

**Two Different Realizations of the EPP: An Approach to Agreement Asymmetries in Modern Standard Arabic**

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## Abstract

A crucial question in the study of syntax is how the concept of Agree operates. The centrality of the Agree relation in the field has shifted, starting from Chomsky (1995) who argued that Agree was not its own relation but rather resulted from the independent Spec-Head relation to Chomsky (2001) when Agree became its own central mechanism, one which derives structure building. In this senior essay, I will focus on the behavior of Agree in Modern Standard Arabic (MSA), which exhibits well-studied agreement asymmetries that bear on this issue. My analysis of the MSA facts intends to derive a complex set of facts from this basic, core mechanism in the theory and provides a satisfying understanding of the former in a way that supports the latter.

SVO sentences in MSA exhibit full agreement in number, gender and person between the subject and the verb. However, in VSO ordered sentences, subjects may only agree in gender and person. Previous analyses fall into essentially three categories: (i) the number feature was simply never generated on the verb in VSO ordered sentences (as described in Benmamoun (2000)); (ii) the number feature was generated but was later deleted (as argued in Ackema and Neeleman (2003); or (iii) finally the feature was generated but can be realized in different ways (as argued by Benmamoun (2000) and Soltan (2007)). However, previous explanations either have theoretical problems, fail to fully explain the Arabic facts or fall into the trap of being too language specific.

Thus, in this senior essay, I offer an analysis of Modern Standard Arabic that doesn't rely on language specific mechanisms, but rather follows from Wurmbrand and Haddad's approach in their 2014 paper. They suggest that the agreement asymmetries introduced above can be derived by the existence of two different ways of realizing the EPP property of the T head. Specifically, one version which results in full agreement and a second version which results in only number agreement. I then extend this approach to explain further data in MSA that Wurmbrand and Haddad (2014) do not discuss, specifically the case of pronoun subjects and the puzzle of first conjunct agreement.

## 1. Overview of Agreement Asymmetries in MSA

Arabic agreement depends on word order in an interesting way. In sentences that are in subject-verb-object (SVO) order, the subject and the verb agree fully in person, number and gender. However, when the sentence is in verb-subject-object (VSO) order (grammatical in MSA) the subject and verb only agree in gender and person but not number.

Interestingly this alternation in MSA mirrors an alternation present in standard dialects of American English as well. Although American English does not mark gender agreement, there are examples when number agreement is not necessary. This possibility is shown in sentences (1a) and (1b).

- (1) a. There's a lot of people here.  
b. There are a lot of people here.

However, as in MSA, this possibility for lack of agreement is only found in these VSO ordered sentences. In SVO ordered sentences, as in (1c) and (1d), it is ungrammatical for the subject and the verb to not agree in number.

- c. \*A lot of people's here.  
d. A lot of people are here.

Asymmetries in MSA are much more widespread and common. As such, they have resulted in numerous explanations across Arabic syntacticians. Theories generally fall into one of three categories of explanations. Namely either the number feature was simply never generated on the verb in VSO ordered sentences, the number feature was generated there but was deleted at a later stage, or finally the feature was generated but can be realized in different ways in VSO as opposed to SVO ordered sentences. However, many of the explanations that fall into one of these three categories have theoretical issues, fail to fully explain the Arabic facts or fall into the trap of being too language specific.

Thus, in this paper I propose an analysis of Modern Standard Arabic that will connect it more directly to agreement asymmetries cross-linguistically and standard mechanisms to derive cross-linguistic variation. I place MSA in a general explanatory theory of agreement, specifically following from Wurmbrand and Haddad's (2014) approach, but then extend it to two important factors they do not cover in their discussion, namely pronoun subjects and first conjunct agreement.

Wurmbrand and Haddad (2014) argue that the unvalued phi-features on T trigger movement, because Merge (whether external or internal) is triggered by the need to value features. They argue that this movement, which they refer to as the EPP can be realized two ways:

1.  $V \rightarrow T$  movement
2. Subject DP  $\rightarrow$  SpecTP movement

This movement is triggered by an unvalued phi-feature on T, which needs to get valued under a c-command relation. Little *v* is also unvalued, however only for gender features. When *v'* merges with the subject, *v* takes on the features of the subject. In SVO ordered sentences, T agrees with the subject directly. In VSO ordered sentences, T agrees with the subject indirectly by Agreeing with the moved little *v* which in turns Agrees with the subject. This agreement between little *v* and T is a relationship between two uninterpretable features. The critical difference between the two agreement patterns is that little *v* only has gender features while T has full phi features. Thus Wurmbrand and Haddad (2014) can be seen as a type of the third category of past approaches discussed above, in that the number feature is realized differently depending on the version of the EPP activated. The analysis will be explained more explicitly below.

I extend this approach to discuss pronouns and first conjunct agreement, two issues not discussed in Wurmbrand and Haddad's (2014) paper. Specifically, in both VSO and SVO sentences with pronoun subjects, full agreement is observed. I explain this by hypothesizing that the full phi features of *pro* are realized on *v*, which is always present when pronoun subjects are present, allowing for full agreement in VSO sentences. In MSA when there is a conjunct phrase, the verb only agrees with the first item of the conjunct. I explain this by extending both Wurmbrand and Haddad (2014) and Johannessen (1993) to explain the behavior of what Johannessen terms the conjunct phrase.

The approach proposed by this paper as compared to past approaches fits into the general progression in theories of Agree. The centrality of the Agree relation in syntax shifted, starting from Chomsky (1995) which argued that Agree was not its own relation but rather resulted from the independent Spec-Head relation to Chomsky (2001) when Agree became its own central mechanism, one which derives structure building. There have been a variety of new theories on Agree, including Reverse Agree, which is what my approach is based on. My analysis intends to derive a complex set of facts from this basic,

core mechanism in the theory and provides a satisfying understanding of the former in a way that supports the latter.

## 2. Details of Agreement Asymmetries in MSA

Modern Standard Arabic (MSA) verbs agree with the subject in number and gender. Examples of these differences can be seen in sentences (2a) through (d).

- (2) a. Al-talibaat- u      ?akal-**na**      al-khubz-a  
the-student-FP.NOM eat.past-3**FP** the-bread-ACC  
'The students ate the bread'
- b. Al-talibat- u      ?akal-**at**      al-khubz-a  
the-student.FS.NOM eat.past-3**FS** the-bread- ACC  
'The student ate the bread'
- c. Al-talib-uun      ?akal-**uu**      al-khubz-a  
the-student- MP.NOM eat.past-3**MP** the-bread- ACC  
'The students ate the bread'
- d. Al-talib- u      ?akal-**a**      al-khubz-a  
the-student.MS.NOM eat.past-3**MS** the-bread- ACC  
'The student ate the bread'

Bemamoun (2000: 121)

As is demonstrated in the above examples (2a-2d), in SVO sentences, verbal affixes vary with subjects' phi features, specifically in number and gender features.

In all of the examples above, the sentence follows basic SVO order. However, VSO order in MSA is also possible. In this order subject and verb only agree in gender. This distinction is shown in following sentences (3a)-(3d).

- (3) a.  $\text{ʔakal-} \mathbf{at}$      $\text{al-talibaat-}$   $u$              $\text{al-khubz-} \mathbf{a}$   
 eat.past-**3FS** the-student-FP.NOM the-bread- ACC  
 ‘The students ate the bread’
- b.  $\text{ʔakal-} \mathbf{at}$      $\text{al-talibat-}$   $u$              $\text{al-khubz-} \mathbf{a}$   
 eat.past-**3FS** the-student.FS.NOM the-bread- ACC  
 ‘The student ate the bread’
- c.  $\text{ʔakal-} \mathbf{a}$          $\text{al-talib-uun}$              $\text{al-khubz-} \mathbf{a}$   
 eat.past-**3MS** the-student- MP.NOM the-bread- ACC  
 ‘The students ate the bread’
- d.  $\text{ʔakal-} \mathbf{a}$          $\text{al-talib-u}$              $\text{al-khubz-} \mathbf{a}$   
 eat.past-**3MS** the-student- MS.NOM the-bread- ACC  
 ‘The student ate the bread’

Bemamoun (2000: 121)

Thus although the number changes from sentence (3a) to (3b), and from sentence (3c) to (3d), the morphological markings on the verb remain the same: they both take the singular form from the SVO paradigm. However, there is a clear morphological distinction between sentences (3a) and (3b) versus (3c) and (3d), tracking the gender of the subject. In this way, sentences in the VSO order agree in gender but not number.

### 3. Overview of Proposal

The approach argued for in this thesis is based primarily on the work done by Wurmbrand and Haddad (2014). Their basic hypothesis is then extended to explain various phenomena in MSA that Wurmbrand and Haddad (2014) do not address. This section will give a brief overview of their approach and the extensions proposed by this thesis, which will be further explained in section 5.

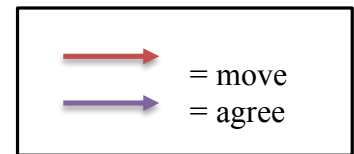
Wurmbrand and Haddad (2014) claim that MSA has what they refer to as an EPP property on T (although is not a true EPP in the traditional sense) which can be realized two ways:

1.  $V \rightarrow T$  movement
2. Subject DP  $\rightarrow$  SpecTP movement

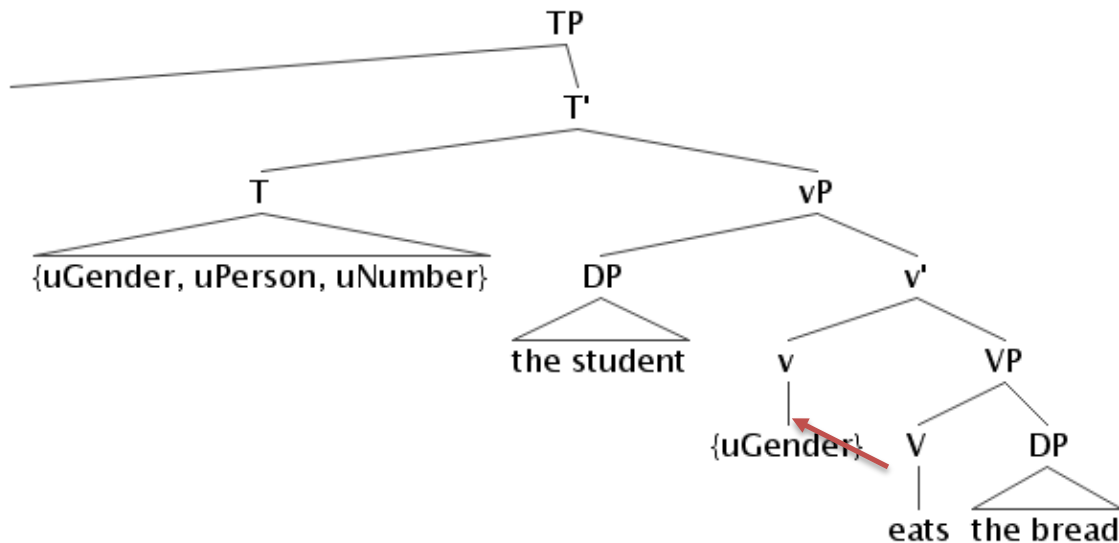
An unvalued phi-feature on T triggers the above movement. This unvalued phi-feature needs to get valued under a c-command relation. This is suggested by the theory of Reverse



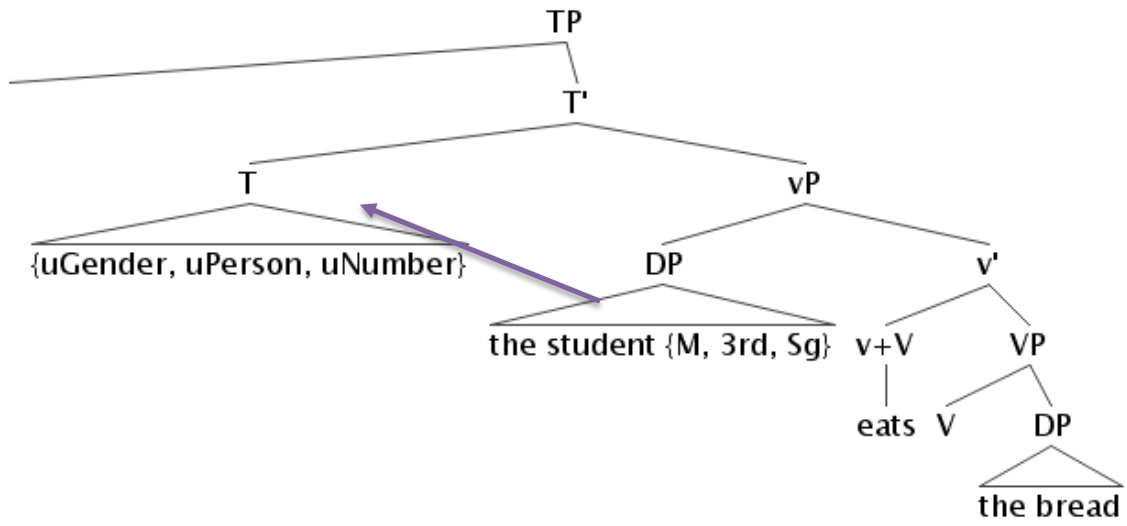
Agree, which is discussed in more in depth in section 5, but essentially stipulates that the valued feature c-command the unvalued feature in order for agreement to occur. Little v also has unvalued phi-features. When v' merges with the subject, v takes on the features of the subject. In both SVO and VSO ordered sentences, T agrees with the subject either directly, as in the case of full agreement in SVO ordered sentences, or indirectly by Agreeing with the moved little v which in turns Agrees with the subject. The critical difference between the two agreement patterns is that little v is only unvalued for gender features while T is unvalued for full phi features. The basic derivations of the two word orders are shown below. (4a-c are a SVO ordered sentence, 4d-f are a VSO ordered sentence). Full descriptions of these derivations can be found in sections 5.4 and 5.5.



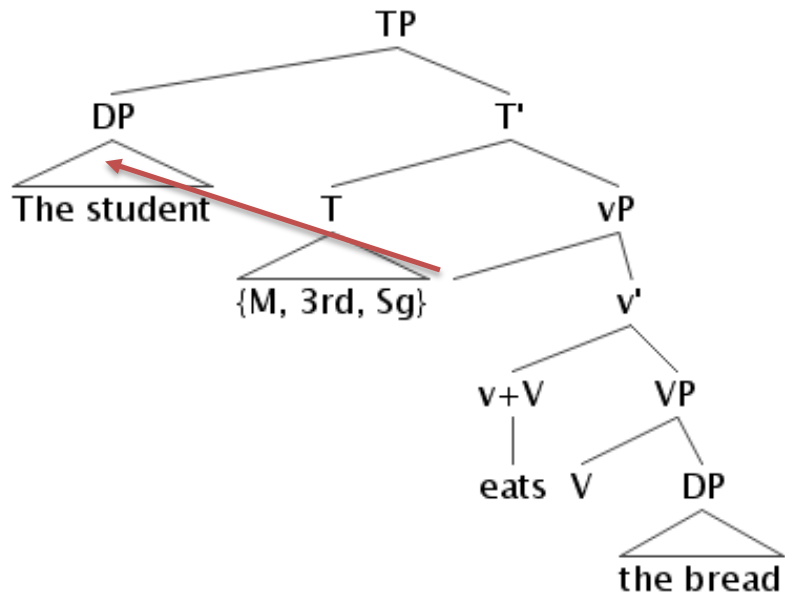
(4) a.



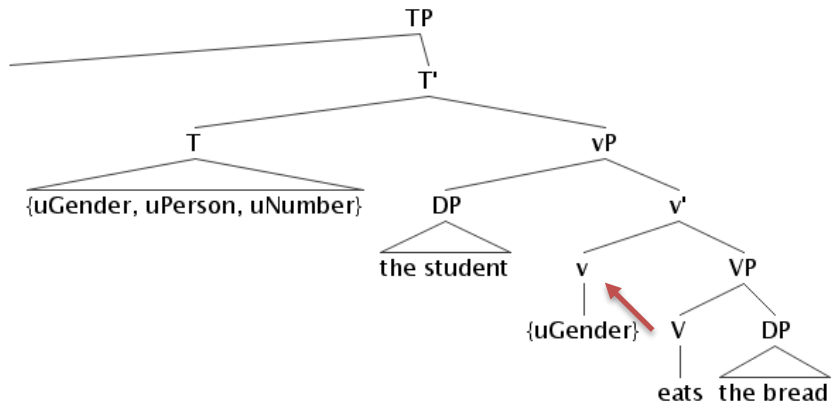
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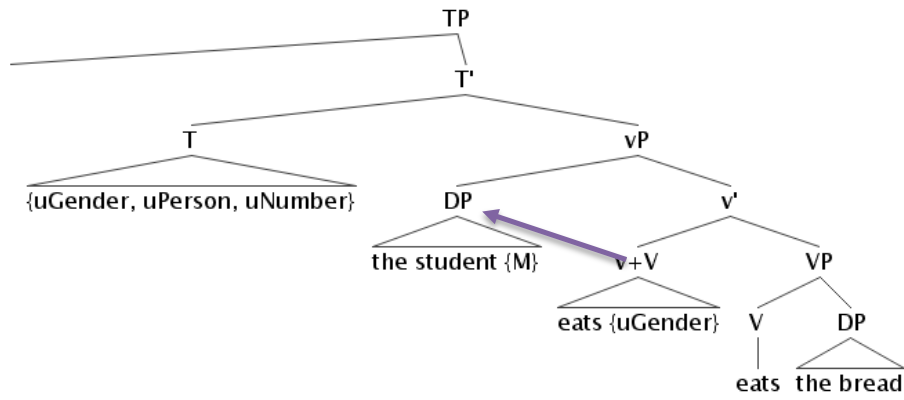
c.



