of five guests Kimea invited are identical to, or may be different from, the set of five guests that Parviz invited. We have shown in section 2 that the quantificational interpretation results from argument ellipsis/LF-Copy. The interesting point about (24b) is that these two are the only interpretations available for the null object. Importantly, our native speaker consultants of Persian unanimously agree that this example cannot mean that Parviz invited (an indefinite number of) guests. Hoji's analysis predicts, however, that this interpretation should be available in (24b), because the overt counterpart of the indefinite pro_{NP} allows this interpretation in (24c).

The Persian examples in (25), which we constructed on the model of the Japanese examples developed by Saito (2007) against Hoji's analysis, also make the same point.

(25) a. Kimea gozâsht[$_{CP}$ke kelâs avvali-yâ ketâb-e xod-eshun-o be-xun-an].
Kimea let COMP class first-PL book-EZ self-their-RÂ SUBJ-read-3PL
'Kimea let the first graders read their own book.'

b. ammâ *e* na-zâsht [$_{CP}$ke kelâs dovvomi-yâ *e* be-xun-an]. (sloppy)
but NEG-let COMP class second-PL SUBJ-read-3PL
'*Lit*… but (she) didn't let the second graders read *e*.'

c. ammâ *e* na-zâsht [$_{CP}$ke kelâs dovvomi-yâ *ketâb* be-xun-an].
but NEG-let COMP class second-PL book SUBJ-read-3PL
'… but (she) didn't let the second graders read books.'

The null object example in (25b) permits the sloppy interpretation that the second graders were not allowed to read their own books. Interestingly, this sentence can be used in a situation where they were allowed to read some books, say, books owned by first- or second-graders; it is just that Kimea did not let them read their own books for some reason. This reading should not be possible under Hoji's indefinite *pro* analysis, however, because the example in (25c), which has the overt indefinite bare noun *ketâb* 'book' in the direct object position, cannot be used to describe the context alluded to above; that is, (25c) means that the second graders were not allowed to read any books in the first place. We conclude then that Persian possesses argument ellipsis as a distinct grammatical option.

2.4. *Oku's (1998) Scrambling Hypothesis and Persian Argument Ellipsis*

One of the most intriguing questions in the comparative study of argument ellipsis is what grammatical property enables the option of argument ellipsis in a particular language. In his pioneering work on this topic, Oku (1998) puts forth an explicit hypothesis which links the availability of argument ellipsis to the availability of Japanese-style scrambling. This hypothesis builds on Bošković and Takahashi's (1998) theory of Japanese scrambling. Assuming that θ-roles are among formal features which can drive syntactic

computation (see also Hornstein 1999), Bošković and Takahashi propose that so-called "scrambled" phrases in Japanese are base-generated at their surface position and undergo obligatory LF-lowering to a θ-position to check a θ-feature of the predicate. To illustrate this theory, *sono-hon* 'that book' in (26a) is directly merged at its surface position in overt syntax and later lowers to the θ-position of the embedded verb *watasita* 'handed' to check its undischarged internal θ-feature at LF, as shown in (26b).

(26) a. Sono hon-o Bill-ga [$_{CP}$ Mary-ga John-ni watasita-to] omotteiru.
that book-ACC Bill-NOM Mary-NOM John-DAT handed-COMP think
'That book, Bill thinks that Mary handed to John.'

b. Bill-ga [$_{CP}$ Mary-ga John-ni sono-hon-o watasita-to] omotteiru.
LF-lowering for θ-feature checking

Bošković and Takahashi argue that this base-generation approach to scrambling is possible in Japanese because θ-features in this language are weak in the sense of Chomsky (1995). According to Chomsky (1995), weak features must be checked before the syntactic derivation reaches LF and hence can be tolerated in overt syntax whereas strong features must be checked in overt syntax before they reach PF. A "lowering" derivation like the one shown in (26b) is legitimate in Japanese as long as the "scrambled" phrase checks the θ-feature of the embedded predicate by means of lowering before the derivation reaches LF. Bošković and Takahashi suggest that such a derivation is illegitimate in English, on the other hand, because θ-features are strong in this language.

Oku (1998) proposes that this weakness of θ-features in Japanese also makes it possible for LF-Copy of an overt argument in the antecedent clause onto the

corresponding elliptic site in the antecedent clause. To illustrate this theory using a null object construction, a transitive verb in Japanese may occur without its direct object argument in overt syntax, as shown in (27a), since its θ-feature is weak and hence does not have to be checked until LF. An overt argument is then countercyclically merged at LF with the verb to check the weak θ-feature of the verb for the derivation to converge, as shown in (27b). Since LF-objects, by definition, lack phonetic content, we get the null object construction.

