

## A Feature-Based Analysis of the Derivation of Word Order and Subject-Verb Agreement in Arabic Varieties

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### Abstract

The derivation of common clause-type constructions like negation, interrogation (involving wh-elements) and declarativity (including sentences that involve topics) is a universal of sentence structure that involves a number of functional elements/items for the expression of negation, interrogation, or declarativity, cross-linguistically. However, as the present study on the derivation of syntactic word order (including subject-verb agreement configurations) in Arabic varieties shows, such functional elements/items can take a particular functional dimension within the functional domain they are part of. This study relies on sample examples from the literature on Arabic (the standard variety in particular, but also other varieties such as Tunisian Arabic and Moroccan Arabic – see Jouini, (2014) for typical sentences from these varieties) to demonstrate how functional elements can project as functional nodes or be merged as head or specifier (Spec) elements in the structure of sentences. In the inflectional domain of sentences – or Inflectional Phrase (IP) –, variation in subject-verb agreement configurations in Arabic rests on the premise that a **Subject** node variably projects giving rise to differing subject-verb agreement configurations. The same is true of the projection of the complementizer domain of sentences – or Complementizer Phrase (CP) – in Arabic, which splits into dedicated functional nodes in the standard variety of Arabic, but not in the modern spoken dialects. These differences in the projection of the IP-CP continuum establish functional relations upon which agreement and movement operations are derived and such notions as ‘topic’, ‘subject’ and ‘focus’ can be represented at the interface.

*Key words:* features, functional, Standard Arabic, Tunisian Arabic, subject-verb

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## 1. Introduction

The build-up of structures – and the structural (either ‘thematic’ or ‘functional’) relations that operate thereby – is a universal of grammar. There is variation, however, in what languages ‘choose’ to apply, or not, in the derivation of structural configurations.

The analysis proposed here is an attempt to pin down the unit of parametric variation that sets the standard variety of Arabic apart from the modern spoken Arabic dialects.<sup>1</sup> This study relies on the available literature on the sentence structure of Arabic (Standard Arabic (SA) in particular, but also other varieties such as Tunisian Arabic (TA), Moroccan Arabic (MA) and Iraqi Arabic (IA) – see Jouini, (2014)) to demonstrate how functional elements can project as functional nodes or be merged as head or Spec elements in the structure of sentences. Two observations can be made. The first observation is that there is an agreement asymmetry that differentiates Verb-Subject(-Object) (VS(O)) and Subject-Verb(-Object) (SV(O)) word orderings in the standard variety of Arabic that is absent in the dialects. The following examples are from SA and TA:

### (1) VSO word order:

a. kataba            T-Tulaab-u            d-dars-a            (SA)  
wrote.3MS        the-students-NOM    the-lesson-ACC  
‘The students wrote the lesson.’

b. kitb-uu        T-Tulaab        d-dars            (TA)  
wrote-3P        the-students    the-lesson  
‘The students wrote the lesson.’

### (2) SVO word order

a. T-Tulaab-u        katab-uu        d-dars-a            (SA)  
the-students-NOM    wrote-3MP    the-lesson-ACC  
‘The students wrote the lesson.’

b. T-Tulaab        kitb-uu        d-dars            (TA)  
the-students        wrote-3P        the-lesson  
‘The students wrote the lesson.’

Apart from the fact that the modern spoken dialects of Arabic have lost the case morphology that marks the ending of nouns, such as Nominative (**NOM**) Case and Accusative (**ACC**) Case, the data in (1) is significant in that it points to a parametric difference in the realization of subject-verb agreement in such VSO sentences where SA (1a) does not show the same kind of subject-verb agreement we find in TA (1b). In contrast, the realization of subject-verb agreement in the SA sentence in (2a) and the TA sentence in (2b) is the same, as far as the agreement morphology on the verb *katab-uu*, in (2a), and *kitb-uu*, in (2b), is concerned. What is important in the data shown in (1) and (2) is that the agreement morphology on the TA verb does not show the kind of agreement asymmetry between the VSO and SVO word orderings, as in the SA equivalent sentences.