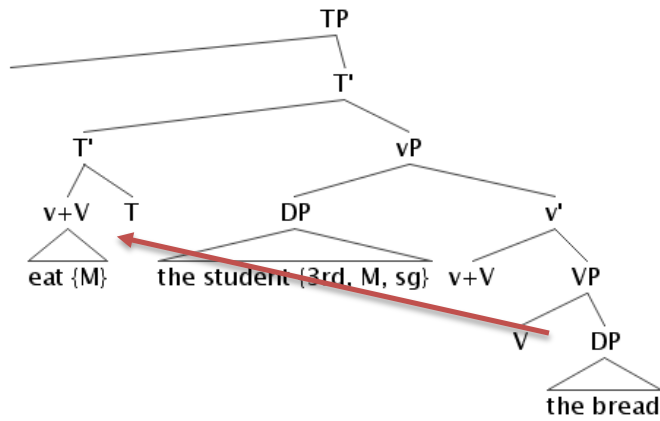
d.



e.



f.



In SVO sentences, the unvalued phi-features on T trigger movement, satisfied by the subject movement which occurs, resulting in the order of the sentence. T is then valued by the subject DP such that T inherits all phi values from the subject.

In VSO sentences, the unvalued gender feature of little *v* is valued when the subject merges with *v*'. The movement of V+*v* brings *v* into a Reverse Agree configuration with T. Thus, T's gender feature is value by little *v* and has indirect agreement with the subject. The remaining phi features can't be valued by little *v*, so they receive the default values of third person and singular.

I extend this approach to discuss pronouns and first conjunct agreement, two issues not discussed in Wurmbrand and Haddad's (2014) paper. Specifically, in both VSO and SVO sentences with pronoun subjects, full agreement is observed. I explain this by hypothesizing that the full phi features of *pro* are realized on *v*, which is always present when pronoun subjects are present, allowing for full agreement in VSO sentences. In MSA, when there is a conjunct phrase, the verb only agrees with the first item of the conjunct. I explain this by extending Wurmbrand and Haddad's (2014) notion of two different ways of realizing the movement sparked by T's unvalued phi features and Johannessen's (1996) notion of unification in the conjunct phrase. Both of these issues are addressed, and the approach is extended to explain them, in section 5.

#### 4. Theoretical Explanations

The facts discussed above have resulted in numerous possible explanations across Arabic syntacticians. These theories generally fall into one of three categories of explanations. This subdivision of past approaches was first suggested in Benmamoun (2000). Those categories are: either the number feature was simply never generated on the verb in VSO ordered sentences, the number feature was generated there but was deleted at a later stage, or finally the feature was generated but can be realized in different ways in VSO as opposed to SVO ordered sentences. As introduced above, Wurmbrand and Haddad (2014) generally fits into this final category of approaches.

##### 4.1. Never generated on the verb

###### 4.1.1 Weak/ Strong Dichotomy

The first category of explanation is exemplified in the so-called "weak/strong dichotomy" theory. This theory, although not argued for in a specific paper, was discussed

at length in Benmamoun (2000), and is a logical outgrowth of the minimalist program as outlined in Chomsky (1993). The argument in this theory is essentially that there are two different affixes: one for person and gender and a separate affix for person, gender and number. The choice of affix depends on word order. Affix one (person and gender) is weak while affix two (person, gender and number) is strong. Minimalist theory suggests that strong features have to be checked before spell out, while weak features can be checked in LF, and thus the movement is not visible. Benmamoun (2000) in his discussion of this approach argues that it can't hold because it has no morphological content, specifically, since the agreement affixes in VSO and SVO orders are morphologically the same, there's no reason to predict two different affixation strategies. Thus the form of the verb (whether imperfective as in (5a) and (5b) or perfective as in (5c) and (5d) in VSO sentences (5a) and (5c), is the same as in SVO sentences (5b) and (5d).

- (5) a. Ta-ʔkulu t-taalibaat-u  
       3FS-eat the-students-FP.NOM  
       'The students are eating.'
- b. T-taalibat-u       ta-ʔkulu  
       the-student-FS.NOM 3FS-eat  
       'The student is eating.'
- c. ʔakal-at       t-taalibaat-u  
       eat.past-3FS the-students-FP.NOM  
       'The students ate.'
- d. T-taalibat-u       ʔakal-at  
       the-student-FS.NOM eat.past-3FS  
       'The student ate.'

Benmamoun (2000: 123)

However, the original theory of weak/strong features doesn't stipulate the necessity of morphological difference between the two kinds of features. One common example of a weak-strong dichotomy is the distinction between auxiliary and lexical 'have' in English. Lexical 'have' is seen in example (6a) and auxiliary 'have' is seen in example (6b).

- (6) a. You have milk, don't you?  
       b. You have bought milk, haven't you?

Auxiliary ‘have,’ as in (6b), is thought to be the strong version while lexical ‘have,’ as seen in (6b), is thought to be the weak version. This is demonstrated by the contrast in the construction of tag questions as seen in both examples. However, although there is this weak-strong dichotomy, the verbs are morphologically indistinguishable in both sentences.

More problematic is the fact that if there are two different affixation strategies, this doesn’t explain why, when there is a pronoun instead of a lexical subject in VSO order full agreement is necessary. This is a problem generally for this category of explanation.

#### 4.1.2 Agreement with Expletive

Another example of this category of explanation is the approach known as agreement with expletive. This approach, similar to the approach discussed above, is not argued for in a specific paper but is discussed at length as a possibility in Benmamoun (2000). The approach posits that there is a null expletive argument in specTP when the subject is postverbal (yielding VSO order). The expletive is specified only for gender and person, which it acquires through a chain relation with the lexical subject. A chain relation is essentially a linked pattern of agreement based on consecutive word order. In SVO order, however, there is an argument trace chain, in which case the verb must carry all the agreement features, particularly number. An argument trace chain is similar to a chain relation, except the argument has moved out of the consecutive word order resulting in agreement with its trace. In dialects like Moroccan Arabic (MA), full agreement is required regardless of word order. Thus the expletive in MA would need to be specified for all features. However, if there is indeed an expletive, it would appear to be the same in MA and MSA. Specifically, a possible expletive would be the third person singular masculine null pronominal which appears the same in both languages as is seen in examples (7a), MSA, and (7b), MA. Since this expletive appears the same in both language, Benmamoun (2000) argues, it is not possible that this same expletive could behave totally differently in the two languages if it appears the same.

- (7) a. **ya-zhibu** ?an **ya-fiduru-uu**  
**3M-must** that **3M-come-MP**  
 ‘They must come’

b. ta-y-dher belli kan-u hna  
 ASP-3M-seems that be.past.3P here  
 ‘It seems that they were here’

(Benmamoun 2000; 125)

## 4.2. Generated but Deleted

### 4.2.1 Context-sensitive Spell-out

The second category of explanation is exemplified by Ackema and Neeleman’s 2003 paper. They generally claim that agreement asymmetries (as well as cliticization and null subjects) all involve processes of weakening within prosodic domains, or that within certain prosodic domains certain features (like number agreement in MSA) can be deleted. They assume that Arabic is a right alignment language, with XP as the boundary of a prosodic phrase. Or, as they explain, alignment in head-initial languages follows the rule: “align the right edge of an XP with the right edge of a phi” (Ackema and Neeleman 2012: 77). A phi refers to the valued features on a noun, such as gender or number, which can then be marked on a verb or an adjective that agrees with it. Thus when the verb precedes the subject, they are in the same prosodic phrase. However, when the subject precedes the verb they are not in the same prosodic phrase. This they demonstrate with the following rule (where brackets indicate XP boundaries):

$$(8) \quad \{[V \text{ Pl...}] [D \text{ Pl...}]\} \rightarrow \{[V...][D \text{ Pl...}]\}$$

Thus, when a plural verb (V Pl) and a plural subject (D Pl) are in the same phonological phrase (notated by the {} brackets), context sensitive agreement weakening can occur.

Benmamoun and Lorimor (2006) respond to this paper arguing that this approach doesn’t properly explain the facts of Arabic specifically because the application of their rule isn’t recursive. They suggest that a lack of recursiveness is problematic when explaining sentence in MSA that are of the order Aux V S. Examples of this type are found in example sentences (9a)- (9c).

(9) a. kaana ya-lʔabu l-ʔawlaad-u  
 was.3MS 3M-play the-children-NOM  
 ‘The children were playing.’

b. \*kaanu ya-laʔbu l-ʔawlaad-u  
 was.3MP 3M-PLAY the-children-NOM

- c. \*kaana ya-lʔabuun l-ʔawlaad-u  
 was-3MS 3M-play.MP the-children-NOM  
 Benmamoun and Lorimor (2006: 14)

Neither verb carries full number agreement, and it is ungrammatical to have full number agreement on one verb but not the other. If it were not possible for Ackema and Neeleman’s prosodic rule to be recursive, this would be problematic since the auxiliary verb is not adjacent to the subject, and thus cannot be in the same prosodic unit with it.

Ackema and Neeleman argue that this is a misinterpretation of their assumption following Selkirk’s (1986) Strict Layer Hypothesis. Although this hypothesis suggests that prosodic structure is not recursive, “the import of the hypothesis that prosodic structure is nonrecursive is that in a well-formed prosodic representation, a category of a particular level cannot dominate a category of an identical or higher level” (Ackema and Neeleman 2012, 78). This does not imply that PF rules can’t occur recursively, only that a prosodic phrase cannot dominate another prosodic phrase.

A more serious criticism of this approach, and many other approaches discussed so far, is that it does not adequately explain the agreement patterns found in raising constructions in MSA such as sentence (10a) below. In (10a) we see the order verb, subject, main verb. In this case the first verb only agrees in gender but not number with the subject while the final verb agrees fully in gender and number with the verb. This is shown in sentence (10a) below. However, in sentences as in (10b) below, when the subject precedes both the main and non-main verb, both verbs agree fully with the subject. In some cases, both verbs precede the subject, in which case the first verb agrees fully and the second verb only partially, as in (10c) below.

- (10) a. badaʔat al-nisaʔ-<sub>u</sub> jutilibna bi-masahatin musawijatin  
 started.3FS the-women-NOM demand.3FP in-spaces equal  
 lii-l-riaali fii al-masaid-i.  
 to-the-men in the-mosques-GEN  
 ‘Women started to ask for spaces equal to the men’s spaces in the mosques’  
 (Wurmbrand and Haddad, 2014; 8)
- b. al-nisaʔ-<sub>u</sub> tafiqa jaʔtaqna ʔabida-hunna  
 the-women-NOM started.3FP free.3FP slaves-their  
 ‘The women started to free their slaves.’  
 (Wurmbrand and Haddad, 2014; 9)



c. bada?na    tarkudu al-talibat-u                    fii al-mal?ab  
 started.3FP run. 3FS the-students.FP-NOM in the-playground  
 ‘The female students started to run in the playground.’  
 (Wurmbrand and Haddad, 2014; 20)

The approach presented by Ackema and Neeleman (2003) do not adequately explain the above facts. Specifically, it would be difficult to see how prosodic phrase based weakening they argue for would allow sentences like (10c). Even if their approach can apply recursively, how would it be able to skip the verb closest to the subject, as it does in (10c) and apply weakening to the first verb. Wurmbrand and Haddad (2014) however does account for these facts, and thus is the approach adopted and extended in this thesis.

### 4.3. Realized differently

#### 4.3.1 Prosodic Unit Redundancy

The third category of explanation is exemplified in Benmamoun (2000)’s approach. Benmamoun (2000) assumes that the primary agree relation is the Spec-Head relation. However, if the verb is higher than the subject (through movement) it is possible for the number feature to drop. Essentially, since number is inherent and clearly marked on the lexical subject, but person isn’t inherently marked on the lexical subject, it is number that is marked on the noun while person remains on the verb. His proposal is that this is possible since the verb and postverbal subject form a prosodic unit, which then makes the lexical subject an exponent of the number feature on the verb. Thus the number affix is redundant and can be dropped because the number feature is realized already on the verb. Although this approach may seem similar to the second category of approaches, it is important to note that Benmamoun (2000) is not suggesting that the feature is deleted (as in the two approaches discussed above) but rather that it is realized on the post verbal subject. Thus the feature has been there the whole time, and was never deleted at some later stage.

Benmamoun (2000) uses many arguments to argue for this conclusion. First, he predicts that when the subject is located between the auxiliary and the main verb the auxiliary verb will not display a number morpheme since the subject combines with the auxiliary verb. The main verb, however, will because it does not form a prosodic unit with the subject. This is shown in example (11a).

- (11) a. Kaanat t-taalibaat-u ya-ʔkul-na  
 be.past.3FS the-students-FP.NOM 3-eat-FP  
 ‘The students were eating.’

Benmamoun (2000: 122).

Thus, according to his prediction, since the subject ‘students’ intervenes between the auxiliary, ‘be,’ and the main verb ‘eat,’ the main verb doesn’t display a number morpheme. Second, he predicts that in the context of relativization, when the postverbal subject is empty, the verb will display the number affix since the absence of number is reliant on merger with a postverbal lexical subject. The prediction is confirmed, as we see in example (11b).

- b. T-tullabu ila ʕiinanzafi-uu fi lʔ-imtiffiaan-i  
 the-students who pass.PAST.3MS in the-exam-GEN  
 ‘The students who passed the exam.’

Benmamoun (2000: 131)

Thus, Benmamoun (2000) argues that the asymmetry found in Modern Standard Arabic agreement can be explained by invoking a morphological operation. Namely, the number feature drops because it is redundant due to the prosodic unit of the verb and the postverbal subject.

There are several issues with this argument. First, gender is also an “inherent” feature of nouns. Benmamoun (2000) never clearly articulates why the only inherent feature deemed to be redundant is number and not gender.<sup>1</sup> Additionally, Benmamoun (2000) does not adequately explain the case of an intervening verb as discussed in examples (12a), (12b) and (12c), reproduced below.

- (12) a. badaʔat al-nisaʔ-u jutalibna bi-masahatin musawijatin  
 started.3FS the-women-NOM demand.3FP in-spaces equal

lil-riiʕaali fii al-masaid-i.  
 to-the-men in the-mosques-GEN  
 ‘Women started to ask for spaces equal to the men’s spaces in the mosques’  
 (Wurmbrand and Haddad, 2014; 8)

- b. al-nisaʔ-u tafiqna jaʔtaqna ʔabida-hunna  
 the-women-NOM started.3FP free.3FP slaves-their  
 ‘The women started to free their slaves.’

(Wurmbrand and Haddad, 2014; 9)

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<sup>1</sup> All approaches available, including mine, have to stipulate that it is number and not gender that is realized.

c. bada?na tarkudu al-talibat-u fii al-mal?ab  
 started.3FP run. 3FS the-students.FP-NOM in the-playground  
 ‘The female students started to run in the playground.’  
 (Wurmbrand and Haddad, 2014; 20)

(12c) is particularly problematic. If it is necessary, as Benmamoun (2000) argues, for the verb and the subject to be adjacent for the redundancy to cause the number feature to drop, how is it possible that the non-adjacent verb displays partial agreement and not the verb directly adjacent to the subject. Thus since Wurmbrand and Haddad (2014) do account for this data, it is their approach that this thesis will adopt and extend.

#### 4.3.2 Left dislocated elements

Soltan (2007) begins his analysis of the agreement asymmetries in MSA by first making clear that there are intrinsic differences between the subjects in SVO and VSO ordered sentences. The first difference is a semantic one. This semantic difference is highlighted by the fact that Arabic grammarians have different terms for the two subjects. Subjects in SVO ordered sentences are “topic comment” (Soltan 2007, 50) structures and have more of a general interpretation which give a more general topic to the sentence. Thus these kind of subjects have less of the specific meaning other types of subjects tend to. His evidence for this difference is the fact that indefinite nonspecific NPs cannot occur preverbally (in SVO) in MSA. The second difference he discusses has to do with interaction with WH movement. Specifically, one can extract across a post verbal DP (in VSO order) but extraction across preverbal DPs (in SVO order) is ungrammatical. This is demonstrated in sentences (13a) and (13b).