(27) a. Overt Syntax: $[_{VP}$ V]

b. LF: $[_{VP}$ V DP]

Oku's hypothesis straightforwardly derives the observation that Japanese allows argument ellipsis in any grammatical position including subjects and objects, as shown in (28–31).

(28) a. John-wa zibun-no tegami-o sute-ta.
Taro-TOP self-GEN letter-ACC discard-PAST
'Taro threw out his letter.'

b. Mary-mo *e* sute-ta. (strict/sloppy)
Hanako-also discard-PAST
'*Lit*. Hanako also threw *e* out.' (Otani and Whitman (1991:346–347))

(29) a. Mary-wa $[_{CP}$zibun-no teian-ga saiyoo-sare-ru-to] omotteiru.
Mary-TOP self-GEN proposal-NOM accept-PASS-PRES-COMP think
'Mary thinks that her proposal will be accepted.'

b. John-mo [$_{CP}$ *e* saiyoo-sare-ru-to] omotteiru. (strict/sloppy)
John-also accept-PASS-PRES-COMP think
'*Lit*. John also thinks that *e* will be accepted.' (Oku (1998: 165))

(30) a. Taroo-wa sannin-no sensei-o sonkesiteiru.
Taro-TOP three-GEN teacher-ACC respect
'Taro respects three teachers.'
b. Hanako-mo e sonkeisiteiru. (E-type/quantificational)
Hanako-also respect
'*Lit*. Hanako also respects *e*.' (Şener and Takahashi (2010:81–82))

(31) a. Sannin-no onnanoko-ga Taro-ni ai-ni kita.
three-GEN girl-TOP Taro-DAT see-to came
'Three girls came to see Taro.'
b. *e* Ken-ni-mo ai-ni kita. (E-type/quantificational)
Ken-TOP-also see-to came
'*Lit*. *e* also came to see Ken.' (Şener and Takahashi (2010:84))

The examples in (28b) and (30b) show that the null object argument permits sloppy/quantificational interpretations. The examples in (29b) and (31b) show that the same interpretations are available for the null subject arguments. The symmetric argument ellipsis is possible precisely because these positions can be reconstructed by countercyclic LF-merger thanks to the weak specification of θ-features in this language.

It is important to check whether Oku's (1998) scrambling hypothesis correctly circumscribes the behavior of Persian with respect to scrambling and argument ellipsis because Persian allows scrambling and argument ellipsis alike. Three considerations, however, reveal that the answer is negative. First, Oku's hypothesis makes the typological prediction that the availability of argument ellipsis in a language correlates with the availability of Japanese-style scrambling and vice versa (Bošković (2004)). This prediction is shown in (32a, b).

(32) Oku's (1998) Scrambling Hypothesis and Its Predictions

a. If a language *L* has Japanese-style scrambling, *L* has argument ellipsis.

b. If a language *L* has argument ellipsis, then *L* has Japanese-style scrambling.

Specifically, Oku's hypothesis predicts that Persian, being an argument ellipsis language, should have Japanese-style scrambling. A large body of work on Japanese scrambling (Fukui 1993; Saito 1989, 1992; Saito and Fukui 1998) takes the defining characteristic of Japanese-style scrambling to be its undoing property, or *radical reconstruction* in Saito's (1989) terms. This property manifests itself in the obligatory narrow scope of the scrambled phrase, as illustrated in (33).

(33) Daremo-ni dareka-ga [$_{CP}$ Mary-ga *e* atta-to] omotteiru. (∃>∀;*∀>∃)

everyone-DAT someone-NOM Mary-NOM met-COMP think

'*Lit.* Everyone, someone thinks that Mary met.'

(Bošković and Takahashi (1998: 354))

The reason that the scrambled universal quantifier *daremo*-ni 'everyone-DAT' cannot take scope over the existential quantifier *dareka-ga* 'someone-NOM' in its surface position is that the former must undergo obligatory LF reconstruction, or LF lowering in Bošković and Takahashi's terms, to the complement position of the embedded verb to check the undischarged θ-feature of the verb. Turning to the corresponding case in Persian, Example (34) shows that the "scrambling" of the existentially quantified DP *ye pesar-i-ro* 'one boy' to the sentence-initial position yields the wide scope reading with respect to the universally quantified matrix subject *har dâneshju-i* 'every student'. Note that the derived scope is not available when the DP stays in its base-generated position, as in (35).