The second observation is that SA makes use of an array of dedicated modal elements (such as modal *qad*, as in example (3)), interrogation particles (such as interrogative *?a*, as in example (4)) and negation markers (such as *lam* and *lan*, as in examples (5–6)), which are absent in the modern spoken dialects.

(3) *qad jaa?-a ?al-?awlaad-u*  
 MOD PERF.come-3MS the-boys- NOM  
 ‘Indeed, the boys came.’

(4) *?a jaa?-a ?al-?awlaad-u?*  
 Q PERF.come-3MS the-boys-NOM  
 ‘Did the boys come?’

(5) *lam yaktub-i T-Tullaab-u d-dars-a* (SA)  
 NEG.PAST 3.IMPERF.write- MS.JUSS the-students- NOM the-lesson- ACC  
 ‘The students did not write the lesson.’

(6) *lan yaktub-a T-Tullaab-u d-dars-a*  
 NEG.FUT 3. IMPERF.write- MS.JUSS the-students- NOM the-lesson- ACC  
 ‘The students will not write the lesson.’

Within such a perspective, the main claim of the present analysis is that the Extended Projection Principle (**EPP**) and some postulated additional – parametrically available – Definiteness-feature (**D**-feature) on **T**(ense) in some Romance null-subject varieties (Biberauer et al., (2010) and Roberts, (2010a)) remain essentially different. Whereas the **EPP** is a universal characteristic of languages linked to syntactic predication within IP, the **D**-feature associated with **T** (though, in the present analysis, not a feature of the **T**-node *per se*) is a parameterized property linked to a rich manifestation of subject-verb agreement and verb-raising (i.e., Verb-to-Tense (**V**-to-**T**) movement). Furthermore, the present analysis maintains that the **D**-feature is associated with **T** only as a result of the raising process that **T** undergoes to a super-ordinate node (bearing the **D**-feature) within the IP domain in the relevant constructions/languages (cf. Rouveret’s, 2010 **T** ‘remerge’ option in a number of Germanic languages where a second Spec position is created for the satisfaction of the EPP).

## 2. Methodology

The paper is organized as follows: In Section 3, the author deals with the framework of basic assumptions in the derivation of sentence structure. Mainly, the author assumes that variation in only one feature (as in Roberts’ (2010a,b) and Biberauer and Roberts’ (2010) postulation of the additional D-feature on T in some language varieties) may give rise to a difference in the derivation and representation of a sentence. As already mentioned, I differ from Roberts’ (2010a, b) and Biberauer and Roberts, (2010) in the assumption that there is an additional functional node that projects above TP – namely, a Subject (**Subj**) projection (cf. Cardinaletti, (2004), Rizzi, (2006)), which bears the postulated additional **D**-feature. A Third main assumption of the present analysis

is that two forms of feature licensing operate in the Grammar: feature-valuation/-checking and the process of ‘identification’. The difference between these two modes of licensing concerns the interpretability of features. There is no ‘checking’/valuation of uninterpretable features within the process of identification. One main case to this effect, discussed in this paper, is the fundamental difference between topic DPs and subject DPs. Unlike subject DPs, topic DPs do not involve **EPP**-related properties, and as such, they are not subject to any ‘checking’/valuation procedure. Nevertheless, topics DPs have subject-like properties. Both subject DPs and topic DPs involve some kind of predication (Rizzi, 2006, p. 122).

