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Nominalization in Persian: Evidence for low negation

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This paper uses a novel argument based on nominalization to argue for a low structural position for negation in Persian. This proposal is advanced in two stages. First, the paper investigates nominalization in Persian to identify the height at which nominal structure is introduced. Using evidence from the distribution of various kinds of syntactic objects in the context of nominalization, it will be argued that nominalization occurs at the level of VoiceP (or just above it) in Persian. Next, the paper uses the findings about nominalization to provide an argument for a low position of sentential negation in the language. It will be shown that negation in Persian in included in the nominalized structure and, hence, negation has to be low. This proposal is weighed against previous accounts in the literature, which have taken negation to be high in the language.

1. Introduction

The structural position of negation has been a topic of interest in the syntactic literature of the last several decades. Following Pollock (1989) (also Laka 1990; Zanuttini 1997; among others), generative syntacticians have taken negation to be a head Neg, projecting to NegP. In her seminal work, Laka (1990; 1994) offers a typology of NegP, according to which the position of NegP is parameterized with respect to TP (see also Horn & Kato 2000). In some languages, such as English, NegP is argued to be just below TP, while in others, such as Basque, it is argued to be just above TP. Previous literature on the syntax of Persian has taken the position of NegP to be above TP (see, for example, Taleghani 2008; Kwak 2010; Farudi 2013; also Karimi 2005). The current paper suggests a radical shift with respect to the structural position of negation in Persian and argues for a low position for this functional projection. The core argument presented in favor of the low position of negation in Persian comes from the analysis of a type of nominalization (knows as *masdar*) in the language.

In much of the recent syntactic literature, nominalization structures are treated as "mixed extended projections", structures that are verbal to a point but are nominal above that due to the introduction of a nominal functional category (see, for example, Hoekstra 1986; Roeper 1987; 2004; van Hout & Roeper 1998; Borsley & Kornfilt 2000; Alexiadou 2001; Borer 2003; Kornfilt & Whitman 2011a and all papers in that volume, among others). A key question in this type of approach is the height at which the nominal head/category is introduced, with the idea being that the higher the nominalizing affix attaches, the more verbal/clausal properties one will detect in the nominalization. For example, Kornfilt & Whitman (2011b) propose a typology based on three different structural height possibilities: vP/VoiceP (e.g. Dutch, Italian), TP (e.g. English poss/-ing gerunds, Turkish) and CP (e.g. Greek, Polish).[1]

This paper investigates nominalization in Persian within this framework. After considering the range of attested nominalization data in the language, it is proposed that the domain of nominalization in Persian is VoiceP (or just above it). Furthermore, by showing that sentential negation can be included in the domain of nominalization, it is argued that negation has to be low in Persian, contrary to what has often been claimed about negation in Persian as being above TP.

Persian is an SOV language with variation in the word order due to scrambling. Before we proceed with the nominalization data, it may be useful to consider a simple Persian transitive

[1] Alexiadou (2020) and Iordăchioaia (2020) make a typological distinction between n-based and D-based nominalizations, according to which only the former has a full nominal core. In this typology, Kornfilt & Whitman's TP and CP nominalizations are considered D-based while vP/VoiceP nominalizations are taken to be n-based. Crucially, in n-based nominalization, the n head can be introduced at different levels of vP/VoiceP across different structures or languages.

sentence involving some of the basic elements we will encounter throughout the paper. This example, reflecting the unmarked order of elements, is given in (1).[2]

(1) xoshbaxtaane Maryam-o man sari? naahaar na-xord-im
fortunately Maryam-and I fast lunch NEG-eat.PAST-1PL
'Fortunately, Maryam and I didn't eat lunch quickly.'

The remainder of the paper is structured as follows. Section 2 presents the core of the nominalization data and argues that the data can best be analyzed as VoiceP-nominalization. We see that negation can be included in the domain of nominalization, leading to the conclusion that negation is low. In section 3, we review the arguments provided in the literature for a high negation in Persian and show that these arguments do not hold up upon closer scrutiny. In doing so, we also discuss how the proposed low negation can be reconciled with the negative concord facts and high scope interpretations of negation in the language. Section 4 concludes the paper.

2. Nominalization: Persian data

There is a type of deverbal nominalization (known as *masdar*, also referred to as a long infinitive, Chodzko 1852) in Persian which is formed by attaching the nominalizing suffix *–an* to what is known as the past stem in traditional grammars.[3] No agreement suffixes are ever present on these nominalized verbs. Some examples are given in (2).

(2) a. xordan
'eating'
b. xundan
'reading'
c. didan
'seeing'

[2] The transcription used in this paper is phonetically approximative and simplified, using the Roman alphabet instead of phonetic symbols. This kind of transcription, with some variation, is used in many other works on Persian syntax (e.g. Karimi 1996; 2005; 2008). Readers should therefore not draw any conclusions about the phonetic properties of Persian on the basis of the simplified transcription adopted here. For example, the distinction between [a] and [aa] should not be seen as one of length (see Jones 2019) and is perhaps better represented as [æ] and [a], respectively.

[3] It has been argued in Kahnemuyipour & Megerdoomian (2002) (see also Kahnemuyipour 2004) that the suffix *-t* (sometimes appearing as *–d* or *–id*) in what is traditionally known as the past stem is not a true tense marker, realizing instead a low VoiceP-internal aspectual head. Akkuş (2019) takes the suffix to be the head of a VoiceP-internal functional projection he calls StemP in Iranian languages more generally. While the issue of the position of this suffix is somewhat orthogonal to the main focus of this paper, a low VoiceP-internal analysis of it is more compatible with the main proposal in this paper with respect to the position of the nominalizer *–an*.

A closer examination of the Persian data reveals that the nominalizer *–an* can attach to structures bigger than just the verb. In (3) we see examples involving a verb and a nonspecific object.[4]

(3) a. keyk xordan
cake eating
'eating cake'

b. ketaab xundan
book reading
'reading books'

A question might arise as to whether the examples in (3) truly involve nominalization of a verb phrase including the verb and the nonspecific object. As an alternative analysis, one might take them to involve the nominalization of the verb alone, which in turn takes the noun phrase as a dependent (i.e. a modifier or a complement). It is worth noting that, in Persian, nominal dependents follow the noun, with the noun marked by the Ezafe vowel. Ezafe is an unstressed vowel *-e* (*-ye* after vowels) which appears between a noun and its dependent (N-e Dep), and is repeated on subsequent dependents, if they are present, except the last one (N-e Dep1-e Dep2-e Dep3) (see Samiian 1983; Ghomeshi 1997; Kahnemuyipour 2014; among others). Some examples are given in (4).

(4) a. ketaab-e bozorg
book-EZ big
'big book'

b. shekaar-e gavazn
hunting-EZ deer
'deer hunting (hunting of deer)'

The pattern in (4) can be used to show that the examples in (3) are not instantiations of a nominalized verb taking the noun phrases as a dependent. In fact, such alternative examples can be constructed for the examples in (3), as shown in (5). Crucially, the examples in (5) show the

[4] It appears that only bare nonspecific objects are allowed inside nominalization. A nonspecific object marked by an indefinite article *ye* (e.g. *ye ketaab* a book) or a numeral (e.g. *do taa ketaab* two classif. books) cannot be used in the nominalization domain. If we take these non-bare nonspecific objects to be VoiceP-internal, (see, for example, Browning & Karimi 1994; Ghomeshi 1996; Karimi 1996; Megerdoomian 2002; Kahnemuyipour 2009; Ganjavi 2011; cf. Faghiri 2016), we will need reasons other than structural height for their exclusion from the nominalization domain. An anonymous reviewer correctly points out that numerals can be used in the nominalization domain in certain contexts, as shown in the example in (i), provided by myself. This may be related to the issue of the possible inclusion of specific objects in the nominalization domain in certain contexts (see footnote 8). I leave a closer examination of this issue for future research.