(34) Ye pesar-i-ro$_i$ har dâneshju-i tu in kelâs fekr mi-kan-e [$_{CP}$ Kimea t_i
a boy-IND-RÂ every student-IND in this class thought ASP-do-3SG Kimea
dust dâr-e. (∀>∃;∃>∀)
friend have-3SG
'Every student in this class thinks that Kimea loves one boy.' (Karimi (2005: 166))

(35) Har dâneshju-i tu in kelâs fekr mi-kan-e [$_{CP}$ Kimea ye pesar-i-ro
every student-IND in this class thought ASP-do-3SG Kimea a boy-IND-RÂ
dust dâr-e. (∀>∃;*∃>∀)
friend have-3SG
'Every student in this class thinks that Kimea loves one boy.' (Karimi (2005: 166))

In this regard, then, the long-distance "scrambling" in Persian behaves on a par with topicalization in English, illustrated in the examples in (36a, b), which show that the topicalized DP *everyone* can have wide scope only in its derived position.

(36) a. Everyone, someone thinks that Mary met. (∃>∀; ∀>∃)

b. Someone thinks that Mary met everyone. (∃>∀; *∀>∃)

((36a) adopted from Bošković (2004: 618))

The above discussion, thus, disproves the second prediction of Oku's hypothesis in (32b) because Persian exhibits argument ellipsis, but lacks Japanese-style scrambling as defined by radical reconstruction. See also Li (2007), Aoun and Li (2008), and Cheng (2012) for supporting arguments that Mandarin is another argument ellipsis language which does not possess Japanese-style scrambling; see Stjepanović (1999) and Bošković (2009) who show that the other prediction of Oku's theory in (32a) is disproved by Serbo-Croatian, which has Japanese-style scrambling, but lacks argument ellipsis entirely.

Our observation that Persian does not have Japanese-style scrambling is also bolstered by the fact that the former allows long-distance scrambling of adjunct phrases. It has been pointed out by Miyara (1982) and Saito (1985) that adverbials cannot undergo long-distance scrambling. This observation is illustrated in (37b).

(37) a. Mary-ga [$_{CP}$ John-ga riyuu-mo naku sono setu-o sinziteiru-to] omotteiru.
Mary-NOM John-NOM reason-even without that theory-ACC believe-COMP think
'Mary thinks that John believes in that theory without any reason.'

b.* Riyuu-mo naku$_i$ Mary-ga[$_{CP}$ John-ga e_i sono setu-o sinziteiru-to] omotteiru.
reason-even without Mary-NOM John-NOM that theory-ACC believe-COMP think
'Without reason, Mary thinks that John believes in that theory.'

(Saito (1985), as cited in Bošković and Takahashi (1998: 355))

Under the standard analysis of Japanese scrambling as a purely optional movement without any driving force (Fukui 1993; Saito 1989, 1992; Saito and Fukui 1998), the ungrammaticality of (37b) remains mysterious. Bošković and Takahashi argue that this observation is exactly what is predicted under their LF-lowering analysis. Unlike arguments such as *sono hon-o* 'that book' in (26b), adjunct PPs such as *riyuu-mo naku* 'without a reason' has no θ-theoretic driving force to be lowered to the embedded clause. As a result, the Last Resort Principle blocks this option, rendering (37b) ungrammatical. This syntactic property thus serves as another reference point for Japanese-style scrambling as characterized by the weak specification of θ-features.

Again, Persian scrambling behaves different from Japanese scrambling in this regard. Examples (38–39) illustrate that the Persian equivalent to the reason adjunct *bedun-e dalil* 'without a reason' can undergo long-distance scrambling to the matrix clause.

(38) Kimea fekr mi-kon-e [$_{CP}$ ke Parviz bedun-e dalil be Obama
Kimea think ASP-do-3SG COMP Parviz without-EZ reason to Obama
etminân dâr-e].
trust have-3SG
'Kimea thinks that Parviz trusts Obama without a reason.'

(39) Bedun-e dalil$_i$ Kimea fekr mi-kon-e [$_{CP}$ ke Parviz e_i be Obama
without-EZ reason Kimea think ASP-do-3SG COMP Parviz to Obama
etminân dâr-e].
trust have-3SG
'Without a reason, Kimea thinks that Parviz trusts Obama.'