In section 4, the author takes up the question of feature licensing (with its two modes, i.e., feature valuation and feature identification, as mentioned above) in the sentence structure of Arabic, and the core concept of structural connectedness expressing what Roberts & Roussou, (2002) call the ‘**T**-dependency’.<sup>ii</sup> The **T**-dependency operates in the valuation of features in agreement and movement processes in common VSO and SVO clause-type constructions – namely, negation, interrogation (involving *wh*-elements, in particular) and declarativity. In this section, the author also addresses the issue of the node to which **T** (after **V**-to-**T** movement applies) raises in SA VSO sentences. On a par with the necessity of raising **T** to a super-ordinate node – namely, **Subj** in rich subject-verb agreement configurations, VSO agreement configurations in SA – exhibiting ‘poor’ or ‘partial’ subject-verb agreement – involve the raising of **T** to a node outside IP/TP in the left periphery, namely Finiteness (**Fin**). This is what the author refers to as the **T**-to-**Fin** raising process, which brings the raised verb closer to the articulated ‘focus’ domain in the split-CP (Poletto, (2000), Benincà & Poletto, (2004))

The author draws up general conclusions at the end of the paper. The paper mainly shows that both the derivation of VSO and SVO word orderings in SA involve different structural configurations than those that are derived in the modern spoken dialects. The facts reviewed and further discussed in this paper suggest that the left periphery of sentences in SA is more active than the left periphery in the modern spoken dialects. The author proposes that SA opts for making wide use of projections (Spec and head positions) in the higher functional structure above IP/TP. In other words, SA opts for splitting up the CP domain into disparate discourse-related projections for the expression of such notions as ‘topic’, ‘focus’, and other modes of expression related to negation and interrogation.

### 3. Framework of assumptions

As the Generative linguistics name of Universal Grammar suggests it, the structure of sentences is universal. This structure takes the general form of CP ... IP ... *v*P (a functional ‘verb’ projection above the lexical VP in sentence structure)..., each of which is a maximal functional projection. Nevertheless, as the following discussion suggests, the particulars of a functional domain (mainly, CP and IP, but less probably *v*P unless an adjunction-to-*v*P analysis is allowed, as in Chomsky, (2001), for the purpose of Object Shift (Holmberg, (1999)) are a matter of parametric variation. Such an analysis might be correct in relation to the derivation of VSO and SVO structural configurations in the varieties of Arabic, such as SA and the modern spoken dialects, such as TA, MA, or IA.

In the spirit of minimalist analyses that study language-particular constructions on the basis of the ‘**T**-dependency’ (Roberts & Roussou, (2002)) – i.e., ‘tense’ and other inflectional properties of sentences that enter into dependency relations and link  $\nu$ P to IP and IP- $\nu$ P to CP – the present analysis seeks to parameterize this structural connectedness in terms of what a language ‘chooses’ to apply, or not, in the derivation of sentences and the agreement processes that obtain thereby.<sup>iii,iv</sup> Thus, in this parameterization view of the derivation of structural configurations, there is variation in the derivation of common clause-type constructions, such as negation, interrogation (involving *wh*-elements, in particular) and declarativity (including sentences that involve sentence-initial DPs that ‘parametrically’ – as in the present analysis – are taken to be topic DPs). These parameterized choices are then taken up by the syntactic operations and processes of the grammar (Merge, Move, and Agree)<sup>v</sup> and generate head-head and Spec-head agreement relations bringing selected items closely together within the functional IP and CP domains for the establishment of ‘functional relations’ (Miyagawa, (2010)). This parameterization idea originates in the assumption that the derivation of sentence structure necessarily involves the Merge (via ‘first’/‘external’ Merge or ‘second’/‘internal’ Merge, in the phase-theoretic terminology of Chomsky, (2004)) of a number of functional elements/items for the expression of negation, interrogation, or declarativity, cross-linguistically. As these functional elements can project as functional nodes (minimal and maximal) in their own right,<sup>vi</sup> and can also be merged in the phrase structure of sentences as head or Spec elements, the principles of the grammar allow languages to differ in the possibility of having one domain, or more, ‘extend’ in a particular shape. These principles also allow for parametric variation to target different elements in the functional part of the lexicon of a language (wherein the build-up of sentences originates).