- (13) a. man daraba Zayd-un  
 who hit.3MS Zayd-NOM  
 ‘Who did Zayd hit?’  
 b. \*man Zayd-un daraba  
 who Zayd-NOM hit.3MS  
 ‘Who did Zayd hit?’<sup>2</sup>

Soltan (2007: 52)

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<sup>2</sup> There is the possibility that (13b) is out because T moves to C, as in a lot of languages. But this doesn’t happen in MSA so his generalization holds.

Based on this, it is assumed that the preverbal DP is an A' position, and thus blocks wh-movement.

His third difference has to do with Case. Namely, subjects in VSO ordered sentences are nominative while subjects in SVO are nominative only when there is no available Case assigner. Examples of Case assigners include CPs headed by the complementizer *ʔinna*, usually translated as “verily,” as in sentence (14c). This is shown in sentences (14a)-(14d).

- (14) a. qaraʔa ʔal-ʔawlaad-u ʔal-dars-a  
 read-3MS the-boys-NOM the-lesson-ACC  
 ‘The boys read the lesson.’
- b. ʔal-ʔawlaad-u qaraʔ-uu ʔal-dars-a  
 the-boys-NOM read-3MP the-lesson-ACC  
 ‘The boys read the lesson.’
- c. ʔinna l-ʔawlaad-a qaraʔ-uu ʔal-dars-a  
 C the-boys-ACC read-3MP the-lesson-ACC  
 ‘I affirm that the boys read the lesson.’
- d. ɖanna-a Zayd-un ʔal-ʔawlaad-a ra!al-uu  
 believed.3MS Zayd-NOM the-boys-ACC left-3MP  
 ‘Zayd believed the boys to have left.’

Soltan (2007: 54).

In sentences (14a) and (14b), the postverbal and preverbal DPs appear in the nominative Case. However, as (14c) and (14d) demonstrate, this is not always the case with preverbal DPs. In (14c) DP obligatorily surfaces with what is morphologically identical to accusative case when preceded by a C (*ʔinna*). This also happens, as in (14d), if the DP is in the case-assignment domain of a raising-to-object matrix verb.

Based on these three differences, Soltan (2007) concludes that subjects in VSO ordered sentences are “uncontroversially subjects,” but that subjects of SVO ordered sentences are closer to topics, or left dislocated elements (Soltan 2007: 60). Thus, he suggests that in SVO ordered sentences the VP internal subject is occupied by a null subject *pro*. Pronouns in MSA induce full agreement, a fact of MSA discussed in greater depth in section 5.9.1. However, in VSO ordered sentences there is  $V \rightarrow T$  movement.

This is based on several assumptions about how Agree occurs. First, that agreement in natural language grammar is induced through application of an operation Agree, which

is a syntactic relation that takes place through a local search domain (not through a SpecHead relationship). Second, phi features for person and number may have default values. Third, T has a separate CLASS feature, which can appear as gender in many languages. Thus, if gender is not a part of the phi complex on T, it should be able to probe separately for the purpose of Agree.

Soltan (2007) does not adequately explain the case of an intervening verb as discussed in examples (15a), (15b) and (15c), reproduced below.

- (15) a. bada?at al-nisa?-u jutalibna bi-masahatin musawijatin  
 started.3FS the-women-NOM demand.3FP in-spaces equal  
 lii-l-riaali fii al-masaid-i.  
 to-the-men in the-mosques-GEN  
 ‘Women started to ask for spaces equal to the men’s spaces in the mosques’  
 (Wurmbrand and Haddad, 2014; 8)
- b. al-nisa?-u tafiqa ja?taqa ?abida-hunna  
 the-women-NOM started.3FP free.3FP slaves-their  
 ‘The women started to free their slaves.’  
 (Wurmbrand and Haddad, 2014; 9)
- c. bada?na tarkudu al-talibat-u fii al-mal?ab  
 started.3FP run. 3FS the-students.FP-NOM in the-playground  
 ‘The female students started to run in the playground.’  
 (Wurmbrand and Haddad, 2014; 20)

(15c) is particularly an issue. It is not clear how it would be possible for there to be a VP internal subject resulting in full agreement in one of the verbs, but not the other. Thus since Wurmbrand and Haddad (2014) do explain this data, it is their approach that this thesis will adopt and extend.

## 5 My Approach

### 5.1 Privative vs. Valuation systems

There are two general approaches to agreement hypotheses. The first, as in Bejar’s (2008) approach, is a privative system. This is defined in Adger and Svenonius (2009: 4) as “a feature with no properties beyond its distinctiveness from other features.” For example, in this system first person vs. second person might be understood, as it is in Bejar (2008) as ([person][participant][speaker]). On the other hand, second person in this system might be understood as ([person][participant]). However, there are many theoretical issues

associated with this kind of system and thus it is generally understood that no feature system can be entirely privative. For more discussion of this issue, see Adger and Svenonius (2009). An alternative approach is a valuation system, as in Wurmbrand and Haddad (2014) and my hypothesis. A feature is not only present or absent (as a privative system might suggest) but instead is valued as something, and thus valuation is more of a function than a property. Since Chomsky (2001) it has been understood that unvalued features instead of interpretability drives feature checking. Thus valuation is defined in Adger and Svenonius (2009) as: “one class of features (the attributes) have the fixed second order feature that they can take another class of features as their values.” The formal definition is as follows.

- (16) a. A feature is an ordered pair (Att, Val) where  
 b. Att is drawn from the set of attributes (A, B, C, D, E...)  
 c. And Val is drawn from the set of values (a, b, c, d, e...)

Thus, the valued and unvalued features unify when matching assuming that they are of the same type. For example, a third person pronoun like *he* in this system might be understood as a bundle of features, for example, (masculine, singular) which would then match with an unvalued feature bundle for example (uGender, uNumber).

## 5.2 Reverse Agree

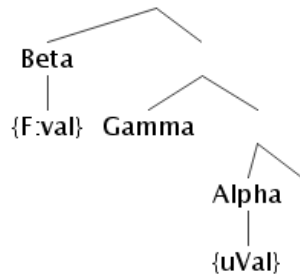
In their paper 2014 paper, Wurmbrand and Haddad analyze raising constructions in Modern Standard Arabic by proposing a cyclic spell-out approach such that a specific choice at PF at an early phase creates opacity effects on the agreement options in later cycles. In their presentation of this approach, they also discuss the agreement asymmetries also found in MSA that are the focus of this paper.

Their approach is based on the idea of Reverse Agree, which is discussed in Wurmbrand (2012) as well as numerous other publications. Reverse Agree is defined in the following manner:

- (17) A feature F: \_\_ on  $\alpha$  is valued by a feature F: val on  $\beta$  iff  
 a.  $\beta$  asymmetrically c-commands  $\alpha$   
 b. There is no  $\gamma$ , such that  $\gamma$  is distinct from  $\beta$ , with a valued interpretable feature F such that  $\gamma$  c-commands  $\alpha$  and is c-commanded by  $\beta$

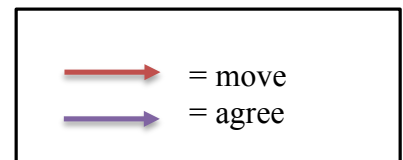
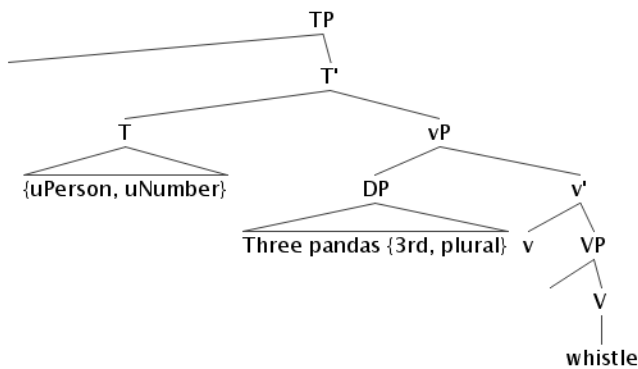
Essentially,  $\alpha$  and  $\beta$  can Agree, where  $\beta$  has a value, but  $\alpha$  doesn't, but only if this doesn't happen:

(18)

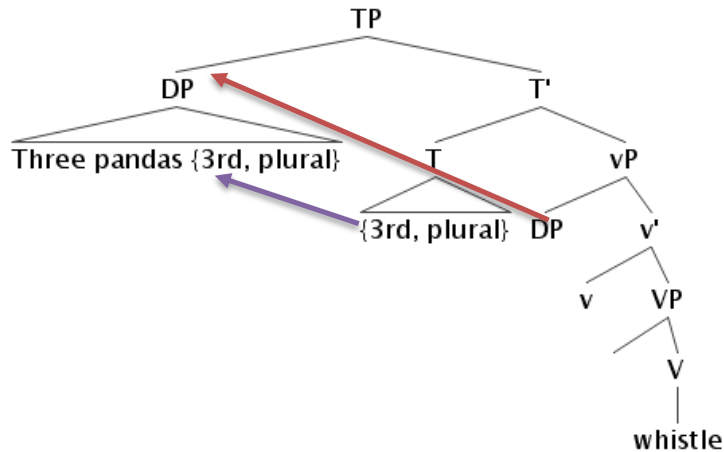


Example (19a) and (19b) give an example of how this would work in English. It is important to note that Reverse Agree is a theory of agree, and thus is not something languages vary on, thus if you propose that there is Reverse Agree in MSA, it must be possible for it also to be in English. The claim is that movement occurs in order to create the configuration necessary for an Agree relation to obtain. The following example sentence demonstrates how this works. The sentence begins as in (19a) as ‘three pandas climb.’ ‘Three pandas’ is valued for number and person (setting aside gender since English verbs do not agree for gender). T is unvalued for number and person. The DP subject them moves up to specTP, motivated by the unvalued features on T, shown in (19b). At this point, DP now asymmetrically c-commands T, which puts it in the correct configuration for reverse Agree. Thus T is now valued for number and person, as is shown in (19b).

(19) a.



b.



### 5.3 Different ways of realizing EPP feature

The approach for how to explain the phenomenon of agreement asymmetries in MSA explored in this thesis, as well as in Wurmbrand and Haddad (2014) is predicated on the possibility of having two different ways to realize an EPP feature. This notion of the EPP being realized in different ways was explored in depth in Alexiadou and Anagnostopoulou's (1998). In their paper, they explored asymmetries in subject behavior in Germanic, Celtic, Arabic and Greek. They split the languages into two groups based on their respective treatment of a number of properties, namely availability of pro-drop with referential subjects, possibility of VSO and VOS orders and the A/A' status of subjects in SVO sentences, among others. The first group, which is comprised of Germanic, allows its EPP to be checked by move/merge of XP. The second group, which is comprised of Celtic, Arabic, Greek and Romance checks the EPP by move/merge of  $X^0$ .

Wurmbrand and Haddad (2014) clarify in their paper that the EPP feature they refer to isn't a true EPP feature in the traditional sense. That is, not the principle that "all clauses must have subjects (i.e. the specifier of TP must be filled by a DP or CP) and lexical information is expressed at all levels" (Carnie 2013: 238). Instead, in their theory they assume that there is some kind of feature on T that needs to be realized through the movement of some other item. In the case of their theory, they argue that this "property" (which they refer to throughout as an EPP property of T for convenience sake) can either be realized by

1.  $V \rightarrow T$  movement
2. Subject DP  $\rightarrow$  SpecTP.



Although their approach allows for different realizations of the EPP across different languages, the notion of expanding the possibilities for movement by the EPP feature found in Alexiadou and Anagnostopoulou (1998) clearly informed Wurmbrand and Haddad's approach. By expanding this possibility for two different realizations of the EPP feature to one language they were able to build on Alexiadou and Anagnostopoulou's (1998) work. Wurmbrand and Haddad (2014: 22) argue that the movement is triggered by the unvalued phi features on T, because Merge (whether external or internal) is triggered by the need to value features.

#### 5.4 Derivation of basic SVO

Thus, in summary, Wurmbrand and Haddad (2014) begin with the premise that MSA is a VSO ordered language, with SVO ordered sentences derived through movement. This is a common assumption about MSA. They go on to claim that the unvalued phi-features on T trigger movement in MSA, which they refer to as an EPP property of T and can be realized two ways:

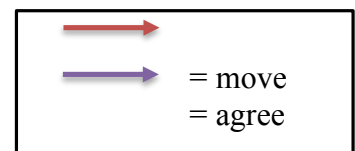
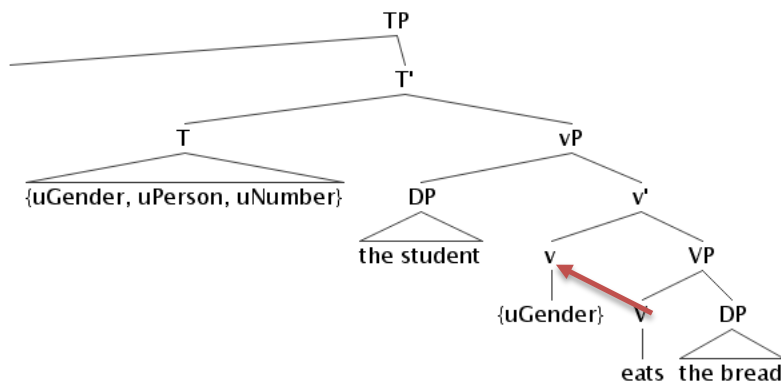
1.  $V \rightarrow T$  movement
2. Subject DP  $\rightarrow$  SpecTP movement

This movement is triggered by an unvalued phi-feature on T, which needs to get valued under a c-command relation (as by the theory of Reverse Agree discussed above). Little *v* also has unvalued phi-features, however, when *v'* merges with the subject, *v* takes on the features of the subject. In both SVO (in tree 12 below) and VSO ordered sentences (in tree 13 below), T agrees with the subject either directly, as in the case of full agreement in SVO ordered sentences, or indirectly by Agreeing with the moved little *v* which in turn Agrees with the subject. This agreement between little *v* and T is a relationship between two uninterpretable features. The critical difference between the two agreement patterns is that little *v* only has gender features while T has a full set of phi-features.

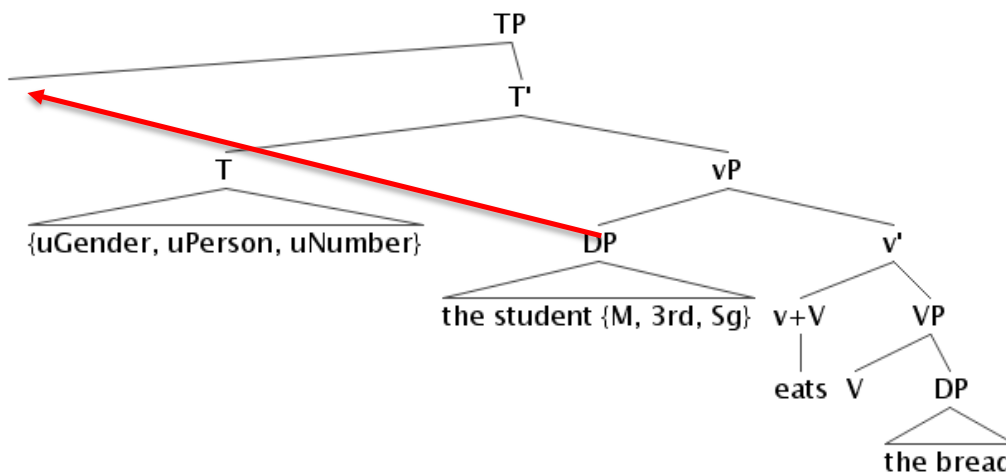
According to this explanation, a basic SVO sentence is derived as follows. First, *V* moves up and merges with *v*, as is shown in (19a), *v*'s gender features are valued at this time. Then the DP subject moves up to SpecTP to realize the EPP feature, as is shown in (19b). Third, since the DP and T are now in the correct configuration for Reverse Agree to occur, and since T is unvalued for full features (namely number, gender and person), T agrees with the DP subject for all features, as is shown in (19b). Thus the final sentence is

in SVO order with full agreement between subject and verb. In SVO sentences, the fact that little *v* is only unvalued for gender features (*v*'s features are valued as soon as the DP merges in SpecvP) has no bearing on the structure. This is because the EPP property of T is satisfied by the subject movement which occurs, resulting in the order of the sentence. Thus, even though little *v* only has a gender feature, since T is valued by the subject DP, T inherits all phi values from the subject. It is important to note an implicit assumption here, which is that visible verbal agreement morphology is a realization of T, rather than *v*. Thus, *v*'s features aren't directly visible.