This contrast thus clearly shows that Persian does not have Japanese-style scrambling, further reinforcing our conclusion that the prediction in (38b) is incorrect.

Finally, recall that Oku's hypothesis derives the fact that Japanese allows argument ellipsis in both subject and object positions by the assumption that θ-features are weak in this language. The possibility of object argument ellipsis in Persian, then, means that θ-features are weak in this language as well. Obviously, this result contradicts with our earlier observation in section 2.1 that Persian exhibits the robust asymmetric distribution between subject and object positions with respect to argument ellipsis.

3. The Agreement-Based Analysis of the Subject-Object Ellipsis Asymmetry in Persian

The central question of our ongoing quest into argument ellipsis in Persian is how the subject-object asymmetry is derived from our current analysis. We argue in this section that LF-Copy is blocked in the subject position in Persian by ϕ-feature agreement, adopting the Anti-Agreement Hypothesis originally developed by Saito (2007), as further extended to other languages such as Chinese and Malayalam by subsequent work by Şener and Takahashi (2010) and Takahashi (2013a, b, 2014) and Miyagawa (2013).

3.1. *Saito's (2007) Anti-Agreement Hypothesis*

Adopting Oku's (1998) LF-Copy theory of argument ellipsis without its θ-theoretic implementation, Saito (2007) proposes that this process can only apply to the syntactic positions which do not enter into ϕ-feature agreement with functional heads – Ts and *v*'s – and derives this restriction from Chomsky's (2000) *Activation Condition*. Within the Probe-Goal-Agree system of Chomsky (2000), the uninterpretable ϕ-features of the probe T or *v* search for a goal DP with the matching interpretable ϕ-features. The matching of the ϕ-feature sets induces the deletion of the uninterpretable ϕ-features of the probe through the mechanism of Agree. The crucial assumption Chomsky adopts in this system is that the Agree operation is triggered by an uninterpretable Case feature of the goal. The Case feature is hypothesized to be deleted together with the uninterpretable ϕ-feature of the probe as the reflex of the Agree relation that takes place between the probe and goal. In this system, no Case checking/valuation on a DP would exist without it entering in an agreement relationship with an appropriate functional head; the Case feature on the DP will be realized/valued as nominative if it Agrees with the T head but as accusative if it Agrees with the transitive *v* head.

Saito shows that this system effectively blocks LF-Copy from targeting the syntactic positions associated with Ts or *v*'s with uninterpretable ϕ-features. To see how this is so, consider the following steps of the syntactic derivation required for argument ellipsis under the LF-copy analysis, where Ts or *v*'s have the uninterpretable ϕ-features and *e* stands for an empty argument position

(40) a. F_1 {~~ϕ-features~~} .... DP_1 {ϕ-features, ~~Case~~}

b. F_2 {ϕ-features} ... *e* ....

c. F_2 **{*ϕ-features}**... DP_1 {ϕ-features, ~~Case~~} ...

In (40a), the probe F_1 with the uninterpretable ϕ-features searches for the goal DP_1 with the matching ϕ-features. Agree then results in the deletion of the uninterpretable ϕ-features of the probe and of the uninterpretable Case feature of the goal. Suppose now that we copy the DP_1 from (40a) onto the empty argument position designated as *e* in (40b). The result of this copying operation is shown in (40c). Recall that the Agree operation can only be triggered by the presence of an uninterpretable Case feature of the goal. Note that the uninterpretable Case feature of the goal DP_1 has already been checked and erased before it undergoes LF-copying. Hence, the goal cannot participate in Agree relation with any other probe. Consequently, the uninterpretable ϕ-features of the new probe F_2 in (40c) remain unchecked, causing the syntactic derivation to crash.

This Anti-Agreement Hypothesis correctly predicts that English, for example, does not allow AE in subject or object position, as illustrated in (41a, b).

(41) a.*John brought his wife to the party. He also brought *e* to the concert. (*e* = his wife)

b. * John thinks his son speaks English. Bill thinks that *e* speaks French. (*e* = his son)

Under Chomsky's (2000) system which links Case invariably to φ-feature agreement, English exhibits φ-agreement both under T and *v* heads, as evident from Case inflections in both subject and object positions (though they only manifest themselves in pronouns). The LF-Copy process then is blocked in both subject and object positions by φ-

agreement. To put it differently, LF-Copy can target the empty argument position in (40b) *as long as* there is no uninterpretable ϕ-agreement associated with Ts or *v*'s. Saito argues that this situation is precisely what happens in Japanese, which has been standardly assumed to lack any system of agreement (Kuroda 1988; Fukui 1986). Indeed, we have already seen in section 2.4 (see the examples in (28 –31)) that this language allows sloppy/quantificational interpretations for both empty subject and empty objects.