The present analysis of VSO and SVO configurations focuses on narrowing down the comparative study of the derivation of such sentences to varieties of the same language – namely, languages where Verb-raising necessarily applies – in the case at hand, the comparative analysis mainly concerns SA and the modern spoken dialects. The present analysis shows that the focus on closely-related languages, or dialects of the same language, directs our attention towards the possibility that the parametric variation in question is more adequately conceived as micro-parametric variation (as in Kayne, (2000), or more recently, in Biberauer et al., (2010) and Roberts, (2010a)). In this conception, variation in only one feature (for example, the postulation of an additional **D**-feature on **T** in some Romance null-subject varieties in Roberts, (2010a,b)) may give rise to a difference in the derivation of a sentence or in the representation of an element in it, such as a subject clitic or a subject DP position.

Picking up from studies in SA and the modern spoken varieties on the derivation of VSO and SVO sentences (such as Ouhalla, (1991), Benmamoun, (1992, 2000), Fassi Fehri, (1993), Akkal & Gonegai, (2000), and Soltan (2006)), the present focus on micro-parametric variation suggests that the derivation of VSO sentences (and their SVO counterparts) in such dialects concerns more than the issue of the positioning of the subject as to the position of the raised verb. The analysis of such sentences brings about the important issue of the interaction of verbal inflection with modality and negation (in negation contexts), the status of sentence-initial DPs as subject DPs or topic DPs in SVO word order, and the derivation of non-argument dependencies (i.e., A’-dependencies) particularly involving *wh*-movement, which only involves VSO word order in Arabic. In this



connection, it is important to point out that there is a main difference between the standard variety of Arabic and the modern spoken dialects in that there are dedicated modal and interrogation particles (such as modal *qad* and interrogative *?a*) and negation markers (such as *lam* and *lan*) in SA, which are absent in the modern spoken dialects

A core question within such an approach of the parameters involved in the derivation of VSO and SVO structural configurations in a language variety like SA is the role of ‘functional relations’ (Miyagawa, 2010) that functional elements, such as modal/temporal, focus, and negation elements enter into. Miyagawa, (2010, pp. 8-9), contends that ‘... this intuition that agreement emerges as a Specifier-head (Spec-head) relation is correct...’ and that ‘... agreement requires a Spec-head relation by showing that Agree takes place to establish functional relations’. Thus Miyagawa, (2010) introduces the notion of ‘EPP-triggered movement’ as follows:

“EPP-triggered movement” ... is the type of movement that ... refer[s] to a broader range of movement than just movement of the subject to Spec, TP. Included in this “general” type of “last resort” movement are certain head movements, which I discuss in conjunction with pro-drop, and movement of the A’ variety such as wh-movement (p. x).

In addition to Miyagawa’s (2010) EPP-triggered movement approach, an equally valuable import as to the role of functional relations in structural connectedness in IP and CP comes from work done within the Cartographic conception of derivations (Rizzi, (1997, 2004, 2006)), Benincà & Poletto, (2004), Cardinaletti, (2004) among others), and other work conducted within the late Minimalist conception of sentence structure (i.e., Chomsky’s, (2001), (2004), (2008) ‘Derivation by Phase’ view). Most notably, the author will rely on Roberts’ (2010b) and Biberauer & Roberts’ (2010) parameterized probe-goal-Agree view of subject properties in null-subject languages, and on Roberts (2010a). Of particular importance in this parameterized probe-goal-Agree system is the role of null pronominals (i.e. the D-element *pro* both referential and expletive (EXPL)) as ‘defective goals’. Such null elements are introduced in the derivation because of the need to ‘check’ one feature on the probe – i.e., a **D**-feature on **T** in Roberts’ (2010a, b) and Biberauer & Roberts’ (2010) system. In the present analysis, the **D**-feature is a property of **Agrs** (reformulated as a **Subj** node projecting above **T**; cf. Cardinaletti, (2004) and Rizzi, (2006)). The present analysis is mainly in the spirit of Rizzi’s (2006) assumptions.<sup>vii</sup>