(i) chaar taa ketaab xundan ke in qadr poz na-daar-e
four CLASSIF book reading EMPHAT this much show-off NEG-have-3SG
'Reading just a few books doesn't justify so much show-off.' (Literal: Reading four books …)

reverse order of what we see in (3) and an Ezafe vowel is required. This shows that in examples such as (3) the nominalizer *–an* is attaching to the whole verb phrase, as opposed to the examples in (5) which involve attachment of the nominalizer to the verb alone.

(5) a. xordan-e keyk
eating-EZ cake
'eating of (the) cake'

b. xundan-e ketaab
reading-EZ book
'reading of (the) book/books'

In fact, each example in (3) can be treated as a noun, which in turn can take a plural suffix *–haa* or modified as such by taking the Ezafe marker followed by an adjective or possessor. We can also use a demonstrative to mark the left edge of the nominalized structure. The preceding demonstrative and the following plural marker or modifier provide us with a frame to identify the left and right edges of the nominalization domain. In other words, in the nominalization examples below, whatever appears between *in* 'this' and the plural or Ezafe marker can be treated as the nominalized portion. In (6), the demonstrative marks the left edge and the Ezafe marker (6a) or the plural marker (6b) the right edge of the nominalized structure.[5]

(6) a. in keyk xordan-e Ali
this cake eating-EZ Ali
'this cake eating of Ali'

b. in ketaab xundan-haa
this book reading-PL
'these acts of book reading'

In (3) and (6), the domain of nominalization includes the verb and a nonspecific object. Meanwhile, manner adverbs can also be included in this domain, as shown in (7a). (7b) shows the parallel structure with a modified deverbal noun (akin to (5)). It has been argued that manner adverbs mark the left edge of the VoiceP (see Holmberg 1986; Webelhuth 1992), indicating that the domain of nominalization is at least as large as VoiceP.

(7) a. in sari? ketaab xundan -e Ali
this fast book reading -EZ Ali
'this fast book-reading of Ali'

[5] The fact that the nominalized structure in Persian can be pluralized or modified by an adjective indicates that it has a full nominal core, or to use Alexiadou's (2020) and Iordăchioaia's (2020) terminology, it is an n-based (as opposed to D-based) nominalization. See also footnote 1.

b. xundan-e sariʔ-e ketaab tavassote Ali
reading-EZ fast-EZ book by Ali
'fast reading of books by Ali'

Further investigation of the nominalization data in Persian reveals that the domain of nominalization is likely not larger than the VoiceP, as elements known to be outside of VoiceP, such as higher adverbs, specific objects and subjects cannot be part of this domain. Let us start with higher adverbs. An example involving a high speaker-oriented adverb in given in (8), highlighting that nominalization cannot include such adverbs.[6]

(8) *in xoshbaxtaane ketaab xundan-e Ali
this fortunately book reading-EZ Ali
'*this fortunately book reading of Ali'

It has been noted in the literature that the same lexical element can be used as an adverb in different positions leading to different interpretations (e.g. high = subject-oriented, low = manner, see Jackendoff 1972; Cinque 1999). In Persian, where main sentence stress has been argued to mark the left edge of VoiceP, this difference in height is not manifested in a difference in surface word order, but rather marked by a prosodic difference (Kahnemuyipour 2009). In (9), we can see the two prosody-dependent interpretations.

(9) Ali sexaavatmandaane komak kard
Ali generously help did
'Ali helped generously.' (with main prominence on *sexaavatmandaane*) **manner reading**
'It was generous of Ali to help.' (with main prominence on *komak*) **subject-oriented reading**

Interestingly, only the manner reading is maintained under nominalization, as shown in (10), providing further support for the claim that the domain of nominalization is VoiceP, as VoiceP-external adverbs cannot be included in the structure.

(10) in sexaavatmandaane komak kardan-e Ali
this generously help doing-EZ Ali
'this helping generously of Ali' / 'this helping of Ali in a generous way'
'#this generous act of helping by Ali'

Persian specific (*ra*-marked) objects have been proposed to be in a higher syntactic position than non-specific objects, with the former in a VoiceP-external position and the latter in a VoiceP-internal one (see Browning & E. Karimi 1994; Ghomeshi 1996; S. Karimi 1996; Megerdoomian

[6] The use of different kinds of adverbs to determine the height of nominalization is an established diagnostic in the literature on nominalization (see Van Hout & Roeper 1998; Alexiadou 2001; among others).

2002; Kahnemuyipour 2009).[7] As expected, the specific *ra*-marked (colloquially, *-ro* after vowels and *-o* after consonants) object cannot be part of the domain of nominalization, as shown in (11) (see McGinnis 2014 for a similar argument for Georgian).[8]

(11) a. *in ketaab-o xundan-e Ali
this book-RA reading-EZ Ali
'*this reading the book of Ali'

b. *in keyk-o xordan-e Ali
this cake-RA eating-EZ Ali
'*this eating the cake of Ali'

Finally, it is also not possible to have a subject as part of the nominalization domain, as shown in (12).

(12) *in Ali bastani xordan-haa
this Ali ice-cream eating-PL
'these acts of Ali eating ice-cream'

One might argue that the ungrammaticality of (12) is not the result of the impossibility of including the subject in the nominalization domain, but rather the unavailability of nominative case for such subjects. Kornfilt & Whitman (2011b) argue, for example, that in Turkish TP-nominalization, the subject takes genitive case instead. In Persian, there is no genitive case marking per se and possession is expressed using the Ezafe construction. Meanwhile, even with the Ezafe construction, the subject/possessor has to be outside the nominalization domain (13a) and forcing it inside the domain leads to ungrammaticality (13b). This clearly establishes the fact that the nominalization domain excludes the subject.[9]

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[7] Similar proposals have been made for other languages: Mahajan (1990) for Hindi; Koopman & Sportiche (1991) and de Hoop (1996) for Dutch; Enç (1991) and Diesing (1992) for Turkish; among others.

[8] It appears that in generic contexts, *ra*-marked specific objects can be included in the nominalization domain, as shown in (i) below. One may argue that these objects are syntactically lower than the specific objects illustrated in (11) and as such included in the domain of nominalization. This inclusion in the domain of nominalization could either be achieved by positing that these objects are VoiceP-internal or that they are outside VoiceP but still lower than the specific objects in (11), with the nominalization domain slightly larger than VoiceP to include the lower *ra*-marked objects. A closer examination of these contexts is left for future research. I am grateful to Atefe Shahbazi (pc) for her feedback on this issue.

(i) maqaale-haa-ye Chomsky-ro fahmidan kaar-e harkasi nist
article-PL-EZ Chomsky-RA understanding work-EZ anybody isn't
'Understanding Chomsky's articles is not just anybody's job.'