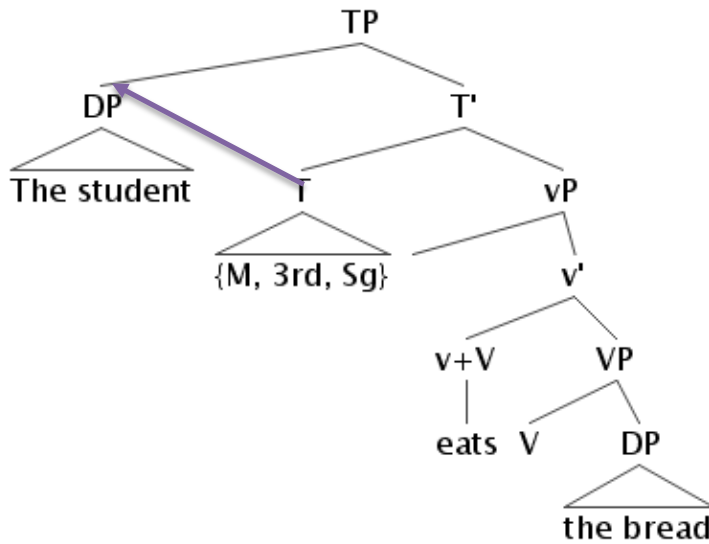
(19) a.



b.



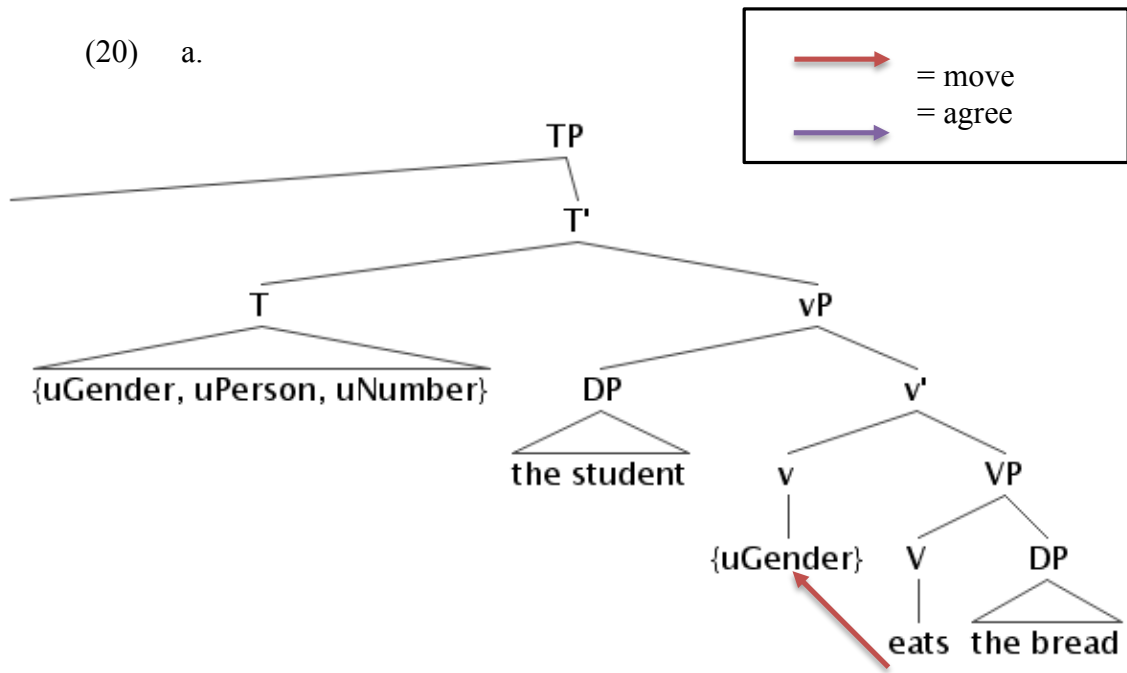
c.



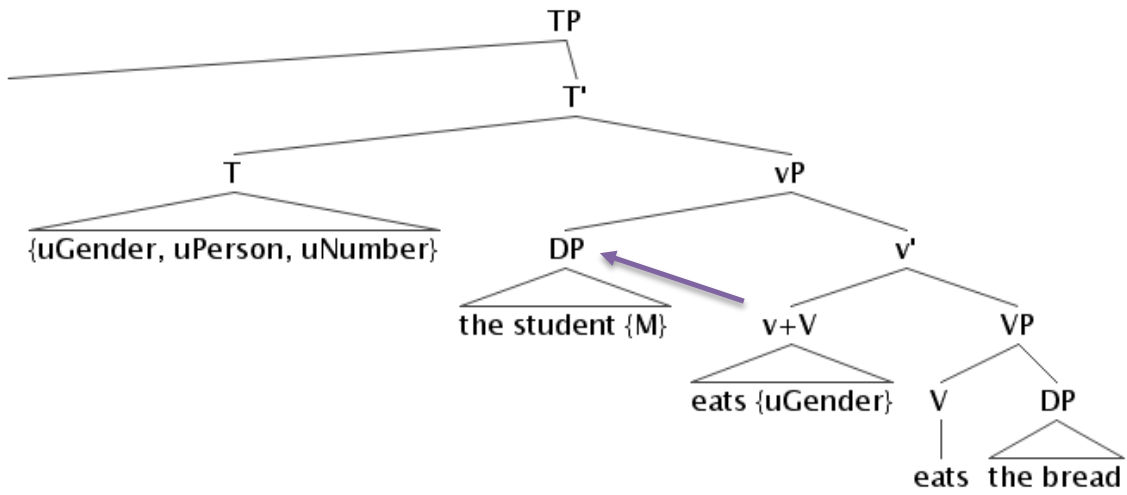
### 5.5 Derivation of basic VSO

The derivation of a basic VSO sentence is as follows. First, V moves up to merge with v, just as in SVO sentences, as shown in (20a). Then v is in the right configuration to Reverse Agree with T, as is shown in (20b), since it c-commands it. However, since v is only unvalued for gender, the subject and verb only agree in gender. The merged V+v move up to T to satisfy the EPP property on T. When v+V moves to T, as is shown in (20c), v is in the right configuration to value T's gender feature, since v c-commands T. However, since there is no subject DP in specTP, there is nothing else for T to Reverse Agree with and get default values for its remaining unvalued features. Thus the sentence order is VSO with only partial agreement between subject and verb.

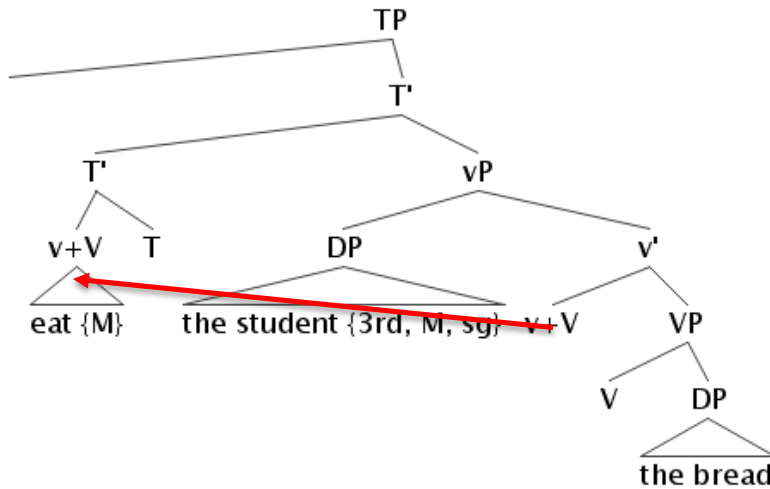
(20) a.



d.



e.



### 5.6 Raising Constructions in MSA

While the above derivations demonstrate what happens in a basic sentence, the theory also applies to raising constructions. In these cases the first verb only agrees in gender but not number with the subject while the final verb agrees fully in gender and number with the verb. This is shown in sentence (21a) described earlier and reproduced below.

- (21) a. badaʔat al-nisaʔ-*u* jutalibna bi-masahatin musawijatin  
 started.**3FS** the-women-NOM demand.**3FP** in-spaces equal  
 lii-l-riaali fii al-masaid-i.  
 to-the-men in the-mosques-GEN  
 ‘Women started to ask for spaces equal to the men’s spaces in the mosques’  
 (Wurmbrand and Haddad, 2014; 8)

However, in sentences as in (21b) below, when the subject precedes both the main and non-main verb, both verbs agree fully with the subject.

- b. al-nisaʔ-*u* tafiqa jaʔtaqna ʔabida-hunna  
 the-women-NOM started.**3FP** free.**3FP** slaves-their  
 ‘The women started to free their slaves.’  
 (Wurmbrand and Haddad, 2014; 9)

In some cases, both verbs precede the subject, in which case the first verb agrees fully and the second verb only partially. This is shown in sentence (21c) below.

- c. bada?na tarkudu al-talibat-u fii al-mal?ab  
 started.3FP run. 3FS the-students.FP-NOM in the-playground  
 ‘The female students started to run in the playground.’  
 (Wurmbrand and Haddad, 2014; 20)

Interestingly, a sentence like (21d), with full agreement on the two verbs preceding the subject, is ungrammatical.

- d. \*bada?na tarkuduna al-talibat-u fii al-mal?ab  
 started.3FP run. 3FP the-students.FP-NOM in the-playground  
 (Wurmbrand and Haddad, 2014; 20)

Wurmbrand and Haddad (2014) explain the above data by drawing on work on scope, binding and reconstruction by Chomsky (1973) and Legate (2003) among others to make a new proposal. Specifically, they suggest that there are three phase boundaries between the matrix T and the original position of the subject DP in raising constructions as are found in the above examples. These three options are the matrix vP, the top projection of the infinitive (denoted in their schematic as XP), and the embedded vP. Due to the cyclical nature of movement, the DP can rest in four possible places as it raises through the edge of every phase. The edges of these phases are shown below.

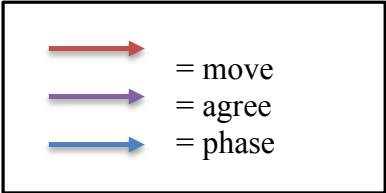
- (22) [<sub>TP</sub> SUBJ (1) T [<sub>VP=PHASE</sub> SUBJ (2) [<sub>XP=PHASE</sub> SUBJ (3) [<sub>VP=PHASE</sub> SUBJ (4)]]]]

### 5.6.1 Derivation of DP V1-FA V2-FA and V1-PA DP V2-FA Sentences

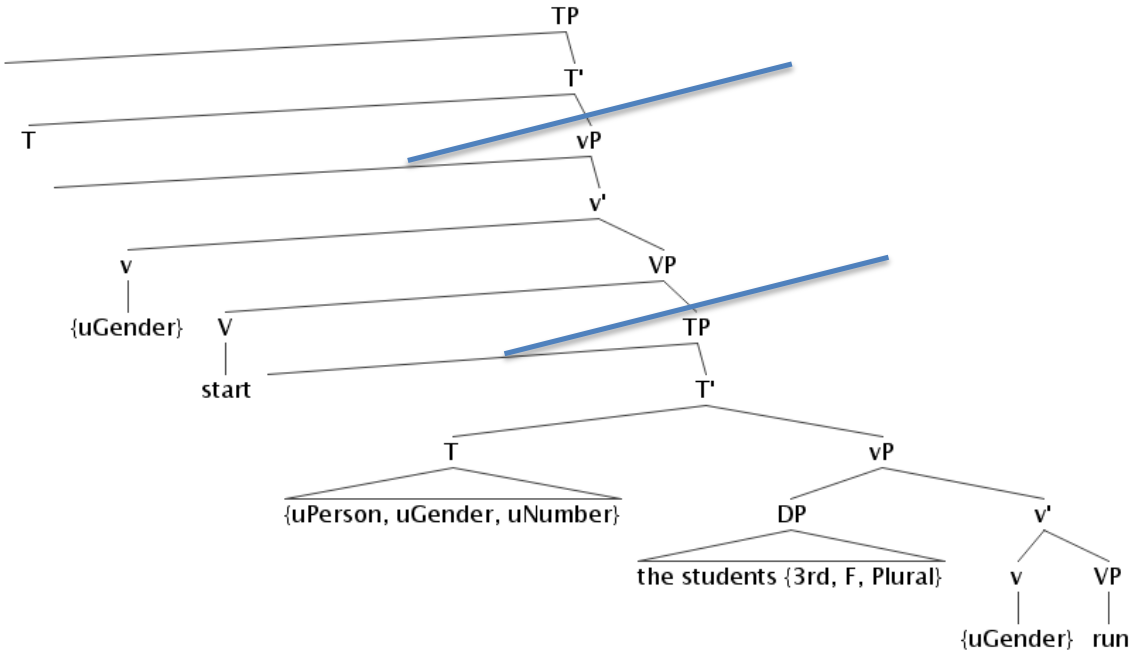
The derivation of sentences as in (21a) and (21b), reproduced below, is as follows.

- (21) a. bada?at al-nisa?-u jutalibna bi-masahatin musawijatin  
 started.3FS the-women-NOM demand.3FP in-spaces equal  
 lii-l-riaali fii al-masaid-i.  
 to-the-men in the-mosques-GEN  
 ‘Women started to ask for spaces equal to the men’s spaces in the mosques’  
 (Wurmbrand and Haddad, 2014; 8)
- (21) b. al-nisa?-u tafiqna ja?taqna ?abida-hunna  
 the-women-NOM started.3FP free.3FP slaves-their  
 ‘The women started to free their slaves.’  
 (Wurmbrand and Haddad, 2014; 9)

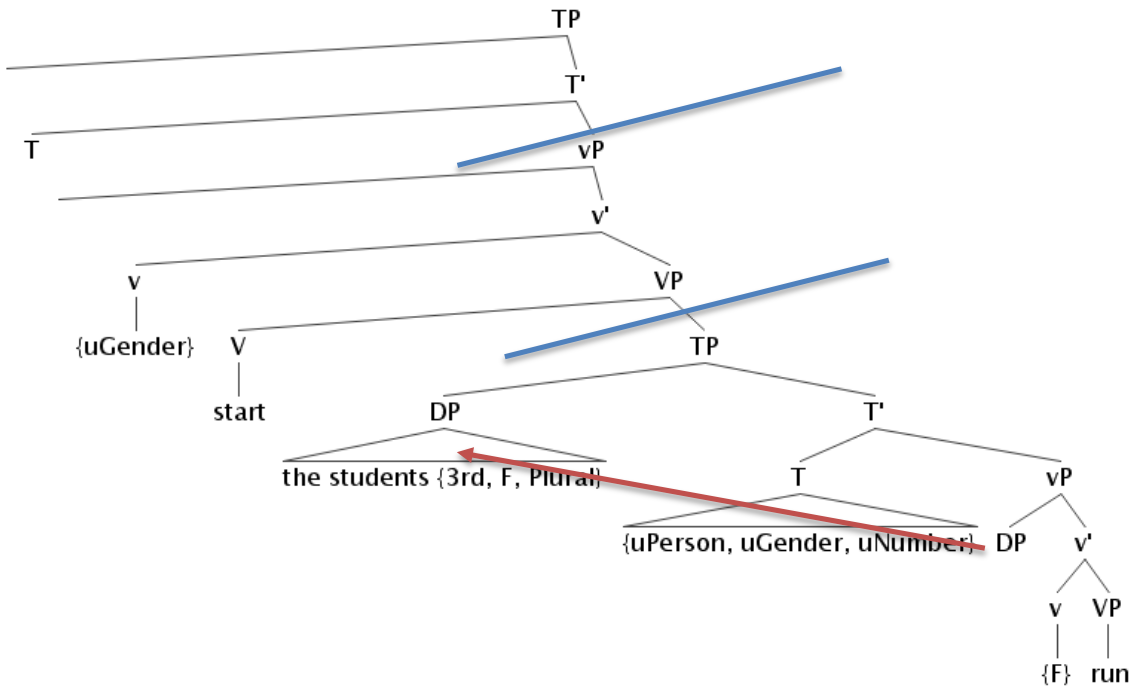
The underlying structure is shown in (23a). First, the subject DP moves to the embedded SpecTP. This is shown in (23b). This then values the embedded T, resulting in full agreement of all features (namely gender and number), as is shown in (23c). The embedded TP is a phase, as discussed above, thus both transfer and spell-out occurs. The subject DP then moves to the specvP of the matrix verb, as shown in (23d). At this point the gender feature of the matrix v is valued, as is shown in (23e). Finally, the subject DP moves to specTP, resulting in full agreement with the matrix verb, as in (21f) and (21g). Alternatively, the matrix v moves up to T, resulting in partial agreement on the main verb, as in sentence (21h).