Şener and Takahashi (2010) show that the anti-agreement hypothesis is further confirmed by the range of permissible ellipsis patterns in Turkish; see also Takahashi (2013a, b, 2014) and Miyagawa (2013) for further extensions of the same hypothesis to Chinese, Malayalam and Portuguese which allow the same asymmetric distribution of argument ellipsis as Persian. Şener and Takahashi observe that Turkish allows null subjects and null objects, but only null objects allow sloppy/quantificational interpretations. This observation is shown in (42–45).

(42) a. Can [*pro* anne-si]-ni eleştir-di.
John his mother-3SG-ACC criticize-PAST
'John criticized his mother.'

b. Mete-yse *e* öv-dü. (strict/sloppy)
Mete-however praise-PAST
'*Lit*. Meter, however, praised *e*.' (Şener and Takahashi (2010: 87))

(43) a. Can [[*pro* oğl-u] İnglizce öğren-iyor diye] bil-iyor.
John his son-3SG English learn-PRES COMP know-PRES
'John knows that his son learns English.'

b. Filiz-se [*e* Fransızca öğren-iyor diye] bil-iyor. (strict/*sloppy)
Phylis-however French learn-PRES COMP know-PRES
'*Lit*. Phylis, however, knows that e learns French.'

(Şener and Takahashi (2010: 91))

(44) a. Can üç hırsız yakala-dı.
John three burglar catch-PAST
'John caught three burglars.'

b. Filiz-se *e* sorgula-dı. (E-type/quantificational)
Phylis-however interrogate-PAST
'*Lit*. Phylis, however, interrogated *e*.' (Şener and Takahashi (2010: 88))

(45) a. Üç öğretmen Can-i eleştir-dı.
three teacher John-ACC criticize-PAST
'Three tachers criticized John.'

b. *e* Filiz-i-yese öv-dü. (E-type/*quantificational)
Phylis-ACC-however praise-PAST
'*Lit. e* praised Phylis, however.' (Şener and Takahashi (2010: 91))

Şener and Takahashi propose that the subject-object asymmetry in (42–45) follows from the agreement-based theory because Turkish exhibits subject-verb agreement, not object-verb agreement, as shown in (46).

(46) a. (Ben) bu makale-yi yavaşyavaş oku-yacağ-**ım**.
(I) this article-ACC slowly read-FUT-**1SG**
'I will read this article slowly.'

b. (Biz) her hafta sinema-ya gid-er-**iz**.
(we) every week movie-DAT go-AOR-**1PL**
'We go to the movies every week.' (Şener and Takahashi (2010: 91))

Building on the empirical success of the anti-agreement theory established in other languages such as Japanese, Turkish, Chinese, and Malayalam, we propose that the Anti-Agreement hypothesis be extended to derive the subject-object asymmetry in Persian as well. As we saw in the beginning of section 2, Persian exhibits subject-verb agreement, but not object-verb agreement, in number and person. This point is illustrated in (47) (see also the examples in (1a, b)).

(47) bachche-hâ panjara-ro shekast-an.
child-PL window-RÂ break.PAST-**3PL**
'The children broke the window.'

It follows, therefore, that null objects, not null subjects, allow the sloppy reading because the LF-copy of the empty subject in Persian is blocked by the presence of the uninterpretable ϕ-features on Ts.

3.2. *New Predictions of the Anti-Agreement Theory of Persian Argument Ellipsis*

In this section, we explore one important prediction of the anti-agreement theory of argument ellipsis in Persian which can be tested due to its language-specific restriction imposed on ϕ-agreement. As we saw in the examples in (1a, b), in Persian, only person and number have morphological exponent in subject-verb agreement. It is well-known, however, that animate external arguments induce number agreement on the verb whereas plural inanimate subjects appear with singular agreement morphology (Karimi 2005; Sedighi 2005). In the examples in (48), the subjects are plural but the verb can be optionally marked as singular or plural. This optionality can be explained as follows. The plural agreement pattern obtains only when the subject enters into the ϕ-agreement relation with an appropriate functional head (either T or *v*); otherwise, the subject manifests the default third-person singular agreement.