[9] The exclusion of external arguments in nominalization domains has often been associated with the passive nature of nominalization (see Grimshaw 1990; Alexiadou 2001; Borer 2013; Bruening 2013), an observation confirmed by the behaviour of the Persian nominalization discussed in this paper.

(13) a. in [bastani xordan-haa]-ye Ali
this ice-cream eating-PL-EZ Ali
'these acts of ice-cream eating by Ali'

b. *in [bastani xordan-e Ali] – haa
this ice-cream eating- EZ Ali – PL

To summarize, we have seen above that the nominalization domain in Persian includes all VoiceP-internal elements such as the nonspecific object and manner adverbs and excludes elements that are known to be between VoiceP and TP such as the specific (RA-marked) object and subject-oriented adverbs as well as higher elements such as the subject and speaker-oriented adverbs which are taken to be in the CP domain. Taken together, one may conclude that the domain of nominalization in Persian is VoiceP.

Crucially, as we can see in (14), the sentential negation marker can also be part of the nominalization domain, providing evidence that negation is low.

(14) a. in ketaab na-xundan-haa
this book NEG-reading-PL
'these acts of not reading books'

b. in sari? qazaa na-xordan-e Ali
this fast food NEG-eating-EZ Ali
'this habit of Ali not eating food fast'
(Lit. this not fast food eating of Ali)

If we take the domain of nominalization to be VoiceP, we are led to the conclusion that negation is also VoiceP-internal. Meanwhile, another possibility cannot be ruled out. The above nominalization facts show that nominalization in Persian is at least as high as VoiceP and is below the projection that hosts the specific object. Let us take that projection to be AgrOP for the sake of convenience. While the above facts are often taken as evidence for VoiceP-nominalization, they are also compatible with a proposal which takes the locus of nominalization to be FP, where FP is a projection between VoiceP and AgrOP. Even though there is no explicit evidence for the existence of FP, nothing we have seen so far rules it out. Under this scenario, negation, which has to be inside nominalization, can be lower than FP but still higher than VoiceP.[10]

[10] The idea of positing FP-nominalization, as opposed to VoiceP-nominalization, where FP is a projection higher than VoiceP, is due to an anonymous reviewer. This option is meant to avoid a VoiceP-internal position for negation. We will see in section 3.4 that the lowest semantic scope position for negation is just above VoiceP. Therefore, with a VoiceP-internal position for negation, we need an additional mechanism such as Moscati's (2006; 2010) obligatory Neg-Raising to the edge of VoiceP to get the right scope. The anonymous reviewer was not in favor of such a mechanism and hence raised the FP-nominalization option. Meanwhile, placing NegP above VoiceP introduces complications to account for the surface position of negation in the language. See section 3.4 for more details.

Crucially, in both scenarios, negation is posited to be quite low in the structure, contrary to what has been claimed in much of the syntactic literature on Persian, which takes negation to be above TP.

In the following section, we will look at Persian negation more closely. We start with a discussion of how negation has been treated in the syntactic literature on Persian. In section 3.1, the two arguments in the literature for a high negation, i.e. a NegP which is above TP, are presented and in sections 3.2 and 3.3 we will see how these arguments are undermined under closer scrutiny. In section 3.4, we will look at how the low negation posited in this paper can be reconciled with scope facts in Persian. In doing so, we will return to the question of the structural position of negation and the two possibilities discussed above.

3. Negation in Persian

Sentential negation is a property of human language which, perhaps due to its universality, has interested linguists of all stripes. Typologists, for instance, have investigated the formal expression of negation across languages as well as its placement with respect to the other constituents in the sentence. While in some languages (e.g. English), negation is realized as a particle with some flexibility with respect to its positioning, in other languages (e.g. Persian), it is affixed to the verb. With respect to its placement, in many languages, negation appears after the verb (e.g. Igbo, colloquial French, Japanese, Tamil, Turkish), while in others it appears in a position before the verb (e.g. Arabic, English, Italian, Persian, Spanish) (see, for example, Dahl 1979; Payne 1985; Croft 1991; among others).

Negation has also interested generative syntacticians since its early years (see Klima 1964). In the late 80's and the 90's, there was renewed interest in sentential negation with a focus on its structural position. Pollock (1989) proposes Neg to be its own functional head projecting NegP (see also Laka 1990; Zanuttini 1997; among others). In her seminal work, Laka (1990; 1994) offers a typology of NegP, according to which its position is parameterized with respect to TP (see also Horn & Kato 2000). In some languages, such as English, NegP is argued to be just below TP, while in others, such as Basque, it is argued to be just above TP.

Turning to Persian, it should first be noted that the sentential negation marker has the exact same linear position as the negation used in the nominalized constructions discussed in section 2, i.e. it is prefixed to the verb. This is shown in (15), repeated from (1).[11]

[11] It is worth noting that it is impossible to add a second constituent negation before the VP, as one could in English: *I didn't not tell him* (though see discussion of negation in the modal context below). This further undermines the possibility that the negative marker used in the context of nominalization is constituent negation.

(15) xoshbaxtaane Maryam-o man sari? naahaar na-xord-im
fortunately Maryam-and I fast lunch NEG-eat.PAST-1PL
'Fortunately, Maryam and I didn't eat lunch quickly.'

Based on the inclusion of negation in the domain of nominalization, it was proposed in the previous section that negation is low in Persian. This is a radical shift from the established position in the syntactic literature on Persian, which has taken negation to be high in the clausal structure, specifically just above TP. We review these accounts in the remainder of this section. These proposals were mainly based on two arguments, namely the licensing of certain negative words in Persian and the placement of negation with respect to the auxiliary *baayad* 'must'. We revisit these arguments in turn and will see that they do not hold up upon closer scrutiny. We will explore how these facts may be reconciled with the low negation proposed in this paper. We end the section with a brief overview of the scope of negation in Persian and consider mechanisms which may allow a high scope of negation despite its low surface position. It is important to note at the outset that the goal of this section is not to introduce additional arguments for a low negation, but rather to undermine the arguments provided in the literature for a high negation, specifically one that is above TP.

3.1. NegP above TP

Previous literature on the syntax of Persian has taken the position of NegP to be above TP, suggesting various mechanisms to derive the low preverbal surface position of the negative marker, as discussed below (see, for example, Taleghani 2008; Kwak 2010; Farudi 2013; also Karimi 2005).

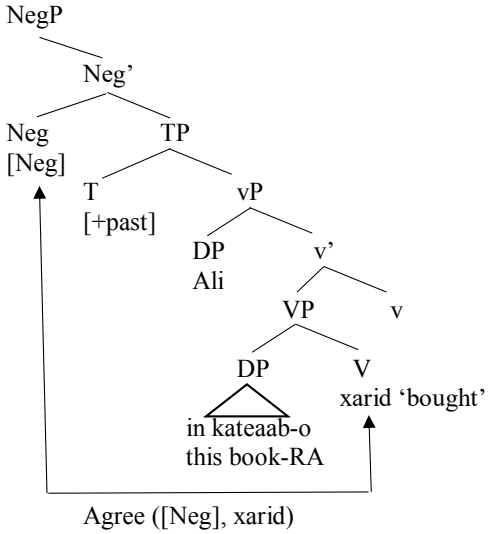
Taleghani (2008) (see also Kwak 2010; Farudi 2013) proposes a structure such as the one given in (17) for the example in (16) (with minor notational modifications).[12] Here is the mechanism she suggests for the realization of the Neg morphology on the verb. According to Taleghani, there is an interpretable [Neg] feature on the Neg head which checks an uninterpretable [Neg] feature on the verb via upward Agree, which is realized as the Neg prefix on the verb.[13]

(16) Ali in ketaab-o na-xarid
Ali this book-RA NEG-bought
'Ali didn't buy this book'

[12] It is worth noting that in Taleghani's structure in (17), both the subject and the specific object are vP-internal. As we will see in section 3.2, Taleghani uses licensing of NPIs in subject position in Persian to argue for Neg being above TP, to be able to c-command the subject in SpecTP. Therefore, she must take the subject to move from SpecvP to SpecTP, even though this is not shown in her tree structure.