The Cartographic approach sheds light on the ‘discourse’ properties that together with the modal and temporal properties of items link IP to CP. Cartography acknowledges the importance of Spec-head agreement relations, as much as head-head agreement relations, in the derivation of agreement configurations and movement operations or what Miyagawa, (2010) calls ‘functional relations’. Cartography postulates that CP properties are scattered over a number of nodes within CP (the Split-CP approach). This system of Spec-head and head-head relations forms sublayers with dedicated Spec and head positions and is involved in the expression of such notions as ‘topic-comment’ and ‘subject of a clause’ particularly related to EPP satisfaction (Miyagawa, (2010), pp. 7–8), in addition to other modes of expression such as ‘focus’, which particularly involves wh-movement. According to Miyagawa, (2010, p. 9), this result can only be implemented by the

combination of the two independently motivated operations of the grammar – namely, Agree and Move.

The licensing principles generally operating in the grammar take two general forms, which might interrelatedly work in agreement processes or might apply separately (one applies and the other is dispensed with) for the particular agreement configuration in question. The first mode of feature licensing takes the form of a valuation (*inter alias* ‘checking’) process, which is mainly operative in wh-dependencies, but also in the **EPP**-related dependency involved in subject-verb agreement. The second form of feature licensing is the process of ‘identification’, whereby a feature needs to be identified via head-head agreement for the satisfaction of the **T**-dependency at the interface – i.e., at Logical Form (LF) and Phonetic Form (PF). Ever since Chomsky’s (1995) feature-checking approach, the notion of ‘interpretability’ has been a core concept in all Minimalist approaches, and on an equal footing, it has been an important aspect of Cartographic explanations. The only difference is that the main focus of Cartography is on ‘identification’ in the Grammar. As Rizzi (2004, pp. 5–6) states, both approaches focus on the economy, locality, and licensing principles that operate in the Grammar for the well-formedness of sentences at the interface. Thus, the only difference between these two modes of licensing (feature valuation and feature identification) is whether a feature needs to be eliminated or deleted from the derivation before it reaches the interface due to the assumption that features can either be ‘interpretable’ or ‘uninterpretable’. As far as the present analysis is concerned, the licensing of modal/temporal and negation (**Neg**) elements in the T-dependency is largely a question of identification unless some contrastive focus (**Foc**) feature is involved.

The next section deals with the question of feature licensing in the sentence structure of Arabic, and the core concept of structural connectedness in terms of **T**-dependency. The **T**-dependency operates in the valuation of features in agreement and movement processes in common VSO and SVO clause-type constructions. These constructions involve interrogation (wh-elements, in particular), negation, and declarativity (i.e., sentences that involve sentence-initial DPs that are, as in the present analysis, ‘parametrically’ taken to be topic DPs, which is the case in SA as opposed to the modern spoken dialects).

#### 4. Feature licensing in the sentence structure of Arabic

In this section, the author proposes the working hypothesis that at least some languages project sentence structure as **SubjP** (*inter alias* **AgrsP**) rather than as IP/TP. This hypothesis finds support in the parameterized probe-goal-Agree system that postulates the importance of both Move and Agree, and of Spec-head agreement as much as head-head agreement in the derivation of IP and CP in sentence structure.

##### 4.1 EXPL *pro* and the feature-based dependency relations in the derivation of subjects

In this section, the author begins by looking at evidence from the literature on null pronominals of the existence of *pro* (most particularly, the EXPL null category of null-subject languages (Rizzi, (1982), and subsequent work), and the existence of the functional head category

**Subj/Agrs** that projects higher than TP. It is then further argued that this functional head is only parametrically available.

Rizzi (2006, pp. 124–125) mentions such examples as in (7)–(9). The examples in (7) for Italian, and (8), (9) for English are Rizzi's (2006) (his (65) for Italian, and (66), (67) for English, respectively):

(7) a. Chi credi                che verrà?  
      who do you think that will come

b. Credo che verrà        Gianni  
      I think that will come Gianni

c. Chi credi [che [*pro* verrà t]]

(8) a. I think that [something is [t in the box]]

b. I think that [there is [something in the box]]

(9) a. \*What do you think that t is in the box?

b. What do you think that there is t in the box?