(48) a. ketâb-â ru miz-**e/an**.
book-PL on table-3SG/3PL
'The books is/are on the table.'

b. deraxt-â sabz shod-**e/an**.
tree-PL green became-3SG/3PL
'The trees has/have become green. (Karimi (2005:97))

The Persian-specific property illustrated above is of critical importance for our current investigation of the argument ellipsis in Persian. If inanimate plural subjects have an option not to enter into an agreement relationship with a functional head (whether it may be T or *v*), the anti-agreement approach advocated here predicts that the syntactic position occupied by such subjects should be able to undergo argument ellipsis. We provide three sets of examples below to prove that this prediction is indeed borne out. Consider first (49).

(49) a. Tu in bâgh$_i$ [$_{DP}$ derxt-â-sh$_i$] hamishe xub roshd mi-kon-e
in this garden, tree-PL-its always well grow ASP-do-3SG
'In this garden, its trees grow well.'

b. Tu un bâgh, e_{DP} hamishe xub roshd ne-mi-kon-e. (sloppy)
in that garden, always well grow NEG-ASP-do-3SG
'In that garden, its (=that garden's) trees don't grow well.'

The examples in (49) are structurally parallel to the examples in (48) in that the logical subject of the sentence, *derxt-â-sh* 'its trees', represents an inanimate plural subject, which, by hypothesis, does not need to enter into the agreement relation with a functional head. Notably, the null subject in the example in (49b) allows the sloppy interpretation. This way, our current analysis correctly predicts the rather "exceptional" availability of argument ellipsis manifested with the null variant of the inanimate plural subject.

The examples in (50) support the same conclusion. In these examples, the logical subject of the sentence, *kâr*-â-*esh* 'her works', is a plural inanimate DP. As a result, the null subject in (50b) permits the sloppy interpretation, just as predicted by our theory.

(50) a. Barâ Kimea$_i$, hamishe [$_{DP}$ kâr-â-esh$_i$] natije mi-d-e.

for Kimea, always work-PL-her result ASP-give-3SG

'As for Kimea, her works always provide results.'

b. ammâ barâ Sepide, hamishe e_{DP} natije ne-mi-d-e. (sloppy)

but for Sepide always result NEG-ASP-give-3SG

'… but for Sepide, her (=Sepide's) works always provide no results.'

Finally, it has been a matter of considerable controversy whether Persian has the passive construction akin to English. Some linguists such as Palmer (1971), Soheil-Isfahani (1976), Hajatti (1977), and Dabir-Moghaddam (1985) argue that there is a structural passive construction of the English kind whereas other linguists such as Moyne (1974) suggest that there is no such construction in Modern Persian. Independently of this debate, we may note that, under the analysis of the complex predicate put forth by Folli et al. (2005) (see section 2), the "passive construction" like the ones in (51a, b) can be characterized as nothing but an ordinary complex predicate consisting of the adjectival particle use of the non-verbal predicate *dâde* 'given' followed by the light verb *shodan* 'to become'.

(51) a. be Parviz gol dâde shod. (non-specific subject)

to Parviz flower given became

'Flowers were given to Parviz.'

b. un gol-â be Parviz dâde shod. (specific subject)

that flower-RÂ to Parviz given became

'Those flowers were given to Parviz.' (Karimi (2005: 74))

In (51a), the underlying theme argument of the adjectival predicate follows the PP because it remains within the VP when it is non-specific. In (51b), on the other hand, the argument in question precedes the PP because it vacates the domain when it is specific. The agreement-based theory of argument ellipsis, thus, leads to predict that the inanimate plural subject of the passive construction, when elided, should allow argument ellipsis, as it does not need to enter into any ϕ-agreement relation with a functional probe. Again, this prediction is indeed verified. Suppose that two advanced graduate students of theoretical syntax are talking about the journal outlets for the latest papers written by Chomsky and Lasnik. Under this context, the null subject in the passive construction in (52b) readily allows the sloppy interpretation that Lasnik's articles will be published in Lingua.[4]

(52) a. Chomsky, [$_{DP}$ maghâl-â-ash] tu LI châp mi-sh-e
Chomsky article-PL-his in LI publication ASP-become-3SG
'As for Chomsky, his articles will be published in LI.'

b. (?) Lasnik, e_{DP} tu Lingua châp mi-sh-e.
Lasnik in Lingua publication ASP-become-3SG
'As for Lasnik, his (= Lasnik's) articles will be published in Lingua.'