[13] Kwak's (2010) proposal is different in minor details. She posits a [verb] feature on the Neg head and the verb which need to be checked against each other, leading to the morphological realization of negation on the verb. This minor modification does away with the need for upward Agree, used in Taleghani's analysis.

(17) Negation structure for Taleghani (2008)



Let us see how the structure in (17) fares with our generalization with respect to nominalization above. It was proposed in section 2 that the domain of nominalization in Persian is VoiceP (or just above VoiceP) and crucially that negation is inside this domain. As such, in order to reconcile the structure in (17) with this nominalization fact, we would have to take nominalization to apply counter-cyclically after the Agree relation between the high Neg and V is established and negation is realized on the verb. We would then need to introduce the nominalization head in the middle of the structure and somehow eliminate the structure above this head. This analysis would be in clear violation of the Extension Condition (Chomsky 1995 and subsequent authors), according to which merge operations can only extend the tree at the root. Put differently, the nominalization facts show that negation has to be introduced independently from the functional projections above VoiceP/vP, e.g. TP or NegP in Taleghani's analysis, as there does not seem to be a plausible story which would allow NegP to be introduced so high and yet be included in the nominalization domain. It is worth reviewing Taleghani's motivation for placing negation above TP in Persian.

3.2. Negative Concord in Persian

Taleghani's (2008) main argument for placing NegP above TP comes from the licensing of elements such as *hichkas* 'nobody', which she refers to as NPI. It is well-known that NPIs (e.g. English *any*) need to be licensed by a c-commanding negative constituent. In Persian, elements like *hichkas* can be licensed in both subject and object position in a negative clause, as in (18). Building on the assumptions that subjects surface in SpecTP in Persian and that elements like *hichkas* are NPIs, Taleghani concludes that Neg has to be higher than TP to be able to c-command the subject NPI (see also Farudi 2013).

(18) a. hichkas qazaa na-xord
nobody food NEG-ate
'Nobody ate food.'

b. Ali hichkas-o na-did
Ali nobody-RA NEG-saw
'Ali didn't see anybody.'

While the facts in (18) are undebatable, the use of these facts as evidence for a high Neg is highly questionable, as elements such as *hichkas* 'nobody' in Persian should not be confused with English-type NPIs. As we will see below, Persian is a Negative Concord (NC) language and these elements can best be referred to as neg-words[14] (Progovac 1994; Déprez 1997; Zanuttini 1997; Giannakidou 2000; 2006; Sells & Kim 2006; Han et al. 2007; Iordăchioaia 2010; Zeijlstra 2004; 2007; 2016; among others). Neg-words are expressions that can only appear in structures containing sentential negation (or similar expressions), crucially leading to a single negation interpretation (Giannakidou 2006). In Persian too, the use of neg-words leads to a single negation interpretation (see (18)).[15] Below, we explore the properties of Persian neg-words and contrast them with typical NPIs and negative quantifiers to establish the status of Persian as a Negative Concord language.

At first sight, neg-words may look like typical NPIs, i.e. semantically non-negative indefinites which need to be licensed by a c-commanding negation, as found in a language like English (e.g. *anyone*, *anything*, etc.) (Ladusaw 1992; 1994 and subsequent authors). Meanwhile, clear differences have been noted in the literature between neg-words and true NPIs (see e.g. Giannakidou 2006). We will see below that these diagnostics for neg-words can be extended to Persian. First, neg-words require sentential negation or similar expressions (18) unlike NPIs which can be licensed by a c-commanding negative quantifier, as in the English "*No one saw anyone*". In Persian, a c-commanding neg-word cannot license another neg-word, while both need to be licensed by sentential negation (19). In the literature on Negative Concord, languages like Persian are known as strict NC languages. In strict NC languages like Persian, neg-words, regardless of their structural position, have to be accompanied by the negative marker. In non-strict NC languages, such as Italian, a preverbal neg-word does not require a negative marker for licensing and can itself license a post-verbal neg-word (Zeijlstra 2016).

[14] The term commonly used in the literature for these elements is n-word. Meanwhile, due to the existence of the homonymous term in English used as a euphemism for a very offensive word, and following a suggestion by an anonymous reviewer, I have used neg-word throughout the paper instead.

[15] One may refer to Persian neg-words as *hich*-words, as they are compounds containing *hich* 'no' (e.g. *hich-kas* 'no one', *hich-chiz* 'nothing', *hich-jaa* 'nowhere', *hich-vaqt* 'never (lit. no time)).

(19) hichkas hichchi *(na)-xord
nobody nothing NEG-ate
'Nobody ate anything.'

Second, neg-words (unlike NPIs) cannot be licensed long distance, as can be seen for a Persian in (20) (cf. English translation). We can see in (20) that negation in the matrix clause cannot license a neg-word in the subordinate clause.[16]

(20) *Ali na-goft ke Hasan hich-chi xord
Ali NEG-said that Hasan nothing ate
'Ali didn't say that Hasan ate anything.'

Finally, and most notably, neg-words (unlike NPIs) can appear as negative fragment answers. This is true of Persian neg-words, as can be seen in (21) (cf. English *any* NPIs).

(21) A: ki injaa bud?
who here was
'Who was here?'
B: hichkas
'No one.'

The example in (21) and the English translations for the Persian neg-words may give the impression that they are equivalent to English negative quantifiers such as *nobody*, *nothing*, etc. While negative quantifiers and neg-words can both appear as fragment answers, they have a different distribution. Unlike neg-words, negative quantifiers can appear in contexts where there is no sentential negation (e.g. *Nobody came.*). Also, when negative quantifiers (as opposed to neg-words) appear in the context of sentential negation, they lead to a double negative reading. Therefore, in the relevant dialects, an English sentence such as "John didn't see nobody" means "John saw somebody."[17] By contrast, as we have seen above, Persian neg-words used in the context of negation lead to a single negative reading.

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[16] This generalization is only true of indicative subordinate clauses. Otherwise, negation in the matrix clause can license a Persian neg-word in a subjunctive subordinate clause (i). This is tangential to the point made in the text and simply shows that subjunctive clauses do not constitute a boundary for NC in Persian. Note that English-type NPIs are licensed by a matrix negation even in an indicative subordinate clause, hence confirming the contrast in the text.

(i) man ne-mi-xaa-m Ali hich-chi be-dun-e
I NEG-DUR-want-1SG Ali nothing SUBJ-know-3SG
"I don't want Ali to know anything."