Rizzi (2006) is concerned with the assumption that the thematic subject is able to avoid moving to the EPP position, and escape the 'freezing effect' of moving to what Rizzi, (2006) calls a 'criterial' position. This follows from the fact that this position is already occupied by an expletive where it satisfies the **EPP**. Thus, the thematic subject is free to move from [Spec, *vP*], which is accessible to movement. In Rizzi's (2006) own words:

If DP is raised to Spec, **Subj** to satisfy the Subject Criterion, it is frozen there, and is not able to escape the 'freezing effect'. Further movement as in (67a) is impossible. If the Subject Criterion is fulfilled by the expletive as in (66b), the DP subject of the small clause is accessible to further movement (p. 125).

Rizzi (2006, pp. 122–123) follows Cardinaletti, (2004) in assuming a functional head in the higher functional field, which determines what he calls 'the Subject Criterion'. The Subject Criterion is the expression of a structural articulation between 'subject' and 'predicate', which is similar to – but still different from – the topic-comment articulation in that the Subject Criterion can be satisfied by the insertion (or movement) of an expletive to the Spec position of **Subj**. The Topic-comment articulation does not fulfill this requirement. Note that while Cardinaletti, (2004) assumes that there are two nodes – namely **Subj** and **Agrs** (both with a Spec position) –, which project above TP, Rizzi (2006) does not make the same difference between **Subj** and **Agrs** in the higher functional IP field as Cardinaletti (2004) does. For him, there is the **EPP**-carrying functional head category (i.e., **Subj**) and, in addition, there is the head that carries the Agree features (i.e.,



**Agrs**, which compares to **T** in Chomsky, (1995, 2001, 2004)). He also allows *pro* to occupy [Spec, **Subj**], which Cardinaletti, (2004) does not. Rizzi, (2006, p. 121) assumes that ‘a single head cannot carry a complex feature specification, allowing it to enter into an Agree relation with a phrase and at the same time attract another phrase’. He adds: ‘I use the label Agr to designate the head carrying the agreement features, without committing myself to the existence of an independent Agr head.’ Thus for Rizzi, (2006, p. 121), in structure (10) below (Rizzi’s (53)), Agr would be similar to **T** in Chomsky, (1995, 2001, 2004), i.e., the inflectional head that carries the Agree features transmitted to it by C (together with the **EPP** feature as in Chomsky, (2008, pp. 144–149, 157)):

(10) . . . EPP . . . Agr . . . DP1 . . . DP2

This section has shown that the postulation of a **Subj(P)** projection can be linked to the availability of a **D**-feature that not only represents a defining property of the null pronominal element *pro* (EXPL or referential),<sup>viii</sup> but also a defining property of the functional head itself (i.e., **Subj**). The **D**-feature is associated with such elements as *pro* in null-subject languages, or *there* in English in the process of feature-valuation. On this account, both EXPL elements *pro* and *there* share the property of entering the derivation with an intrinsic interpretable **D**-feature (different from the **EPP**-feature), which matches an uninterpretable **D**-feature (a [*u***D**]-feature) on the probe **Subj** within the **T**-dependency. Thus, the end product at the interface is that Tense interpretation is satisfied and subject-verb agreement configurations are ultimately well-formed.

#### 4.2 The role of the T-dependency in the derivation of SVO sentences in SA and TA

The bracketed structure in (11) illustrates the derivation of SVO sentences in SA:

(11) SA SVO word order

[<sub>ForceP</sub> Force[<sub>TopP</sub>[<sub>topic DP</sub>] [**Top** . . . [<sub>SubjP</sub> [*pro*<sub>k</sub>] V<sub>i</sub>-V<sub>j</sub>-T<sub>h</sub>-**Subj**] [<sub>TP</sub> T<sub>h</sub> [<sub>VP</sub> [<sub>tk</sub>] [<sub>Vj</sub> [<sub>VP</sub> V<sub>i</sub> ]]]]]]]