[4] We would like to add that we found significant variation on the acceptability of the null subject example in (52b) among our native speaker consultants. Some speakers, including the second author of the present paper, do not accept the example whereas other speakers, such as Arsalan Kahnemuyipour (personal communication, June 2105) and Safieh Moghaddam (personal communication, June 2015), find it completely acceptable. We leave a detailed investigation of this interesting intra-linguistic variation for another occasion.

3.3. *Consequences of the Anti-Agreement Theory of Persian Ellipsis for the Nature of –râ*

Before concluding this paper, we would like to point out one of the significant theoretical consequences of the anti-agreement theory of Persian argument ellipsis for the Persian morpheme *–râ* whose grammatical identity we have been intentionally vague about thus far in this paper. This morpheme has attracted the attention of many linguists working on Persian, including Windfuhr (1979), Karimi (1989), Dabir-Moghaddam (1990), and Ghomeshi (1997). Karimi (1989) takes *–râ* as the accusative Case marker; Windfuhr (1979) and Ghomeshi (1997) suggests that this morpheme marks DP it is attached to as VP-level topics whereas Dabir-Moghaddam (1990) analyzes it as secondary topic marker. Our proposed analysis allows us to narrow down the analytical space to characterize this morpheme. We have included many examples in section 2 where the object argument, marked by *–râ*, may undergo argument ellipsis/LF-copy. The examples in (2a, b), repeated here as (53a, b), illustrate this pattern.

(53) a. Kimea **moalem-esh-ro** dust dâr-e.
Kimea teacher-her-RÂ friend have-3SG
'Kimea loves her teacher.'

b. Parviz ham *e* dust dâr-e. (?strict/sloppy)
Parviz also friend have-3SG
'*Lit*. Parviz also loves *e*.'

Our proposed analysis of the subject-object asymmetry in Persian ellipsis crucially builds on Chomsky's (2000) system which links checking/valuation of the Case feature of the goal DP with its ϕ-feature agreement with an appropriate functional probe (T/*v*).

The example in (53b) then means that the specific direct object in Persian does not have Case. It follows then that *–râ* cannot be the morphological manifestation of Accusative Case in Persian, contrary to what has been suggested by Karimi (1989). In the rest of this section, we outline one plausible alternative analysis of the morpheme which is consistent with this consequence of the anti-agreement approach pursued here.

We have seen in section 3.2 that *–râ* appears attached to specific direct objects, but not to non-specific direct objects. This contrast is evidenced from the examples in (54–55). In (54), the direct object is non-specific and remains within the VP/PredP domain, as evidenced by its position after the indirect object PP. In (55), by contrast, the direct object is specific and precedes the same PP, showing that it vacates the VP/PredP domain. It is well-known in the Persian literature that this marker never appears on subjects even when they are specific, as shown by the ungrammaticality of the example in (56).

(54) Kimea be man **ketâb** dâd.
Kimea to me book gave
'Kimea gave me a book.'

(55) Kimea **in ketâb-*(ro)** be man dâd.
Kimea this book-RÂ to me gave
'Kimea gave me this book.'

(56) Kimea-(*ro) ketâb xund.
Kimea-RÂ book read
'Intended: Kimea read a book.'

Karimi and Smith (2015) draws on a wide range of examples from Modern Classical Persian and Modern Persian to show that there is no structurally circumscribed common thread within the environments in which *–râ* may appear on specific DPs. For example, *–râ* may appear with specific DPs to express the oblique or possession, as shown in (57) and (58), respectively.

(57) amir-râ zakhm-i zad-am.
king-RÂ wound-IND hit-1SG
'As for the kind, I wounded him.'
(Classical Modern Persian: Karimi and Smith (2015:3))

(58) xalgh-râ xun be-rixt-and.
people-RÂ blood SUBJ-shed-3PL
'As for people, they shed their blood.'
(Classical Modern Persian: Karimi and Smith (2015:4))

One might suspect, of course, that *–râ* simply marks the topic DP, along the lines of the analysis put forth by Windfuhr (1979), Dabir-Moghaddam (1990), and Ghomeshi (1997), because the DP it attaches to has the topic flavor to it, and the topic DP, by definition, is always a specific DP. This characterization, however, is hard to sustain, in light of the example in (59), which shows that the specific object receives *–râ* even when it may be interpreted as a contrastively focused expression instead of the topic of the sentence.

(59) ketâ-e Parviz-ro man dâr-am. (contrastive focalization)
book-EZ Parviz-RÂ I have-3SG
'It is Parviz's book that I have.'