[17] Of course, in several dialects of English, for example African American English, negative quantifiers used in the context of negation lead to a single negative reading (Labov 1972, among others). These dialects behave like Negative Concord languages in this respect.

We have so far established that Persian words such as *hich-kas* 'no one', *hich-chiz* 'nothing', etc. are instances of what is more generally known as neg-words, found in Negative Concord languages. We have also seen how neg-words are different from both true NPIs and negative quantifiers.

There is extensive literature on the licensing of neg-words in NC languages and how best they can be accounted for, e.g. the Clause-mate Condition (Sells & Kim 2006; Han et al 2007), Zeijlstra's (2004; 2007; 2016) agreement analysis, Giannakidou's (2000; 2006) universal quantifier analysis (see Giannakidou & Zeijlstra 2017 for an overview). A full analysis of the licensing of Persian neg-words is beyond the scope of this paper. Crucially, however, neg-words are distinct from true NPIs and as such do not need c-commanding negation for their licensing. Consequently, contrary to what has been suggested in previous literature on Persian (Taleghani 2008; Kwak 2010; Farudi 2013), their appearance in subject position (namely SpecTP) cannot be used as evidence for a high c-commanding negation above TP in Persian. This paves the way for positing a low negation, following the discussion in section 2.

Before turning to the second argument presented in the literature in favor of high negation in Persian, it is worth looking at another prediction the low sentential negation proposed in this paper makes with respect to the licensing of neg-words. If, as suggested, the low negation found in the context of nominalization is regular sentential negation, it should itself be able to license neg-words. As we can see in (22), Persian neg-words are licensed in the context of nominalization.[18] In this example, both the neg-word and the negative marker are inside the nominalized subject of the clause. In addition, there is no independent negation to take scope over the whole clause (i.e. the sentence is not a negative sentence). Meanwhile, the neg-word is still licensed by the negative marker inside the nominalized domain (within square brackets).

(22) [hich-chi na-xordan] baraaye moddat-e tulaani xeyli bad-e
nothing NEG-eating for time-EZ long very bad-is
'Eating nothing for a long time is very bad.'

Crucially, when nominalized, negation can only license a neg-word inside the nominalized domain. We can see this clearly in (23), which is set up in contrast to (22). In this example, the neg-word which is outside the nominalized domain cannot be licensed by the negation inside the nominalized domain (within square brackets).[19]

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[18] I am grateful to Julie Goncharov for suggesting to test for this.

[19] Parallel examples in (i) below ensure that the contrast in (22) and (23) is due to the licensing of the neg-word and has no independent basis. Also, the sentence in (23) is not outright ungrammatical, but is rather marginal, according to the four native speakers I consulted. Crucially, all four speakers noted a clear contrast between the sentence in (23) and the one in (22).

(i) [aab na-xordan] / [na-xordan-e aab] baraaye moddat-e tulaani xeyli bad-e
water NEG-eating NEG-eating-EZ water for time-EZ long very bad-is
'Not drinking water for a long time is very bad.'

(23) ??[na-xordan]-e hich-chi baraaye moddat-e tulaani xeyli bad-e
NEG-eating-EZ nothing for time-EZ long very bad-is
'Eating nothing for a long time is very bad.'

We have shown so far that the licensing of neg-words cannot be used as an argument for high negation in Persian. Farudi (2013) provides another argument for the high position of negation in Persian based on the morphological realization of negation in the context of the modal auxiliary *baayad* 'must'. We turn to this argument next.

3.3. Sentential negation in the context of baayad 'must'

Farudi (2013) develops an argument in favor of a high position of negation based on its position relative to the modal auxiliary *baayad* 'must'. She first points out that this modal auxiliary is high in the clause, either in T (as Taleghani 2008 suggests), or even higher, in ModP above TP, which is the position she adopts. When negated, the negative marker is prefixed to *baayad*, as shown in (24), which Farudi takes as evidence for negation being at least above TP. Put differently, if the modal auxiliary is in T (or a higher functional head) and Neg is prefixed to it, then, according to Farudi, NegP has to be higher than TP.

(24) a. Ali baayad be-raqs-e
Ali must SUBJ-dance-3SG
'Ali must dance.'

b. Ali na-baayad be-raqs-e
Ali NEG-must SUBJ-dance-3SG
'Ali mustn't dance.'

In what follows, I provide arguments in favor of a bi-clausal analysis of the examples in (24). Under this view, these examples are impersonal constructions (what Karimi 2005 calls subjectless constructions) in which *baayad* is a subjectless impersonal verb which takes a subjunctive clause as its complement. We will see below that the position of the subject in (24) can be the result of scrambling. Taleghani's (2008) reasoning (adopted by Farudi 2013) for taking examples like (24) to be mono-clausal involves the licensing of neg-words (what she calls NPIs). She notes that *nabaayad* (neg.-must) can license a neg-word and as such it has to be in the same clause as the neg-word, leading to a mono-clausal structure. This is shown in (25) (Taleghani 2008, p. 89: (78b)).[20]

[20] There seems to be a tension between treating Persian neg-words as NPIs, as Taleghani (2008) does, and the expectation that there be no clausal boundary between the negation (on *baayad*) and the neg-word. It is well known that NPIs are licensed by negation across a clausal boundary, as shown for English in the following sentence: *Bill doesn't think that I should eat anything* (see also footnote 16). Taleghani does not address this issue.

(25) na-baayad hichkas be in mehmuni be-r-e
NEG-must nobody to this party SUBJ-go-3SG
'Nobody should go to this party.'

The licensing of neg-words in examples such as (25), however, cannot be taken as evidence for a mono-clausal structure for the *baayad* construction, as negation can license neg-words across a subjunctive clause boundary more generally in Persian. In (26), we see examples of clearly bi-clausal structures, with two independent subjects and two agreeing verb, and yet negation in the matrix clause licenses a neg-word in the embedded clause (see also footnote 16). In (26a), the neg-word is in the subject position and in (26b) in the object position.

(26) a. man ne-mi-xaa-m hichkas be in mehmuni be-r-e
I NEG-DUR-want-1SG nobody to this party SUBJ-go-3SG
'I don't want anybody to go to this party.'

b. man ne-mi-xaa-m Kamnoosh hichkas-o davat (be)-kon-e
I NEG-DUR-want-1SG Kamnoosh nobody-RA invite SUBJ-do-3SG
'I don't want Kamnoosh to invite anybody.'

With the sole argument in favor of a mono-clausal analysis of these constructions out of the way, we can now turn to the arguments in the favor of a bi-clausal structure. The first argument in favor of a bi-clausal analysis of *baayad* constructions comes from the distribution of negation. Crucially, the negative marker on *baayad* is independent from the negation on the embedded verb. As we can see in (27), the modal *baayad* and the verb can be negated independently. In particular, the appearance of two negative markers in (27b) is surprising in a mono-clausal analysis of the *baayad* construction, but it follows naturally from a bi-clausal analysis.[21]

(27) a. Ali baayad na-raqs-e
Ali must NEG-dance-3SG
'Ali must not dance.'

b. Ali na-baayad na-raqs-e
Ali NEG-must NEG-dance-3SG
'Ali mustn't not dance.'