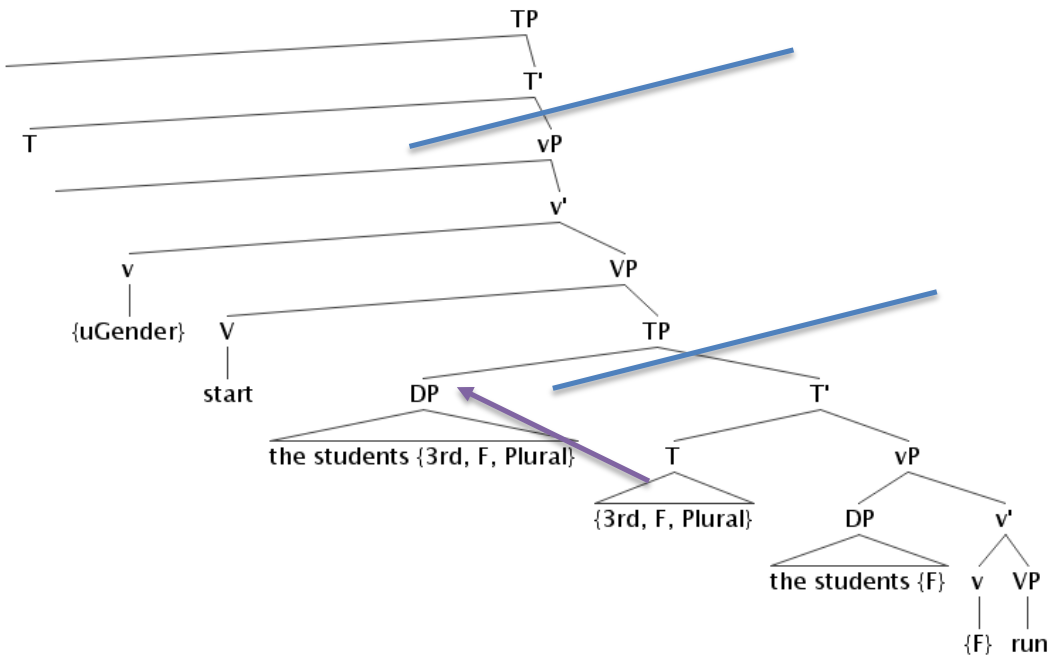
(23) a.



b.

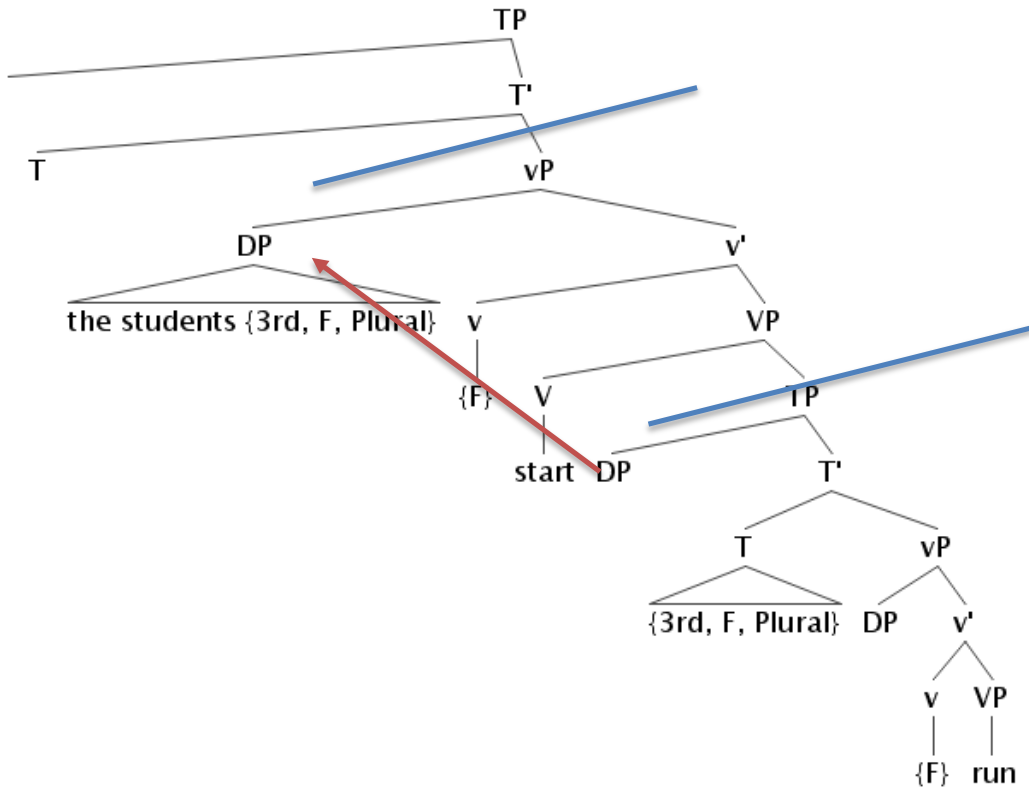


c.

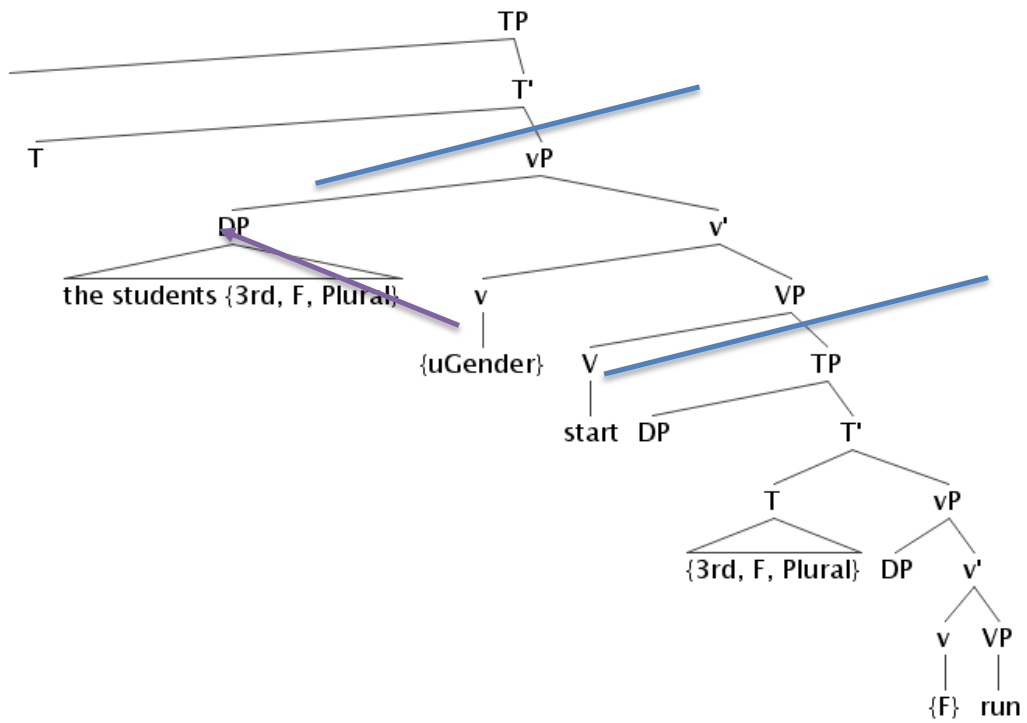




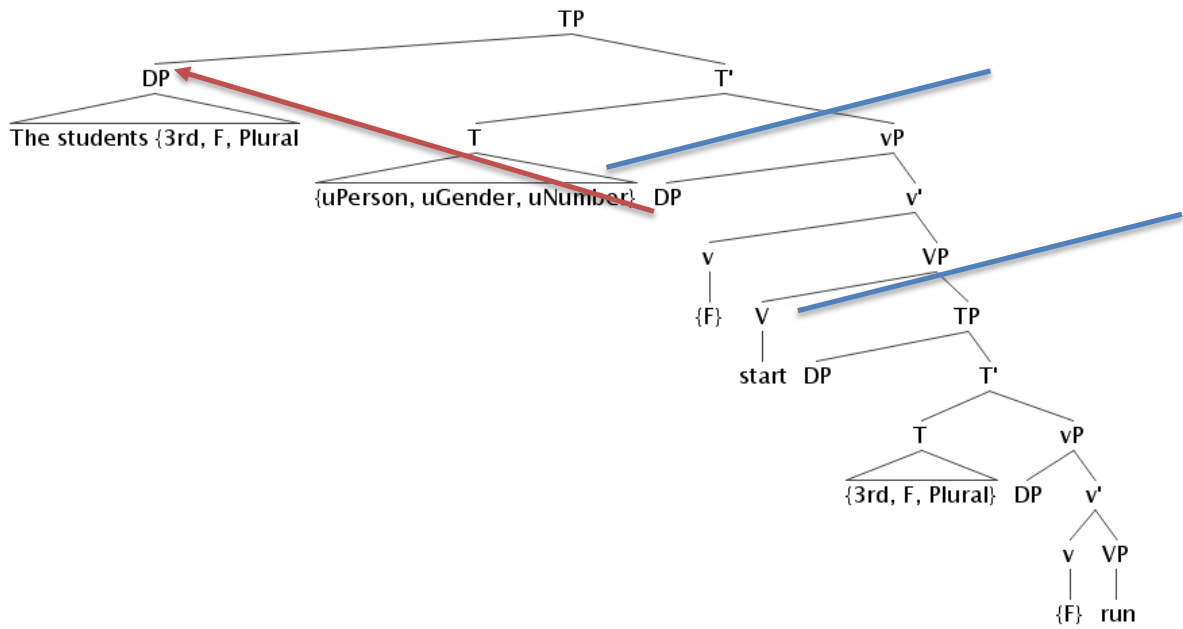
d.



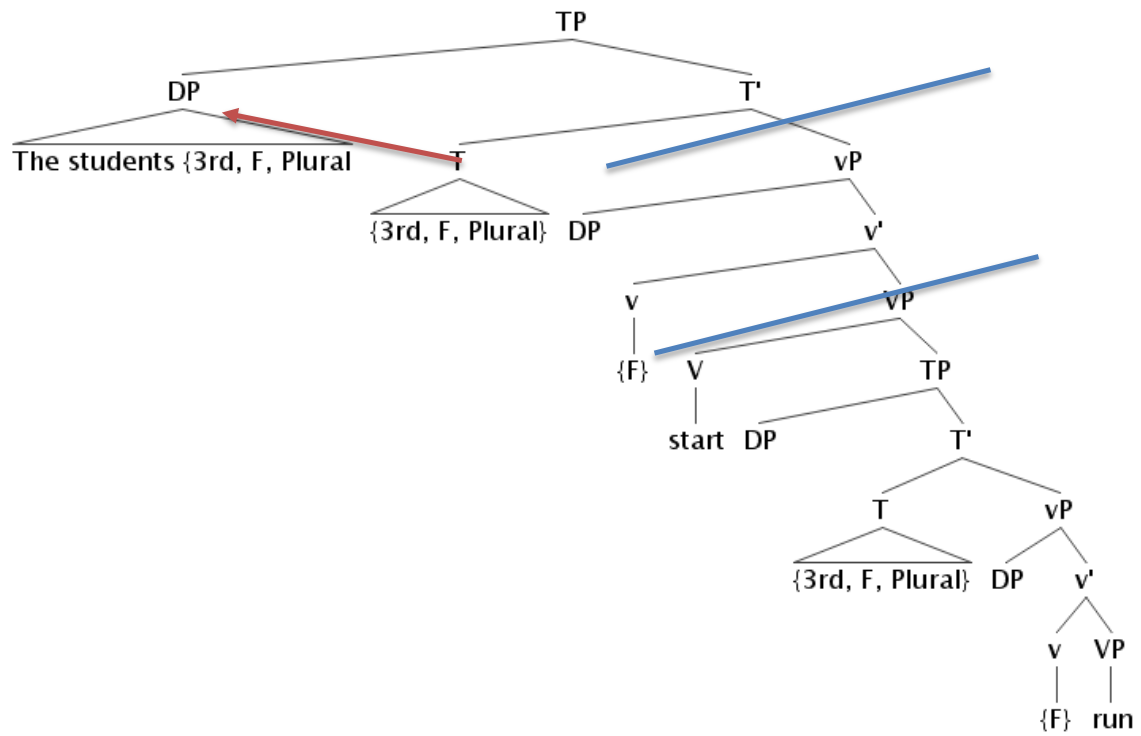
e.



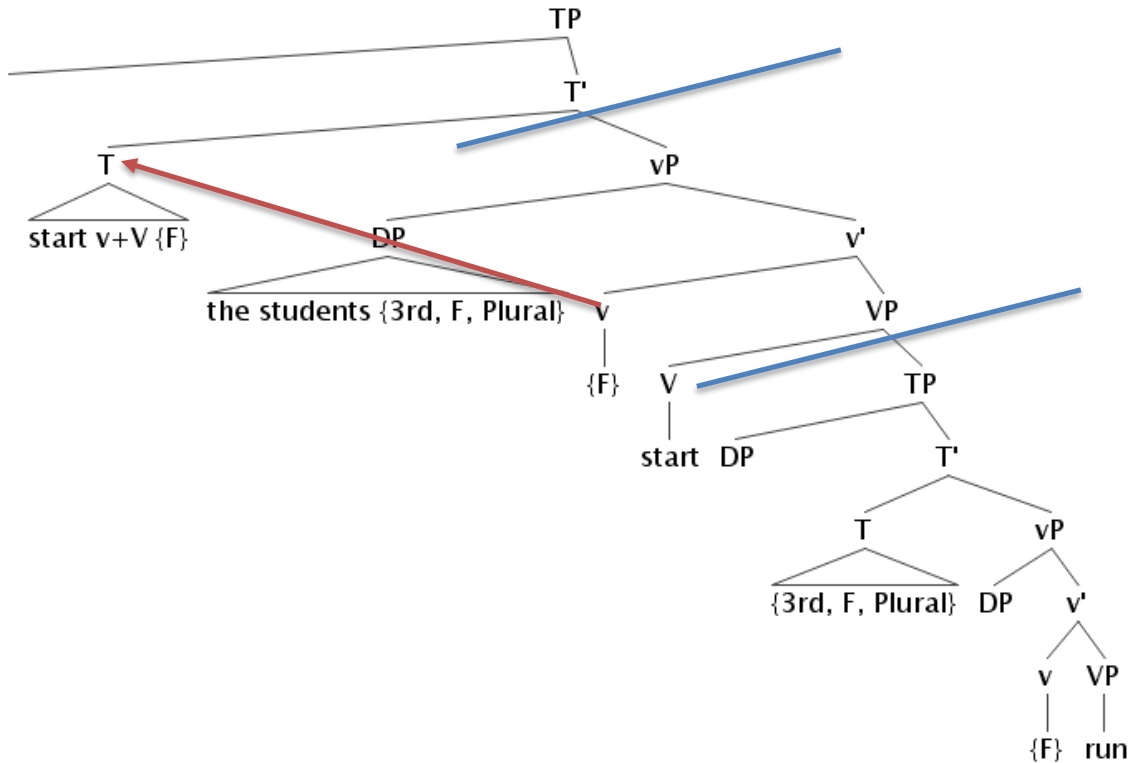
f.



g.



h.



### 5.6.2 Derivation of V1-FA V2-PA DP Sentences

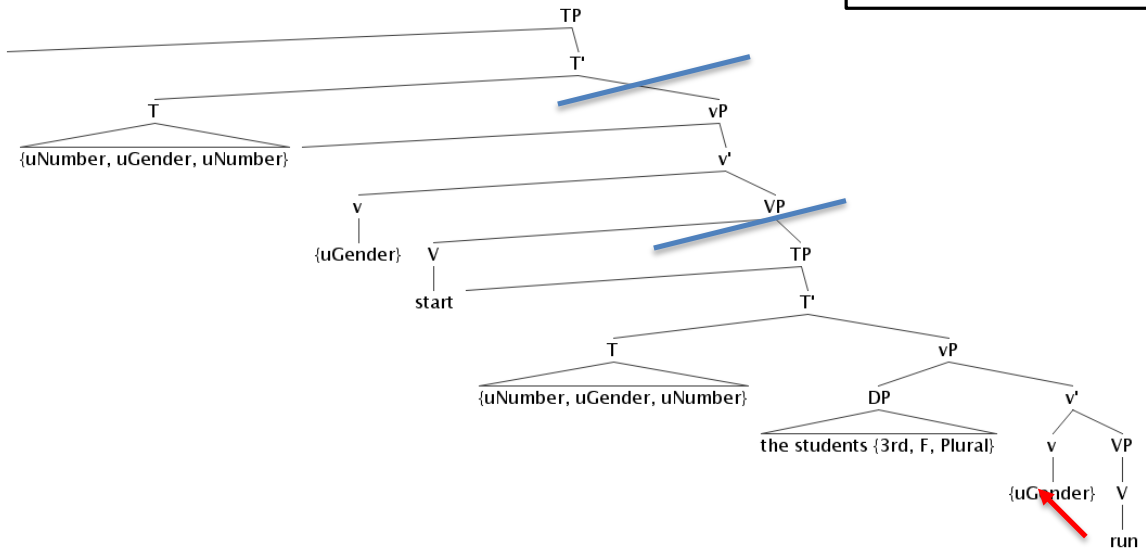
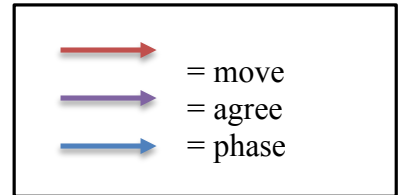
A more complicated example, and one which is not explained by any of the alternate approaches discussed in section 4, is those of the following structure: verb which fully agrees with subject, verb which partially agrees with subject, and finally the subject. Example of this type can be found in sentence (21c), reproduced below.