In the SA SVO structure (11), the preverbal subject DP is base-generated in a ‘topicalized’, left-dislocated position (i.e., in the [Spec, **TopP**] position of Rizzi’s (1997) split-CP system).<sup>ix</sup>

In contrast, the derivation of SVO sentences in TA is represented as in (12):

(12) TA SVO word order

[<sub>CP</sub> C [<sub>SubjP</sub> [<sub>subject DP</sub><sub>k</sub>] V<sub>i</sub>-V<sub>j</sub>-T-**Subj**] [<sub>TP</sub> T<sub>h</sub> [<sub>VP</sub> [<sub>tk</sub>] [<sub>Vj</sub> [<sub>VP</sub> V<sub>i</sub> ]]]]]]]

The subject DP in TA SVO word order is raised out of [Spec, *v*P/VP] and internally merged in [Spec, **SubjP**].

According to these bracketed representations, SA micro-parametrically differs from a modern spoken dialect like TA in the representation of the sentence-initial DP. However, both SA and TA SVO sentences have **SubjP** as the highest maximal projection at the IP level (with T raised to **Subj** forming the V-*v*-T- **Subj** complex). As structure (12) shows, the sentence-initial DP in TA in [Spec, **SubjP**] is directly responsible for satisfying the **EPP** and subject-verb agreement. The [*u***D**]-feature of **Subj** is also valued by the same process so that the **T**-dependency is fully identified at Spell Out at PF for the phonetic realization of the sentence. Full subject-verb agreement ensues.

In SVO sentences in SA, the sentence-initial DP in SA is essentially a topic DP base-generated in the Spec position of a **Top** head in the left periphery of IP (= **SubjP**), the [*u*D]-feature of **Subj** is valued by the null referential *pro* **D**-element merged in [Spec, **SubjP**] co-referential with the topic DP. Merging this null pronominal **D**-element in [Spec, **SubjP**] is a necessary derivational step in such SA SVO structural configurations both at the IP level, and in CP where the sentence-initial DP is merged in [Spec, TopP]. At the IP level, merging *pro* in [Spec, **SubjP**] is necessary as it links the valuation of the uninterpretable [*u*D]-feature on **Subj** to  $\phi$ -feature specification via the licensing of the Agree features on T as the inflected verb raises to T-**Subj** (ultimately forming the V-*v*-T-**Subj** complex). As mentioned above in relation to the Subject Criterion, the **EPP**-feature of T is also satisfied by the same raising process since both the [*u*D]-feature on **Subj** and the **EPP**-feature on T are valued in the same position – i.e., [Spec, **SubjP**] – by the interpretable **D**-feature on the pronominal. At the CP level, the interpretable **D**-feature on **Top** and the sentence-initial DP merged in [Spec, TopP] are now linked to the V-*v*-T-**Subj** complex in relation to subject-verb agreement. The purpose of such processes in the derivation of SA SVO sentences is to satisfy identification of the **T**-dependency at Spell Out at the point in the derivation where *pro* is merged in [Spec, **SubjP**]. Base-generating the sentence-initial DP in [Spec, **TopP**] in the split-CP domain (instead of moving it to that position) is also basically a process by which the **T**-dependency is identified at the interface.<sup>x</sup>

#### 4.3 The role of the T-dependency in the derivation of VSO sentences in SA and TA

##### 4.3.1 Different realizations of subject-verb agreement in VSO sentences in SA and TA

Biberauer and Roberts (2010, p. 265) point to the necessity of ‘distinguishing **T**’s tense properties (i.e., ‘verbal’ or V-related) from its agreement  $\phi$ - (i.e. ‘nominal’ or D-related) properties ...’. Abiding by the feature-valuation mechanism such a distinction is linked to, the process of verb-raising to the inflectional domain of sentence structure concerns primarily the relation between **T**’s unvalued V-features and V’s unvalued T(ense)-features. Nevertheless, this process, whereby tense inflection is appropriately interpreted at the interface, arises concomitantly with the process whereby  $\phi$ -agreement between the subject DP and the verb arises in the IP domain.