In order to better understand the distribution of negation in the context of the modal auxiliary *baayad*, we need to have a quick look at some other auxiliaries in Persian. Several other modal

[21] In Persian, the subjunctive marker and the negation are in complementary distribution. This is why in (27) and other similar examples below, in the context of negation, no overt marking of subjunctive appears. Here, the negative marker can be analyzed as realizing both negation and subjunctive mode, or the subjunctive can be taken to have a null allomorph used in the context of negation.

auxiliaries in Persian are independent verbs showing agreement (see Ghomeshi 2001; Bejar & Kahnemuyipour 2014). These verbs have largely been treated as control verbs in Persian (see Ghomeshi 2001; Karimi 2008; Taleghani 2008).[22] Let us take *tavaanestan* 'can' as an example. As we can see in (28a), this modal auxiliary shows agreement with the subject, while the verb in the embedded subjunctive clause receives its own independent agreement marking. There is also a thematic relation between the subject and the modal as well as between the subject and the embedded verb, which can be viewed as mediated by PRO. Importantly, we can see in (28b–d) that negation can appear on either agreeing modal/verb or both. I take the independent agreement marking and the possible independent negation in the sentences in (28) to show that we are dealing with bi-clausal constructions, with the embedded clause having a somewhat defective structure, reflected in the subjunctive mood.[23]

(28) a. man mi-tun-am keyk be-xor-am
I DUR-can-1SG cake SUBJ-eat-1SG
'I can eat cake.'

b. man ne-mi-tun-am keyk be-xor-am
I NEG-DUR-can-1SG cake SUBJ-eat-1SG
'I can't eat cake.'

c. man mi-tun-am keyk na-xor-am
I DUR-can-1SG cake NEG-eat-1SG
'I cannot eat cake.'

d. man ne-mi-tun-am keyk na-xor-am
I NEG-can-1SG cake NEG-eat-1SG
'I can't not eat cake.'

Turning to *baayad* 'must', we can see similarities and differences with *tavaanestan* 'can'. Both of these verbs take a subjunctive clausal complement and they both allow independent negative markings on the modal and on the embedded verb. Meanwhile, there is a clear

[22] The overall consensus in the Persian literature is that Persian lacks raising constructions (see Hashemipour 1989; Ghomeshi 2001; Karimi 2005; Taleghani 2008; but see Darzi 1996). A full investigation of control and raising in Persian is outside the scope of this paper. In particular, a distinction appears to be necessary between obligatory and non-obligatory control, according to which *tavaanestan* 'can' would be an example of obligatory control while 'want' would be an example of non-obligatory control (Karimi 2005; Bejar & Kahnemuyipour, to appear). The above discussion of other modal auxiliaries is relevant only insofar as it helps with our understanding of the *baayad* construction.

[23] In addition to the subjunctive mood, the embedded clause cannot have an independent subject. Nor can it have an independent temporal adverb. These all point to the defective nature of the embedded clause. Meanwhile, the exact structure of these clauses involving modal auxiliaries and in particular how defective the embedded clause is is a question I abstract away from here as it is tangential to the issue at hand (see Ghomeshi 2001; Bejar and Kahnemuyipour 2014, to appear).

difference between the two in that while *tavaanestan* shows agreement with the subject (e.g. 1sg in (28)), *baayad* does not, or more accurately *baayad* carries a fixed 3rd person singular agreement *–ad*. Therefore, *baayad* is best analyzed as an impersonal form, which takes a subjunctive clausal complement and can in turn carry its own negative marker (akin to the French *Il faut que …/Il ne faut pas que …*).[24]

Additional support for the bi-clausal analysis of *baayad* constructions comes from the optional presence of a complementizer, as shown in (29). Moreover, (29) also shows that the subject can appear after *baayad*, which is the expected position of the subject if *baayad* is taken to involve an impersonal construction taking a clausal complement. Under this view, examples like (24) and (27) with a clause-initial subject *Ali* can be seen as the result of scrambling (or topicalization) (see also Karimi 2005). *Ali* can be topicalized in (29) as well, not shown.[25]

(29) baayad (ke) Ali baa Maryam be-raqs-e
must that Ali with Maryam SUBJ-dance-3SG
'Ali must dance with Maryam.'

The key point to take from the discussion of the modal *baayaad* is that the negation marker that appears on it cannot be taken as sentential negation *in a mono-clausal structure* and as such cannot be used as an argument for a high position of negation in Persian, i.e. NegP above TP. Recall that Farudi (2013) (following Taleghani 2008) treated the *baayad* construction as a mono-clausal structure with the modal auxiliary *baayad* in T (or even a higher functional head such as Mod), consequently taking the preceding negative marker to be even higher than that. We have shown that what we are dealing with in *baayad* constructions is a bi-clausal structure. Therefore, the negative marker appearing on *baayad* belongs to the matrix clause and is independent from the negation that may appear on the verb in the embedded clause. As such, the negative marker prefixed to *baayad* should be treated like the negative marker that is prefixed to any other verb.

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[24] This analysis is similar to the one offered by Karimi (2005), who calls it a subjectless construction. Taleghani (2008) acknowledges the fact that *baayad* is not a control predicate. She further takes the subject to start off in the embedded clause and raise to the matrix clause. She calls this movement pseudo-raising as there is no case/agreement relation between the subject and the matrix verb (i.e. *baayad*). Like Karimi, I take this movement to be an instance of scrambling, as discussed below. This impersonal analysis of *baayad* can be extended to *laazem ast/nist* 'it is/is not necessary' (but see Darzi 1996). Both these constructions lack a matrix subject as Persian is a null subject language and does not have an expletive pronoun.

[25] The use of the complementizer *ke* is dispreferred for some younger speakers. The use of *ke* more generally improves with longer sentences. The loss of *ke* could indicate a reanalysis of *baayad* as an adverbial element with modal content, with *nabaayad* as its negated form. Crucially, even if we were to treat *nabaayad* as a negative adverbial element, the negation on it cannot be treated as the regular sentential negation of the clause, making it incompatible with Farudi's and Taleghani's proposals.

The only difference is that the verb *baayad* is involved in an impersonal construction which obligatorily takes a subjunctive clausal complement.[26,27]

In sections 3.2 and 3.3, we reviewed two arguments in favor of a high position of negation (namely a position above TP) and showed that these arguments are undermined under closer scrutiny. In the context of the strong evidence from nominalization presented in section 2 in favor of low negation and in the absence of any strong arguments for high negation in Persian, we can conclude that negation occupies a low position in Persian. This raises a question about the exact position of negation and the scope of negation in a language like Persian with a syntactically low negative marker. We turn to this issue next.

3.4. Scope of Negation in Persian

In has been argued in this paper that negation is syntactically low in Persian. This raises a question with respect to its scope. Are languages with low negation (e.g. Persian) different from languages with high negation (e.g. English) with respect to their scope properties? Or does negation in Persian scope high semantically despite its low syntactic position? The basic interpretation of a negative sentence in Persian is no different from any other language. Therefore, semantically, the expectation is that it should take scope over the whole event, and as such, it should be higher than VoiceP. But how does the scope of negation interact with its syntactic position, in particular in the context of the proposal that it is included in the domain of nominalization and, therefore, quite low? Can it ever scope higher than that, and if so, how high can it scope? In this subsection, we briefly investigate the scope of negation in Persian and present a theoretical framework to account for it. This is by no means intended to be a comprehensive study of scope of negation in Persian and its interaction with other scope-taking elements. The purpose here is simply to have

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[26] An anonymous reviewer points to another auxiliary in Persian, namely *daashtan* 'to have', which is used in the periphrastic progressive construction. While this auxiliary, just like *tavaanestan* 'can', shows agreement, doubling the agreement on the verb, strikingly, it cannot be negated. Ghomeshi (2001) takes this auxiliary to be in T. If the auxiliary is in T, as Ghomeshi suggests, the impossibility of negating it provides yet another argument against high negation. It is important to note, however, that in the context of this auxiliary, even a low negation is not fully acceptable, though much preferred to the high one. An example of this construction is given in (i).