- (21) c. bada?na tarkudu al-talibat-u fii al-mal?ab  
 started.3FP run. 3FS the-students.FP-NOM in the-playground  
 ‘The female students started to run in the playground.’  
 (Wurmbrand and Haddad, 2014; 20)

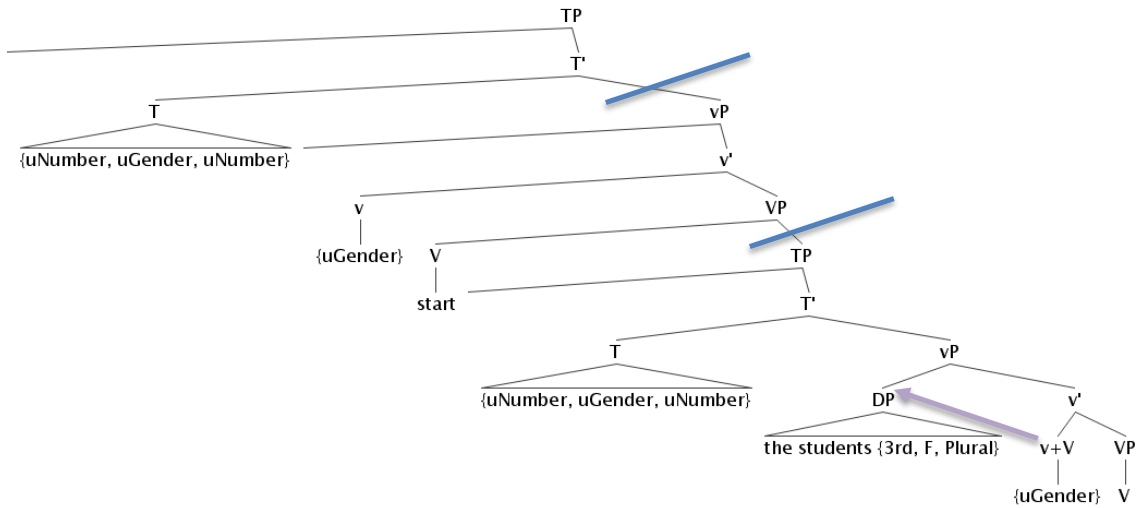
It is important to note, that even in this example when both verbs precede the subject, the subject still precedes the other elements of the embedded clause (namely ‘in the playground’), which proves that the pronounced position of the subject is low, rather than high, but to the right.



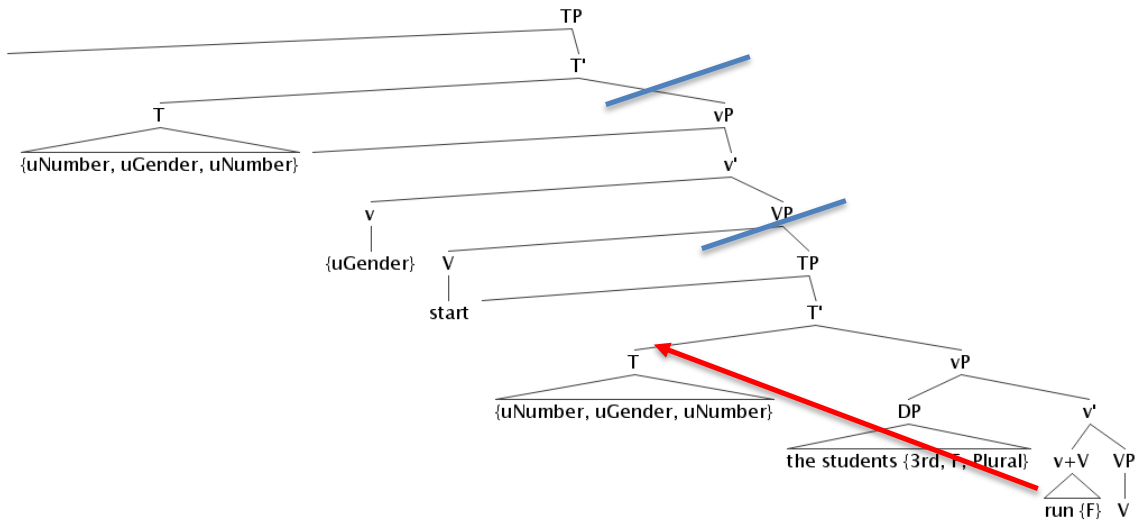
(24) a.



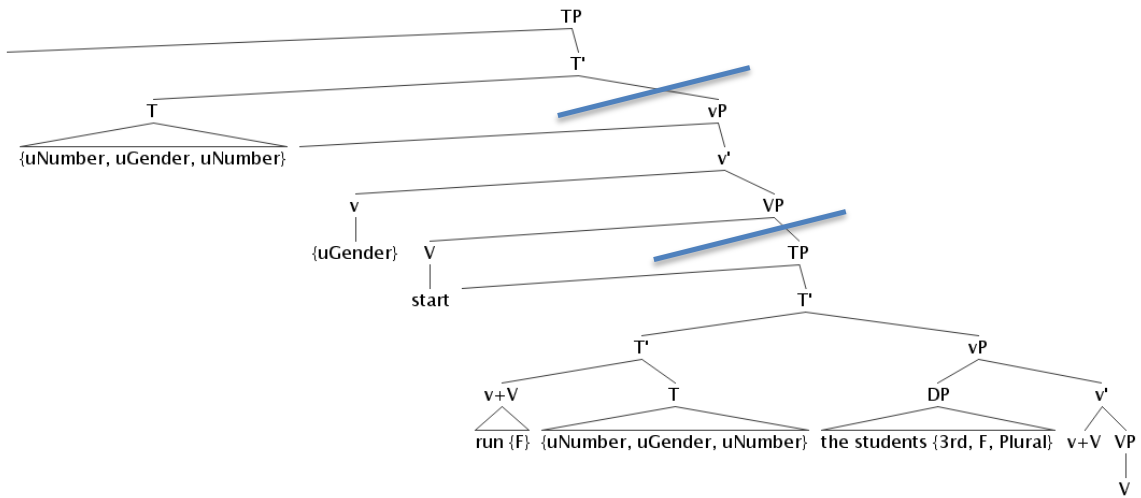
b.



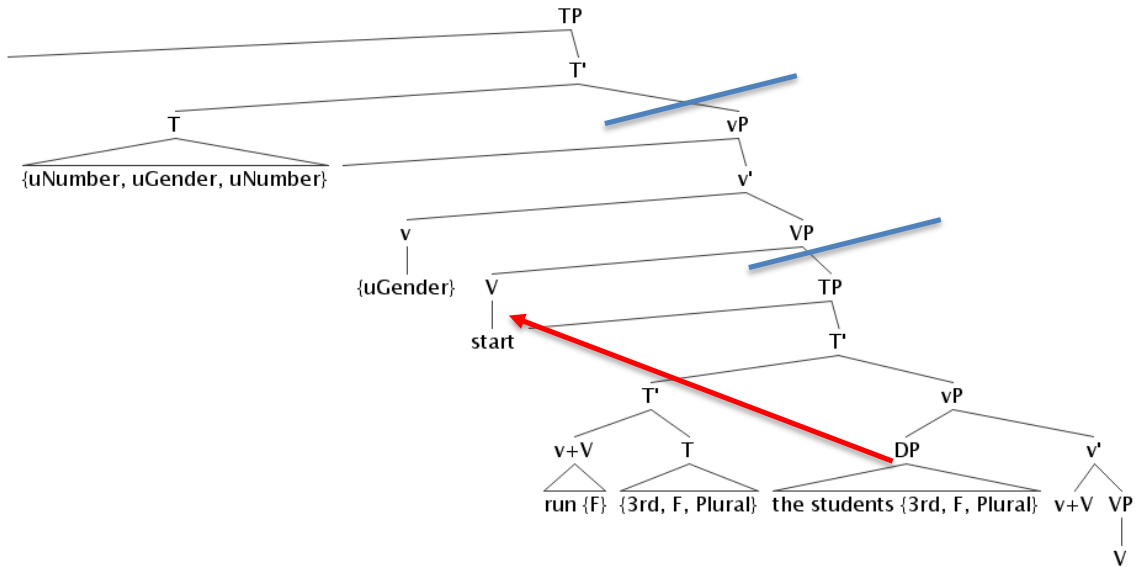
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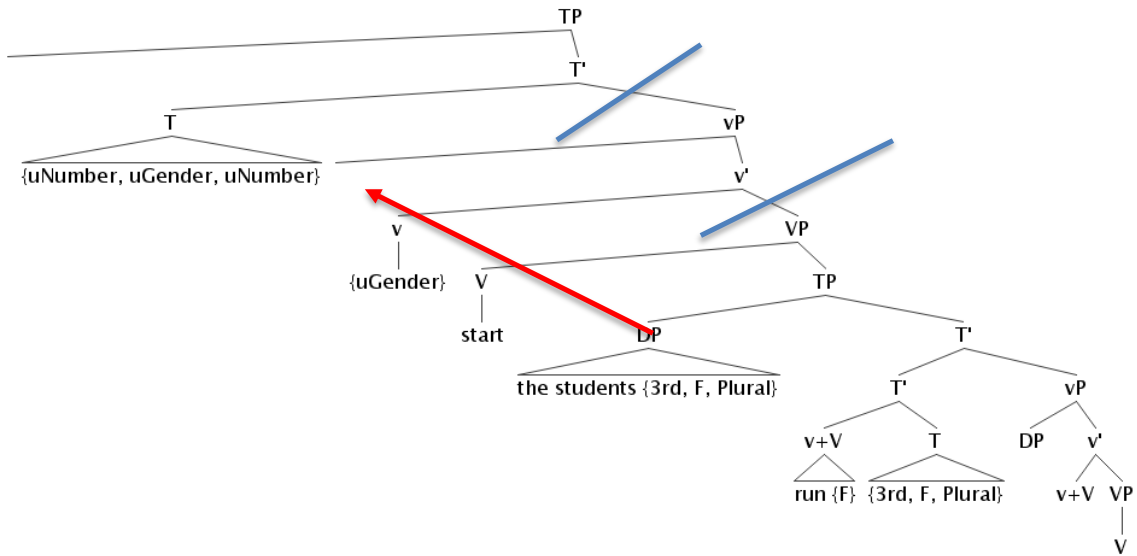
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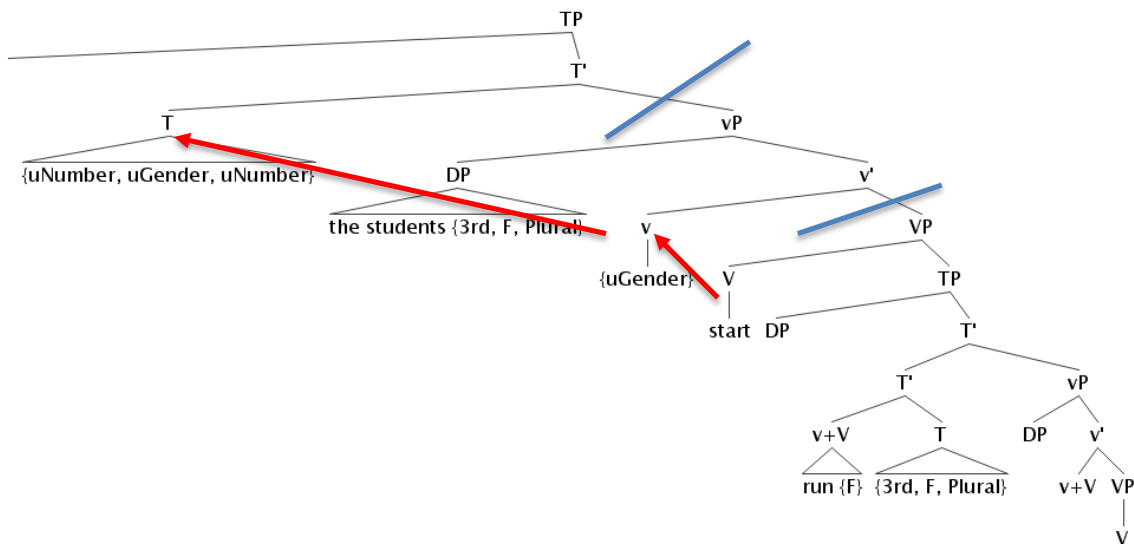
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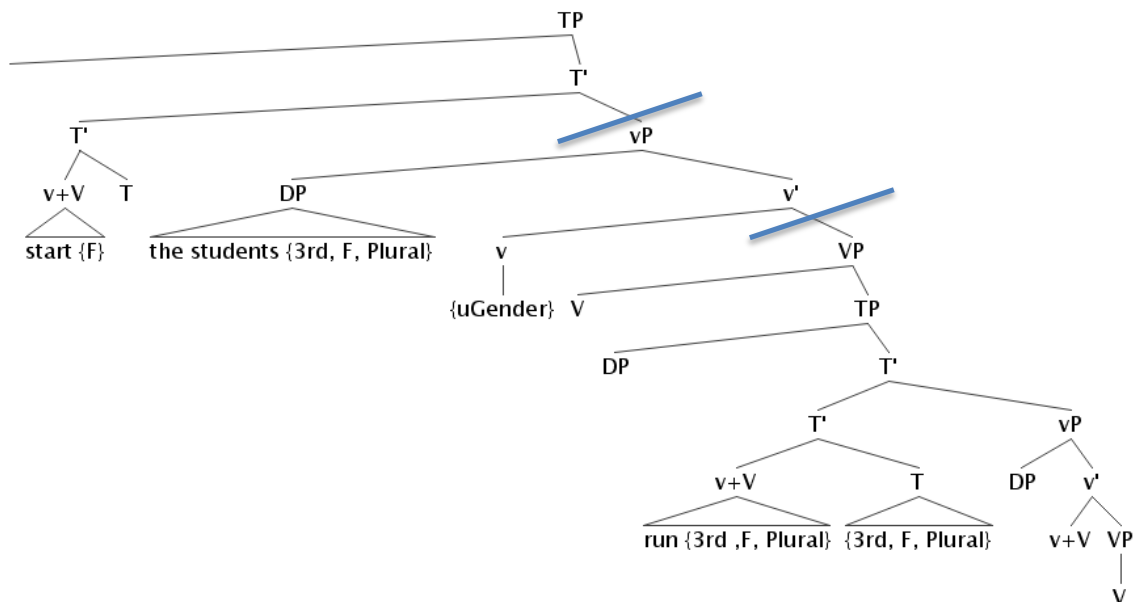
f.



g.



h.



## 5.7 Pronoun subjects

### 5.7.1 Overview of pronoun problem

The pattern discussed above in detail always involved lexical subjects. When the subject is a pronoun, the agreement asymmetry disappears. In both VSO and SVO sentences with pronoun subjects, full agreement occurs. This is demonstrated in the following sentences.



- (25) a. **(Hum)** qaraʕ-**uu** ʕal-dars-a  
**(they)** read-**3MP** the-lesson-ACC  
 ‘They read the lesson’
- b. qaraʕ-**uu** **hum** ʕal-dars-a  
 read-**3MP** **they** the-lesson-ACC  
 ‘They read the lesson’
- c. \*qaraʕ-**a** **hum** ʕal-dars-a  
 read-**3MS** **they** the-lesson-ACC  
 ‘They read the lesson’

Soltan (2007: 56)

Sentence (25a) is an SVO sentence, and thus full agreement is expected. However, sentence (25b) is VSO, and thus partial agreement is expected, but is ungrammatical as is shown in sentence (25c). It is important to note, however, that while (24a) is marked as grammatical, it is in fact highly marked. MSA is a null-subject language. Thus when the pronoun is overt and the first element as in (25a), it is only when the pronoun is heavily emphasized and has contrastive focus effects.

### 5.7.2 Presence of *pro*

The contrastive nature of the pronoun subjects can be seen in the following examples.

- (26) ḥadar-u: hum ʔanfusa-hum (wa-laysa ʔasʕdiqa:ʔ-u-hum)  
 arrived-3MP they selves-them (and-NEG.BE friends-NOM-their)  
 ‘They themselves arrived; (not their friends).’  
 ‘It was they who arrived; (not their friend).’