The topic-based analysis also misses the important observation that subject DPs can never be marked with *–râ* even when they are topicalized. Example (60) illustrates this observation; see Karimi (2005:ch4) for arguments that [Spec, TP] counts as a topic position hosting the background topic, which can be occupied by any element, regardless of its grammatical function.

(60) [$_{TP}$ Kimea-(*ro)$_i$ xoshbaxtâne[$_{vP}$ t_i ketâb-â-ro [$_{PredP}$ be ketâbxune pas dâde]]]
Kimea-RÂ luckily book-PL-RÂ to library return gave-3SG
'As for Kimea, luckily (she) has returned the books to the library.'
(adopted from Karimi (2005: 126), with a minor modification)

Karimi and Smith (2015) propose that the apparently disparate contexts for *–râ* to appear attached to specific DPs can receive a unified characterization if this morpheme is the default morphological case in the technical sense of Marantz (1991) (see also Bobabjik 2006) which is inserted as the elsewhere form in the post-syntactic morphological component. Marantz (1991) argues that Case realization is subject to the disjunctive hierarchy governed by the Elsewhere principle to the effect that a more specific form blocks the more general forms. The specific hierarchy he proposes is shown in (61).

(61) Case Realization Disjunctive Hierarchy

i. lexically governed case

ii. "dependent case" (accusative and ergative case)

iii. unmarked case (environment-sensitive)

iv. default case (Marantz (1991:24))

The Elsewhere Principle dictates that each type of case realization option is more specific than the option below it and takes preference. The lexically governed case represents the case assigned by specific verbs such as quirky case in Icelandic. The "dependent" case refers to cases whose realization hinges on the presence of some higher functional projection such as accusative Case for nominative-accusative languages or ergative Case for ergative-absolutive languages. The unmarked case option is exemplified by cases such as nominative Case and genitive Case that are assigned when a DP appears in a certain structural configuration such as within DPs or in [Spec, TP]. Finally, the default case is the case that is assigned only when no other case realization on the list is applicable. The morpheme *–râ* clearly instantiates the default case realization in Persian, for 1) it is not lexically governed by any particular set of verb classes, 2) its appearance does not depend on any higher case such as nominative Case, 3) it never appears in an uniquely identified syntactic configuration such as [Spec, TP] or within nominative projections. Note this analysis correctly derives the generalization that subjects in Persian can never be marked with *–râ* as an automatic architectural consequence of the Elsewhere Principle. Since specific DPs enter into ϕ-feature agreement with the functional head (T or *v*) and have their Case feature checked/evaluated as the unmarked nominative Case in Marantz's system, this case

realization blocks the use of the default case realization *–râ* lower on the hierarchy shown in (61).

4. Conclusions

This paper has brought a wide range of examples from Persian to bear on the competing theories of elliptic arguments developed on the basis of other languages such as Japanese. Using the sloppy/quantificational interpretations of null arguments as diagnostic tools for argument ellipsis, we have first shown that Persian exhibits the asymmetric distribution of argument ellipsis. We have then presented various arguments based on scrambling, binding, verb-identity effects and specificity-driven object placement against the VVPE-analysis (Huang 1987, 1991; Otani and Whitman 1991) of the subject-object asymmetry as well as for the indefinite *pro* analysis of sloppy interpretations which do not resort to ellipsis (Hoji 1998). We have proposed that the asymmetry in question is best explained by the anti-agreement hypothesis originally put forth by Saito (2007) and further extended and elaborated in recent years by Şener and Takahshi (2010), Takahashi (2013a, b, 2014) and Miyagawa (2013) for Chinese, Malayalam and Turkish. Our analysis predicts that the subject position, in principle, should accept argument ellipsis as long as it is not the position associated with ϕ-feature agreement, an option which is possible by virtue of the robust correlation between the specificity of the subject DP and its syntactic position. We have shown that this prediction is indeed borne out by the sloppy interpretation of the null subjects in the locative/experiencer construction and the passive construction, wherein the subject remains within the VP/PredP and does not participate in any agreement relation with a functional head such as T/*v*. One of the important theoretical consequences of our proposed analysis of Persian ellipsis is that *–râ* cannot be the instantiation of the

Accusative Case. We have suggested preliminary evidence drawing on data from Modern Classical Persian in favor of the new analysis of this marker as the default case realization in the post-syntactic morphological component in the sense of Marantz (1991).

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