(i) man (*na-)daar-am (?ne-)mi-g-am
I NEG-have-1SG NEG-DUR-say-1SG
'I am (not) saying.'

[27] As noted by an anonymous reviewer, there are other auxiliaries such as *xaastan* 'will/want' and *astan/budan* 'to be' which are used in different verbal paradigms in Persian. Suffice it to say that with these auxiliaries there is only a single expression of agreement and only one negative marker is allowed. This points to a mono-clausal structure for these constructions and an overall picture aligned with the analysis presented in this section. I leave a fuller analysis of the structure of these auxiliaries for future research. In light of the low negation proposed in this paper, a reanalysis of Persian clausal structure is in order.

a better understanding of the syntax and semantics of negation in the context of the proposal with respect to its low position.

We can investigate the scope of negation in Persian by assessing it in the context of different types of adverbs. Three types of adverbs are examined here: manner adverbs which are argued to be very low in the structure, speaker-oriented adverbs which are taken to be very high in the structure, and subject-oriented adverbs which are higher than manner adverbs but lower than speaker-oriented ones (Jackendoff 1972; Cinque 1999; among others). Starting with the nominalized context, the focus of this paper, recall from section 2 that only manner adverbs are allowed in the context of nominalization. When negated, negation takes scope over the whole VoiceP including the manner adverb, as shown in (30).[28]

(30) Neg > Manner Adverb
sari? bastani na-xordan-e Ali
fast ice-cream NEG-eating-EZ Ali
'Ali's not eating ice-cream fast'

In the context of a full finite clause, negation maintains scope over the manner adverb, as shown in (31). This is the same scope observed in the English counterpart of the example: "it is not the case that Ali ate ice-cream fast".

(31) Neg > Manner Adverb
Ali sari? bastani na-xord
Ali fast food NEG-ate
'Ali didn't eat ice-cream fast.'

With speaker-oriented adverbs, only a narrow scope of negation is available, as shown in (32). The example in (32) can only mean "it was fortunate that Ali didn't eat ice-cream" and not "it was unfortunate that Ali ate ice-cream".

(32) Speaker-oriented Adverb > Neg
xoshbaxtaane Ali bastani na-xord
fortunately Ali ice-cream NEG-ate
'Fortunately, Ali didn't eat ice-cream.'

With subject-oriented adverbs, both wide and narrow scope of negation are possible. Under the narrow scope of negation, the sentence in (33a) can be paraphrased as "it was wise of Ali not

[28] In order to understand the intended interpretations, it may be helpful to think of the different entailments of the narrow and wide scope readings of negation. In the examples in (30)–(33), when Neg has wide scope, it entails that the ice-cream was eaten. When Neg has narrow scope, it entails that the ice-cream was not eaten. I am grateful to an anonymous reviewer for bringing this entailment difference to my attention.

to eat ice-cream". Under the wide scope of negation, it can be paraphrased as "it wasn't wise of Ali to eat ice-cream".[29] While the narrow scope of negation is much more salient in (33a), the example in (33b) can accommodate the wide scope of negation more easily. With the wide scope of negation, the sentence can be paraphrased as "it wasn't the case that Ali ate the ice-cream reluctantly", while with the narrow scope, it means "Ali was reluctant not to eat the ice-cream".

(33) Subject-oriented Adverb > Neg; Neg > Subject-oriented Adverb

a. Ali aaqelaane bastani na-xord
Ali wisely ice-cream NEG-ate
'Ali wisely didn't eat ice-cream.'

b. Ali baa-ekraah bastani na-xord
Ali reluctantly ice-cream NEG-ate
'Ali reluctantly didn't eat ice-cream.'

Before we address the question of how we can reconcile these scope facts with the low position of negation proposed in section 2, it is worth reviewing what our options are with respect to the syntax of negation in Persian. In section 2, it was shown that negation is included in the domain of nominalization in Persian. In addition, Persian nominalization has the hallmarks of VoiceP-nominalization, as, for instance, the domain of nominalization includes non-specific objects and manner adverbs, but excludes specific objects and higher adverbs. If we take the domain of nominalization to be VoiceP, then negation would be VoiceP-internal. In fact, we can take the syntactic position of negation to be where it surfaces, between the verb and the non-specific object. Under this view, negation would be placed in the head of a projection NegP, which would be situated between VP and the projection that hosts the non-specific object (e.g. Travis's 1991 AspP; see Kahnemuyipour 2009).

Meanwhile, as discussed in section 2, the nominalization facts alone do not force a VoiceP-internal positon for negation. These facts simply show that the height of nominalization is higher than the manner adverb (i.e. edge of VoiceP) and lower than the projection that hosts the specific object, for example AgrOP. Let us call this projection FP and its corresponding nominalization, FP-nominalization. Under this scenario, NegP can be taken to be above VoiceP and below FP (see footnote 10). The disadvantage of this analysis would be that we would need to introduce a new mechanism to account for the surface position of the negative marker between the non-specific

[29] I am abstracting away from the manner adverb reading of (33): *Ali didn't eat ice-cream wisely (e.g. he might have eaten too much)*. Negation has wide scope over this manner reading as discussed before. It is not easy to distinguish this manner reading, which can only scope under negation, from the subject-oriented reading, when it scopes under negation. As discussed in the text, the latter can be translated as: *it wasn't wise of Ali to eat the ice-cream (perhaps at all as he is diabetic.)*. The manner reading, however, may be translated as: *Ali did not eat the ice-cream in a wise manner (perhaps he ate too much)*. These different readings of the adverbial seem to be associated with their own special prosody, an issue which requires further investigation.

object and the verb. One possibility would be to resort to an analysis similar to that of Taleghani (2008) with a [Neg] feature residing in V and Neg and an upward Agree relation between them. Hereafter, I refer to the two options for the base-generated position of negation as the VoiceP-internal and VoiceP-external analyses, respectively.[30]

With this overview of the possible syntactic positions of negation, we can turn to the scope facts discussed above. In order to account for these scope facts, I follow Moscati (2006; 2010) who argues that the PF position of negation should be separated from its scope, as negation might appear very low but scope high. Moscati offers many arguments such as the scope of negation relative to modals to substantiate his claim (see also Puskás 2018). Moscati proposes an operation akin to Quantifier Raising (QR), which he calls Neg-Raising (NR). According to Moscati, NR comes in two flavours (in line with similar suggestions for QR by Fox 2000): Obligatory NR and Optional NR. Obligatory NR raises negation to the edge of vP (our VoiceP), whenever sentential negation is inserted in a position where it fails to take scope over the whole predicate. In other words, the lowest possible scope of negation is the edge of vP (or VoiceP). Meanwhile, Optional NR can covertly raise negation to the CP domain[31] and takes place whenever there are other scope taking elements in the clause, leading to negation taking scope over such elements.[32,33]

We can now assess how Moscati's proposal fares with the scope facts in (30)–(33) in the context of the VoiceP-internal and VoiceP-external analyses of negation presented above. First, under the VoiceP-internal analysis of negation, the Obligatory NR leads to the wide scope of negation over all VoiceP-internal elements, including the manner adverb (30)–(31). This position, which is lower than the position of subject-oriented or speaker-oriented adverbs, also accounts for the narrow scope of negation with respect to these adverbs (32)–(33). This is shown schematically in (34).