(Youssef Haddad, p.c.)

In sentence (26), the subject *hum* or ‘they’ agrees in gender and number with the verb *ḥadaru* ‘they arrived.’ However, the pronoun in sentence is understood to be contrastive, it was “they” and crucially not “their friends.” Thus, it is possible that sentence (26) is a pro-drop sentence, and is the equivalent of sentence (27), such that the real subject is in fact pre-verbal, and thus it is still SVO.

- (27) l-t<sup>ʕ</sup>ullab-u      ḥadar-u:      hum      wa-laysa      ʔas<sup>ʕ</sup>diqa:ʔ-u-hum  
the-students-NOM arrived-3MP they      and-NEG.BE friends-NOM-their  
‘It was the students who arrived; not their friend.’ OR  
‘The students, it was they who arrived; not their friends.’  
(Youssef Haddad, p.c.)

It is important to note that pronouns can be used in the same way with other arguments, as demonstrated by the following example sentences.

- (28) sa:ʕad-tu      l-t<sup>ʕ</sup>a:libat-a  
helped-1S      the-student-ACC  
‘I helped the student.’  
(Youssef Haddad, p.c.)

- (29) sa:ʕad-tu-ha: hiya wa-laysa      ʔas<sup>ʕ</sup>diqa:ʔ-a-ha:  
helped-1S-her she      and-NEG.BE friends-ACC-her  
‘I helped HER, not her friends.’  
(Youssef Haddad, p.c.)

- (30) l-t<sup>ʕ</sup>a:libat-u      sa:ʕad-tu-ha:      hiya wa-laysa      ʔas<sup>ʕ</sup>diqa:ʔ-a-ha:  
the-student-NOM helped-1S-her she      and-NEG.BE friends-ACC-her  
‘The student, I helped HER, not her friends.’  
(Youssef Haddad, p.c.)

When a pronoun is used in a conjunct phrase, the sentence is still about the referent of the pronoun rather than the whole conjunct. This can be demonstrated in the following example.

- (31) (l-t<sup>ʕ</sup>ullab-u)      ḥadar-u:      hum      wa-ʔas<sup>ʕ</sup>diqa:ʔ-u-hum  
(the-students-NOM) arrived-3.MP they      and-friends-NOM-their  
‘(The students), they and their friends arrived.’  
(Youssef Haddad, p.c.)

Thus it is thought (e.g in Aoun et. al. 2010 :167) that Modern Standard Arabic is a pro-drop language, much like Spanish and many other languages in the world. In such pro-drop languages, I argue, *v* has all the phi-features that *pro* would have, but that they are interpretable. A related idea has been discussed extensively in such previous works as Alexiadou and Anagnostopoulou (1998) and Legate (2012).

There is some evidence to support this theory in that in many pro-drop languages, agreement inflection appears morphologically very similar to the pronouns themselves.

	Singular (Pronoun)	Singular (Present tense verb)	Singular (Past tense verb)	Dual (Pronoun)	Dual (Present tense verb)	Dual (Past tense verb)	Plural (Pronoun)	Plural (Present tense verb)	Plural (Past tense verb)
First person	Ana	A-ktubu	Kitab-tu	--	Na-ktubu	Kitab-na	Nahnu	Na-ktubu	Kitab-na
Second person (M)	Ante	Ta-ktubu	Kitab-ta	Antuma	Ta-ktub-aani	Kitab-tuma	Antum	Ta-ktub-uuna	Kitab-tum
Second person (F)	Anti	Ta-ktub-iina	Kitab-ti	--	Ta-ktub-aani	Kitab-tuma	Antuma	Ta-ktub-na	Kitab-tunna
Third person (M)	Howa	Ya-ktubu	Kitab-a	Huma	Ya-ktub-aani	Kitab-aa	Hum	Ya-ktub-uuna	Kitab-buu
Third person (F)	Hiya	Ta-ktubu	Kitab-at	--	Ta-ktub-aani	Kitab-ataa	Hunna	Ya-ktub-na	Kitab-na

**Table 1: Comparison of Pronominal, Past and Present Tense Paradigms**

This suggests that it is possible that these phi features of *pro* could be realized on this v head. This can be seen in MSA. MSA has a pronominal system with 3 persons (first, second and third) three numbers (singular, dual and plural) and 2 genders (feminine and masculine). Neither gender individuation is present in the first person, nor in either dual form. Additionally, there is no dual form of the first person. The paradigm is presented in full, alongside comparisons with the verbal paradigms in table 1 below.

The pronouns themselves have interesting morphology. Particularly, in the second and third person there appears to be evidence that the pronouns are bimorphemic. In the second person, it seems plausible to divide the pronouns into a stem morpheme *ant* which would carry the second person meaning. Thus *-i* and *-e* would carry both the singular meaning and the distinction in gender. *-Uma* carries the dual meaning, *-um* and *-uma* carries the plural and gender distinctions.

Similarly, it seems plausible that the *h* prefix may carry the third person meaning. Then *-owa* and *-iya* would carry the singular and gender distinctions. *-uma* would carry the dual meaning, as in the second person. There is a collapse of the *-uma* morpheme in the second and third person dual and plural. *-Um* and *-unna* would carry the plural and gender distinctions.

Thus there is contextual allomorphy in the first person such that *-owa* and *-iya* realize the singular gender in the context of third person, while *-e* and *-i* realizes singular gender in the context of second person.

Suggestive for this theory of phi features of *pro* being realized on the v head, some of this pronoun morphology is also present in the verbal morphology. For example, the entire paradigm for the MSA present and past tenses is found in table 1 above. There are some clear parallels between the morphemes of the verbal and pronominal paradigms. For example, the *ta* and *ti* gender distinctive suffixes in the second person singular of the past tense indicative forms mirrors the *ta* and *ti* gender distinctive suffixes in the second person singular pronouns. Additionally, the *na* prefix in the first person plural present tense indicative form and the *na* suffix in the first person plural past tense indicative forms mirrors the morphology of the first person plural pronoun. Also, the *tum* suffix in the second person plural masculine form mirrors the suffix in the second person plural masculine pronoun. Finally, the *na* suffix in both the third person plural feminine present and past forms mirrors the suffix in the third person plural feminine pronoun. While these parallels are not universal to all the pronouns or all the verbal forms, there are enough instances to give some evidence to the theory. Additionally, this pattern has been found in numerous other pro-drop languages, like Spanish.

### 5.7.2 Derivation Explanation

Thus, following this theory of *pro* and the explanation for verbal asymmetries laid out above, the behavior of pronoun subjects can be explained in the following way. The pronoun subject is kind of redundant since no “real” subject is necessary because v already has full interpretable phi features. Thus, pronoun subjects are primarily contrastive, as evidenced by the data explained above. This also explains the facts described in section 5.7.1 that in SVO sentences with pronoun subjects, the sentences are highly marked with the pronouns really only present for focus purposes. Based on this evidence, I propose that *pro* is a kind of v (with full phi features), and that v is always present in the presence of pronoun subjects. The phi features of this *pro* are realized on v, as explained above. Thus, even when you have the version of the realization of the EPP feature such that  $v \rightarrow T$  instead of the subject DP moving to SpecTP, full agreement still occurs because the little v has all the features of the *pro*. This causes VSO exceptionally to have full agreement. Full derivations

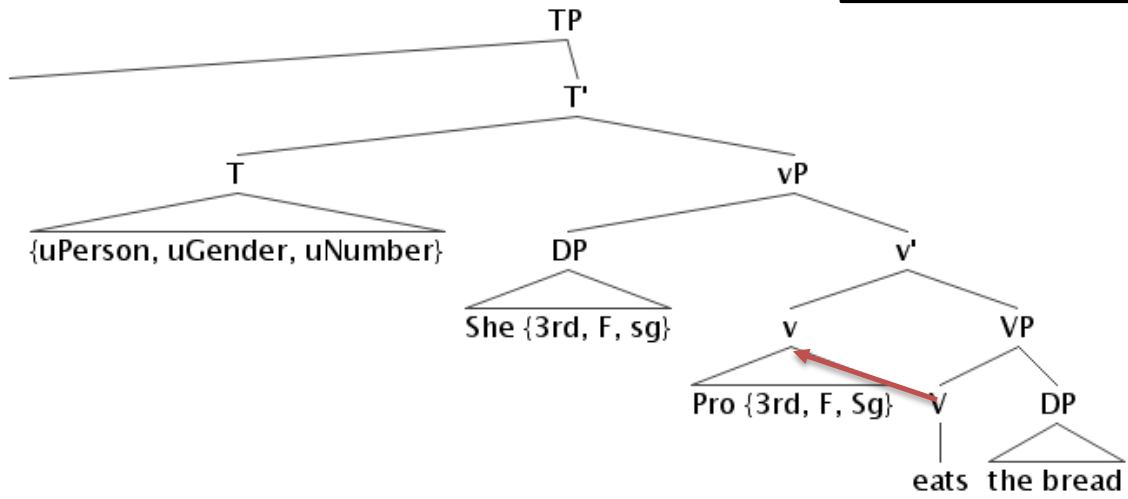
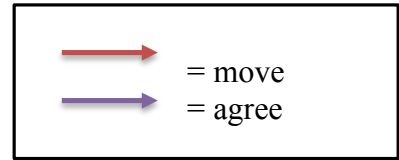
of both SVO and VSO sentences with pronouns subjects can be found in the following sections.

It is important to posit here a possible explanation for why this full *v* isn't possible with lexical subjects. Little *v* has a set of phi features that is already valued. Under the last resort theory of merge, there would be no way to merge anything into this structure, since according to this theory merging only occurs as a last resort. Thus there is no reason to merge anything. This leaves the mystery of why overt pronouns are ever used. It is possible that they're some kind of adjunct or doubles.

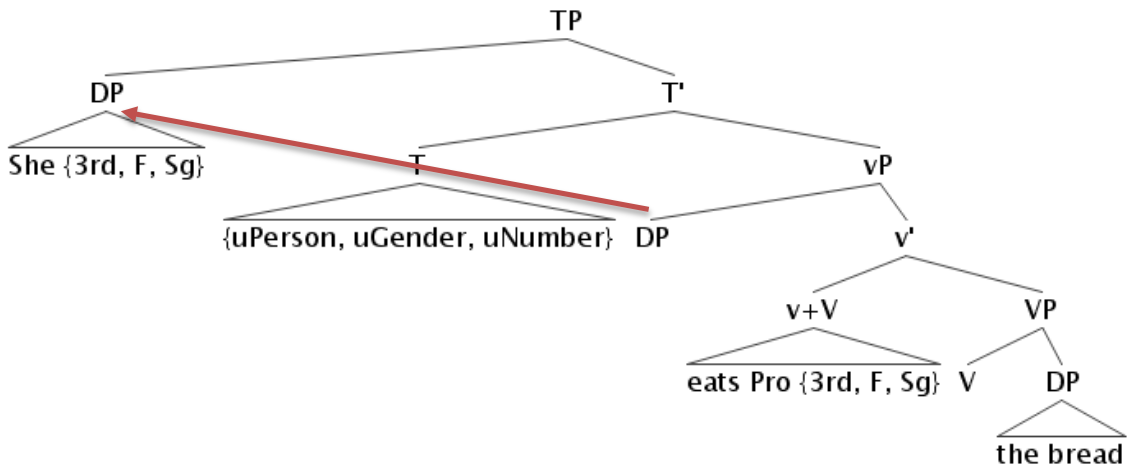
### 5.7.3 Derivation of SVO Sentence with Pronoun Subject

SVO sentences with pronoun subjects have the following derivation. First, *V* moves up to *v* and merges with it, as is shown in (32a). Thus the DP (in this case the pronoun, which it must be noted would make this sentence highly marked, the presence of this pronoun subject would necessarily be contrastive as discussed above) and *v* are in the correct configuration for Reverse Agree to occur. However, since *v* has the full valued features of *pro*, and Reverse Agree can only occur between a valued and an unvalued element, no Agreement takes place. The pronoun DP continues to move and thus moves to specTP to realize the movement triggered by the unvalued feature on *T*, as is shown in (32b). Now it is in the correct configuration to enter into a Reverse Agree relation with *T*'s phi-features, and thus results in full agreement of all phi features, as is shown in (31c).

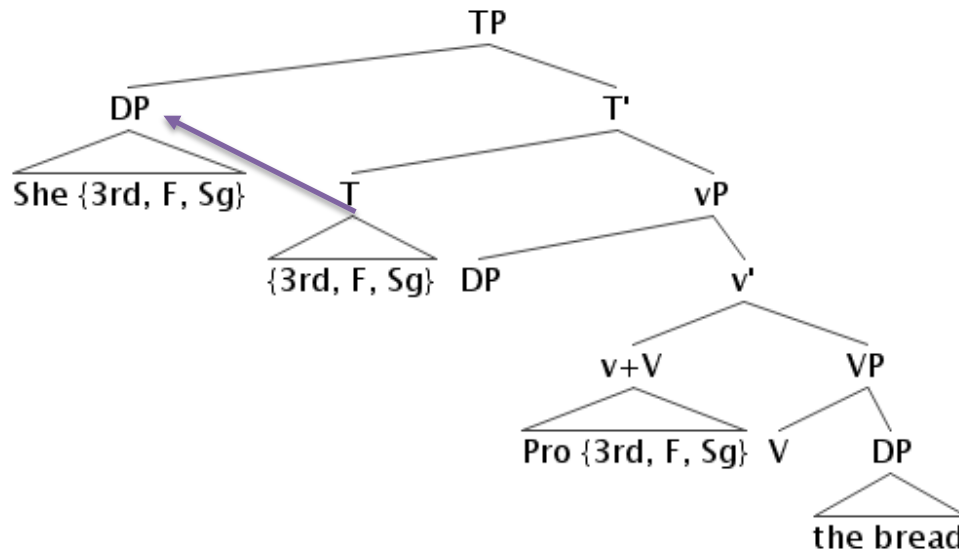
(32) a.



b.



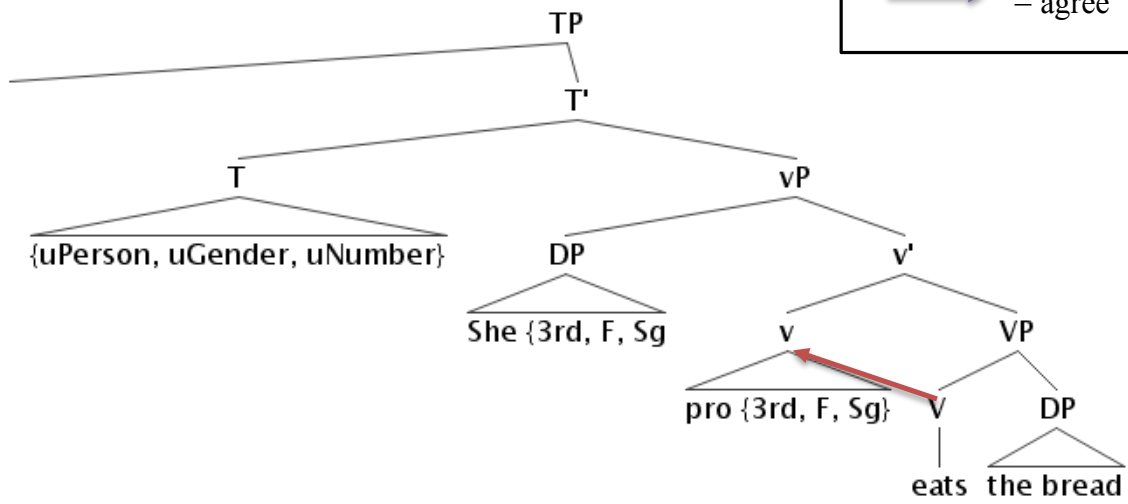
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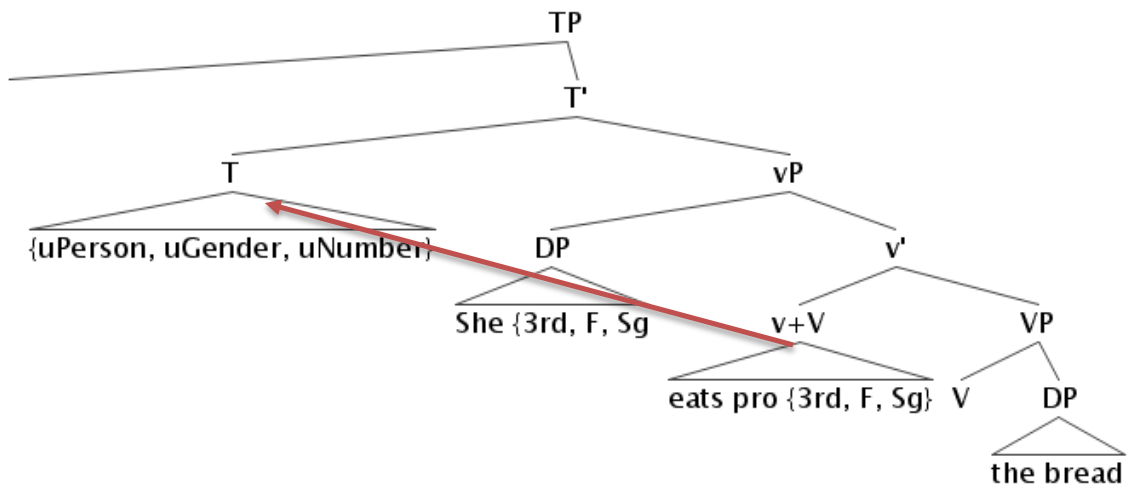
#### 5.7.4 Derivation of VSO Sentence with Pronoun Subject

VSO sentences with pronoun subjects have the following derivation. First, V moves up and merges with v, as is shown in (33a). Thus the DP (in this case the pronoun) and v are in the correct configuration for Reverse Agree to occur. However, since v has the full valued features of *pro*, and Reverse Agree can only occur between a valued and an unvalued element, no Agreement takes place. V+v continue to move up to realize the EPP property, and then merge with T, as is shown in (33b). Since v is fully valued for all phi features (because of *pro*), this results in full agreement, as is shown in (33c).

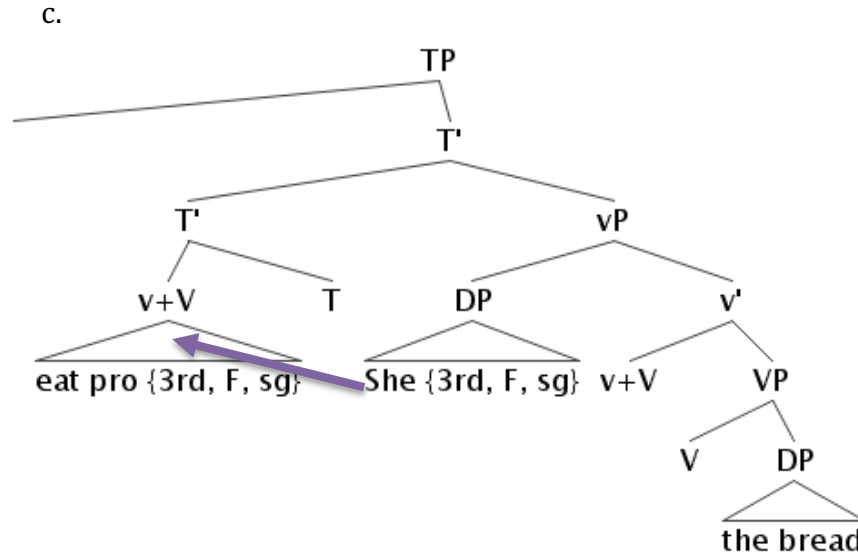
(33) a.



b.







### 5.8 First conjunct agreement

Another issue left unexplained in Wurmbrand and Haddad's (2014) paper is the issue of first conjunct agreement. This is the situation when in a conjunct phrase, the verb only displays agreement with the first member of the conjunct phrase. Conjunct agreement in MSA is such that only the first conjunct agrees with the verb when in VSO order, as it is a head initial language. This is demonstrated in sentences (34a) and (34b), as is shown in the difference between the two, the verb agrees in gender with the first member of the conjunct phrase, either masculine when it is *Kariim* (a masculine name), feminine when it is *Layla* (a feminine name).

- (34) a. Qara?a            Omar wa Aliyaa al-qissa.  
       read.3M.SG.PAST Omar and Alia    the-story.  
       'Omar and Alia read the story'
- b. Qara?at            Aliyaa wa Omar al-qissa.  
       read.3F.SG.PAST Alia    and Omar the-story.  
       'Alia and Omar read the story'

(ABS 1994; 207)

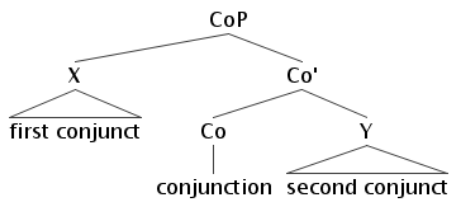
In this case, there is an agreement asymmetry present as well, as discussed previously in this thesis. Although the subject is plural, the verb remains singular. However, this is not the result of the kind of asymmetry discussed above. Instead it is simply a factor of first conjunct agreement. The first conjunct is singular, and so the verb is marked for singular in agreement with that feature.

This phenomenon is discussed in depth by Johannessen (1996), who offers an explanation for agreement asymmetries in conjunction phrases, building on the work presented by Aoun, Benmamoun and Sportiche (1994). Her hypothesis is that the conjunction heads a conjunction phrase (known as CoP). It is crucial to note that this 1996 article is based on the spec head theory of agreement as presented by Chomsky (1995), and not the version presented by Chomsky (2001) or the theory of Reverse Agree presented in Wurmbrand and Haddad (2014).

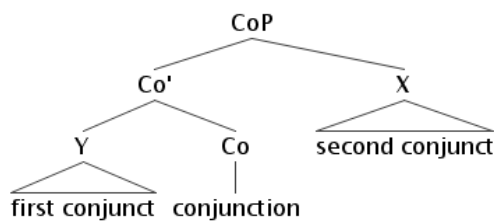
Specifier head agreement is the general principle that agreement occurs between a specifier and its head. The major difference between this theory of Agree and the theory of Reverse Agree I adopt in my approach is the question of directionality. In spec-head agreement, it is the unvalued T head that looks down to find a value head to Agree. In Reverse Agree, it is the opposite, a valued head must look down to find an unvalued head. It is this need for the valued head to be on top that leads to movement.

The conjunction phrase Johannessen (1996) argues for is shown in trees (35a) and (35b). The distinction between the two versions is that (35a) represents how CoPs work in head initial languages, while (35b) represents how CoPs work in head final languages.

(35) a.



b.



Johannessen argues that the conjunction, which is the head of the CoP, is a functional category (an argument that is discussed in greater depth in Johannessen 1993). Based on this fact, she suggests that the spec-head relationship in the CoP represent a unification of features such that the head projects the features of its specifier. Unification, a concept introduced in Shieber 1986, is defined as a situation when two units are combined but do not have conflicting features. Thus spec head agreement is unification, since categories with same features unify while those with conflicting features do not unify. It is necessary to use this unification approach to CoPs because “the conjunction is categorically underspecified until it enters a spec-head configuration,” and if this unification approach is not used it is necessary to assume that there are “as many conjunctions in the lexicon as there are different types of conjuncts” (Johannessen 1996; 670). The top category has fully specified syntactic features, otherwise CoPs could only project what the conjuncts have in common. Thus, the conjunct in spec positions projects its features to the CoP level. However, if only one of the conjuncts has projected its features to the CoP, only one of the conjuncts appears to agree with the verb.

This approach appears to take first conjunct agreement as the norm. However, in some languages, like English for example, the whole conjunction phrase agrees with the verb. For example, sentences like (35a) are grammatical, while (35b) is ungrammatical.

- (35) a. John and Mary are happy  
b. \*John and Mary is happy.

Johannessen (1996) explains this by suggesting that “subject-verb agreement is not subject to syntactic considerations in Standard English” (Johannessen 1996; 69). She suggests that when CoP’s determine Agreement, and the conjuncts have conflicting grammatical features, languages have two strategies of dealing with the situation. First, they avoid the construction (as in Norwegian), or they use “resolution rules” (Johannessen 1996; 69). English employs the second method. Specifically, English employs syntactic or semantic computation, such that the meaning denoted by the conjuncts wins over their grammatical features. In this way, the two singular conjuncts ‘John’ and ‘Mary’ in example (35) take plural agreement.

### 5.8.1 Application to MSA

Conjunct agreement in MSA is such that only the first conjunct agrees with the verb

when in VSO order, as it is a head initial language. This is demonstrated in sentences 34a and 34b, as is shown in the difference between the two, the verb agrees in gender with the first member of the conjunct phrase, either masculine when it is *Kariim* (a masculine name), feminine when it is *Layla* (a feminine name).

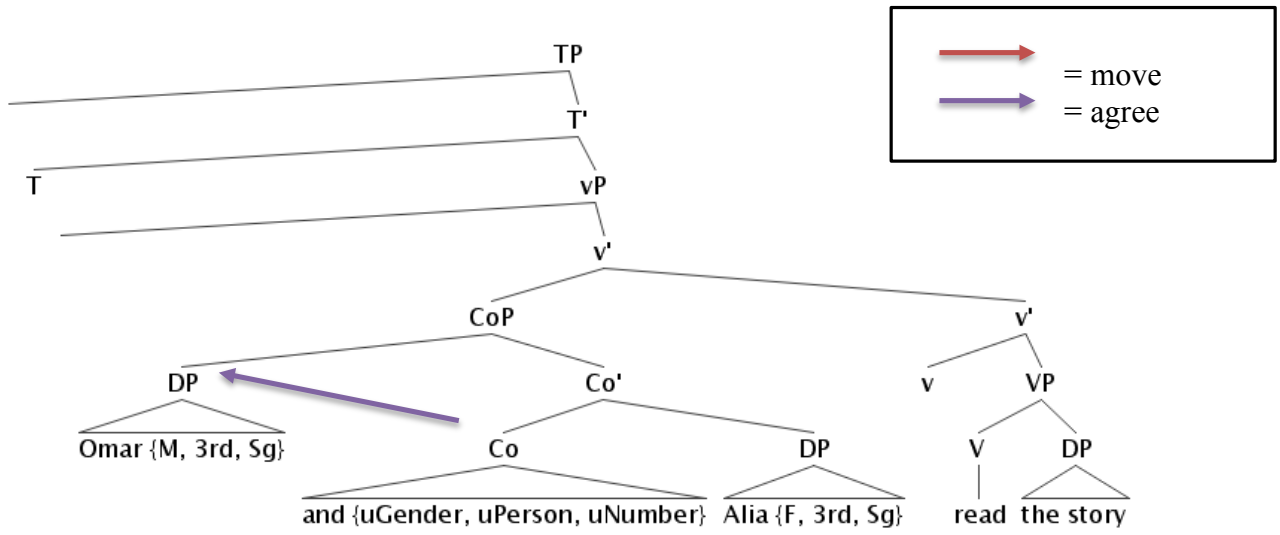
- (36) a. Qara?a                      Omar wa Aliyaa al-qissa.  
           read.3M.SG.PAST Omar and Alia    the-story.  
           ‘Omar and Alia read the story’
- b. Qara?at                     Aliyaa wa Omar al-qissa.  
           read.3F.SG.PAST Alia    and Omar the-story.  
           ‘Alia and Omar read the story’

(ABS 1994; 207)

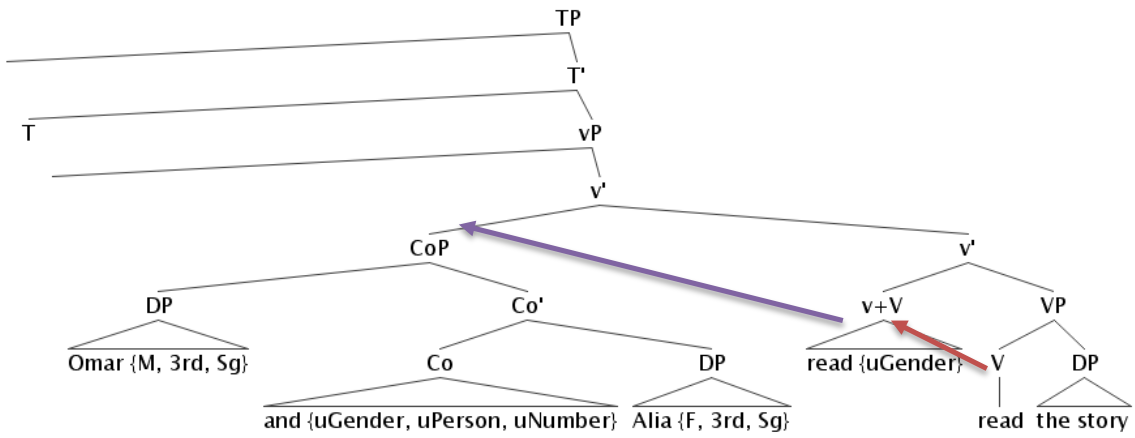
In this case, there is an agreement asymmetry present as well, as discussed previously in this thesis. Although the subject is plural, the verb remains singular.

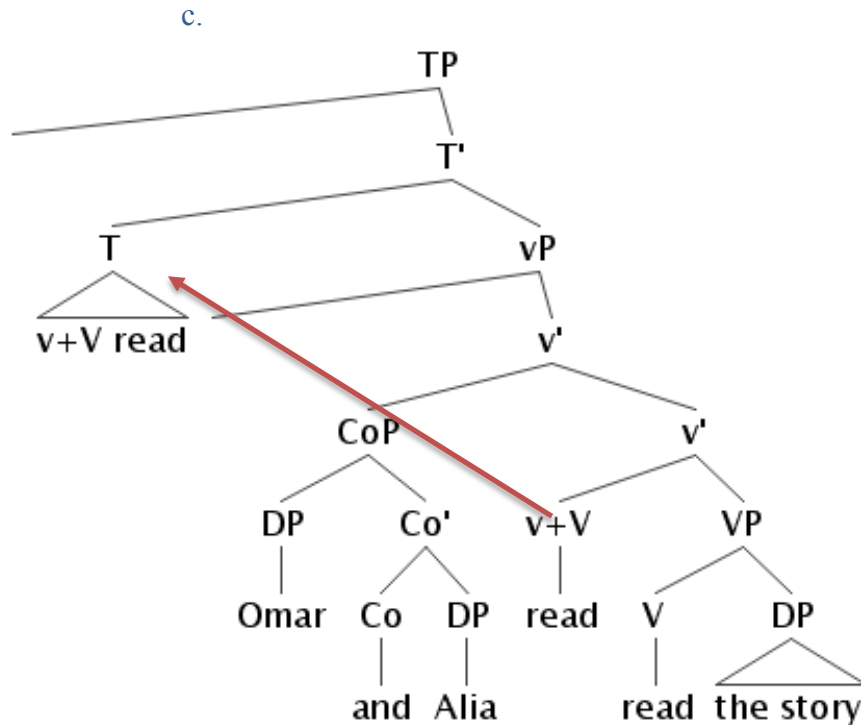
My approach integrates Wurmbrand and Haddad’s (2014) ideas of two different realizations of what they refer to as the EPP property of T (in that it’s unvalued features cause two different kinds of movement) with Johannessen’s (1996) notion of unification in the CoP. Based on this, the derivation of VSO sentences with conjunct subjects is as follows. First, since the conjunct is unvalued, and it is in the correct arrangement for Reverse Agree, the features of the first conjunct go to the head of the CoP, as is shown in (37a). Then the entire CoP gets the features of the first conjunct. V and v merge, as they do in all the derivations described above, as shown in (37b). Thus, the CoP and V+v are now in the correct arrangement for Reverse Agree to occur, as is also shown in (37b). Since the CoP only has the features of the first conjunct, those are the only features for which V+v are valued, but since v is only unvalued for gender, it is only the gender of the first conjunct that is valued. Finally, v+V move to T to realize the EPP, as is shown in (37c).

(37) a.



b.





## 6. Conclusion

In summary, Wurmbrand and Haddad (2014) claim that the unvalued phi-features on T in MSA trigger movement, which they refer to as an EPP feature and can be realized two ways: 1. by  $V \rightarrow T$  movement or 2.  $\text{subject} \rightarrow \text{SpecTP}$  movement. This movement is triggered by an unvalued phi-feature on T, which needs to get valued under a c-command relation. Little v also has unvalued phi-features, however, when  $v'$  merges with the subject, v takes on the features of the subject. In both SVO and VSO ordered sentences, T agrees with the subject either directly, as in the case of full agreement in SVO ordered sentences, or indirectly by Agreeing with the moved little v which in turns Agrees with the subject. This agreement between little v and T is a relationship between two uninterpretable features. The critical difference between the two agreement patterns is that little v only has gender features while T has full phi features. I extended this approach to explain further data in MSA that Wurmbrand and Haddad (2014) neglect to discuss, specifically the case of pronoun subjects and puzzle of first conjunct agreement. Specifically, in both VSO and SVO sentences with pronoun subjects, full agreement is observed. I explain this by hypothesizing that the full phi features of *pro* are realized on v, which is always present when

pronoun subjects are present, allowing for full agreement in VSO sentences. In MSA when there is a conjunct phrase, the verb only agrees with the first item of the conjunct. I explain this by extending Wurmbrand and Haddad's (2014) notion of two different ways of realizing the movement sparked by T's unvalued phi features and Johannessen's (1996) notion of unification in the conjunct phrase.

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