(34) $[_{CP} \ldots Adv_{Spkr} \ldots [_{CP} \ldots [_{TP} \ldots Adv_{Sbj} \ldots [\ldots [_{VoiceP} Adv_{Man} \ldots NEG \ldots]]]]]$

Obligatory NR

[30] An anonymous reviewer offers an alternative analysis for a VoiceP-external position of negation, with NegP placed above VoiceP. Under this view, in order to get the right order of elements, V moves to Voice and then to Neg, followed by remnant movement of VoiceP to SpecNegP. This option is complicated by the fact that there are some post-verbal elements in Persian (not shown in this paper) which would first need to vacate VoiceP to get all the various elements in the right order. As this option involves many unmotivated movements, it is not pursued in this paper.

[31] In an articulated CP structure, a la Rizzi (1997), Moscati (2006; 2010) takes the position Optional NR moves negation to to be SpecForceP.

[32] Covert movement can be understood as an Agree relation between negation and a head in the CP domain. This reinterpretation of NR has no bearing on the main proposals of this paper.

[33] The idea that there is a link between a low negation and higher positions in the CP (i.e. a negative chain) predates Moscati's proposal (see, for example, Laka 1990; Progovac 1994). Similar mechanisms have been adopted in more recent work as well (see, for example, De Clercq, Haegeman & Lohndal 2012; Authier 2013; De Clercq 2013).

Under the VoiceP-external analysis of negation, there is no need for the Obligatory NR operation shown in (34) to account for the wide scope of negation over manner adverbs, as the base position of negation is taken to be above VoiceP to begin with. In other words, while the VoiceP-external analysis of negation leads to a more complicated syntax to account for the preverbal surface position of negation, it appears to have a simpler semantics as it does away with the Obligatory NR operation.[34]

Regardless of which analysis of the syntax of negation we adopt, the VoiceP-internal or the VoiceP-external one, we still need the additional Optional NR operation to account for the wide scope reading of negation in (33). We saw that with a subject-oriented adverb, both narrow and wide scopes of negation are possible. The narrow scope reading is achieved when negation is interpreted in its low position, i.e. where it is base-generated under the VoiceP-external analysis or when only the Obligatory NR is involved (34) under the VoiceP-internal analysis. The Optional NR gives us the wide scope reading of negation over subject-oriented adverbs, as shown schematically in (35).

(35) $[_{CP} \ldots Adv_{Spkr} \ldots [_{CP} \ldots [_{TP} \ldots Adv_{Sbj} \ldots [\ldots [_{VoiceP} Adv_{Man} \ldots]]]]]$

Optional NR

Crucially, the unavailability of a wide scope reading of negation over speaker-oriented adverbs shown in (32) indicates that the landing position for the optional NR is lower than speaker-oriented adverbs, while it is higher than subject-oriented ones (35).[35]

We started this subsection with a question about the scope of negation in a language like Persian in which negation, according to the proposal made in this paper, is low. I have shown that the lowest scope position for negation in Persian is the edge of VoiceP. Meanwhile, negation can also take wide scope over higher elements. I have shown how these scope facts can be reconciled with the low position of negation in Persian using the notion of Neg-Raising a la Moscati (2006; 2010).[36]

4. Conclusion

This paper started out with an investigation of a type of nominalization, known as *masdar*, in Persian. Using evidence from various kinds of syntactic objects used in the context of nominalization, it was argued that the domain of nominalization in Persian has the hallmarks of

[34] In fact, the main reason the VoiceP-external analysis of negation in Persian was suggested by an anonymous reviewer was to dispense with Moscati's NR.

[35] I am abstracting away from the specific landing positions for the NR operations.

[36] An anonymous reviewer asks about the scope interactions between QR of the neg-words and the NR discussed in this section. A preliminary investigation using impressionistic judgments of the author has revealed many subtle judgments which would require properly devised experiments before any conclusions can be drawn. I leave such an investigation for future research.

what is known as VoiceP-nominalization. It was further shown that sentential negation can be included in the domain of nominalization. If we take the domain of nominalization to be VoiceP, that leads to the conclusion that negation is VoiceP-internal. Meanwhile, the nominalization facts leave room for the possibility that nominalization is between the projection that houses the specific object and VoiceP. Under this view, negation would still be low, but it could be taken to be just above VoiceP. Crucially, under both possible scenarios, negation is low, either inside or just outside VoiceP.

The proposal that sentential negation is low in Persian stands in contrast to other works in the syntactic literature which posit a TP-external position for Persian negation. It was shown that, upon closer scrutiny, arguments in favor of a high position for negation in Persian are undermined. While the syntactic position of sentential negation was argued to be low in Persian, it was shown that negation still has wide scope over the whole predicate and can even scope over certain adverbials. A framework was introduced which could accommodate these basic scope facts. The investigation of the scopal properties of negation was by no means exhaustive. Much more work is needed to verify the range of possibilities with respect to the scope of negation in Persian.

From a cross-linguistic perspective, one can see the low position of sentential negation in Persian, as opposed to many other languages in which sentential negation is in the CP domain, in light of proposals which draw a parallelism between the CP and VoiceP/vP domains. Accordingly, many functional projections typically attributed to be high, e.g. in the CP domain, in some languages have later been posited to be low, e.g. in the VoiceP domain, in other languages. Perhaps one of the first proposals of this kind is that of a VoiceP-internal AspP (Travis 1991; 2010) in parallel to TP in CP, which is nowadays a standard assumption. In another domain, while wh- and focus-related projections are often attributed to the CP domains (Rizzi 1997 and subsequent authors), many have posited such projections in the VoiceP/vP domain (see, for example, Horvath 1986; Brody 1990; Kahnemuyipour 2001; Kahnemuyipour & Kornfilt 2011; Su 2012; among others). It has been suggested that Topics can be hosted VoiceP-internally as well (see Cheng & Downing 2009). In this light, negation can be seen as yet another example of an element which may be in the CP domain in some languages (e.g. English) and in the VoiceP domain in others (e.g. Persian).

Finally, the reanalysis of the position of sentential negation in Persian as being low has broader consequences for the phrase structure of Persian and may be seen as a first step to revisit various analyses of Persian clausal structure.

Abbreviations

CLASSIF	Classifier
DUR	Durative
EMPHAT	Emphatic
EZ	Ezafe
NC	Negative Concord
NEG	Negation
NPI	Negative Polarity Item
NR	Neg-Raising
PL	Plural
QR	Quantifier Raising
RA	Persian –RA (Differential Object Marker)
SG	Singular
SUBJ	Subjunctive

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Competing interests

The author has no competing interests to declare.

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