In the probe-goal-Agree system of structural dependency relations that parametrically vary according to the feature structure of functional categories, the interrelatedness of these, nonetheless, distinguishable processes presupposes that V-raising (i.e., the raising of the inflected verb) *per se* does not determine the kind of subject-verb agreement we find in richly-inflected V-raising languages. As discussed in this paper in relation to Roberts’ (2010a) and Roberts & Biberauer’s (2010) arguments for a parameterized probe-goal-Agree system, raised verbs will still be involved in the ‘valuation’ procedure at Spell Out whereby the derived structure is transferred to both LF and PF for interpretation. This is so because V-raising is an integral part of the process by which the **T**-dependency is derived in sentence structure. Therefore, any raising process in the grammar will have to be involved in some valuation procedure and will have to have a bearing on interpretation at LF.

The literature review presented in section 3 dealt with the structural underpinnings for a micro-parametric analysis of both VSO and SVO word orderings in Arabic, whereby SA differs from a modern spoken Arabic dialect like TA in the representation of the subject position at the interface

in both of these constituent orderings. In TA SVO and VSO word orders, the subject DP is systematically represented as the canonical subject of the sentence: it is either raised out of [Spec, vP/VP] and internally merged in [Spec, **SubjP**] in SVO sentences, or it remains *in situ* in [Spec, vP/VP] in VSO sentences, leaving the canonical subject position [Spec, vP/VP] to be filled by the EXPL *pro*.

As far as the derivation of VSO sentences is concerned, full subject-verb agreement in TA sentence in (13) below contrasts with ‘partial’ subject-verb agreement the SA sentence in (14):

(13) bʕath-u n-nsaa l-jwaab (TA)  
sent-3P the women the-letter  
‘The women sent the letter’

(14) baʕatha-t n-nisaaʔ-u r-risaalat-a (SA)  
sent-3FS the women-NOM the-letter-ACC  
‘The women sent the letter’

According to the probe-goal-Agree parameterized analysis, the **T**-node in (13) is directly associated with the **Subj** node, thus directly linking  $\phi$ -feature agreement specification (person, number and gender) on the raised verb to tense interpretation at Spell Out. The valuation of **T**’s **EPP**-feature – in [Spec, **SubjP**] – operates via the same head-head/Spec-head agreement relation. As for the SA sentence in (14), the working hypothesis is that **Subj** is not projected in VSO sentences in SA. Since **T** is not directly associated with a **Subj** node, the highest Spec position for  $\phi$ -feature and **EPP**-feature valuation in the IP domain is [Spec, TP]. As will be discussed in section 4.3.2, the verb raised to T, in SA VSO sentences, is further raised past the subject DP in [Spec, TP] to some *F* head position. In such instances, the raising of the verbal inflectional [V-v-T] complex is linked to the identification of some feature in the split-CP domain.

Under such assumptions as to the differences in the realization of the T-dependency in Arabic, an account of the parametrically different subject-verb agreement configurations that arise in the derivation of VSO sentences in SA and the corresponding sentences in TA, at the IP level, in terms of a parameterized probe-goal-Agree approach to feature-valuation finds a justifiable explanation. The following sentences in (15a, b) and (17a), from SA, corresponding to those in (16a,b) and (17b), from TA, show such differences in agreement configurations:

(15) a. kharaj-a/\*kharaj-uu l-ʔawlaad-u (SA)  
went out-3MS/went out-3MP the- boys-NOM  
‘The boys went out.’

b. kharaj-at/\*kharaj-na l-banaat-u.  
went out-3FS/went out-3FP the-girls- NOM  
‘The girls went out.’

(16) a. kharj-uu/\*kharaj l-ulaad (TA)  
went out-3P/went out-3MP the-boys

‘The boys went out.’

- b. *kharj-uu/\*kharj-t*            *l-bnaat*.  
 went out-3P/went out-3FS the-girls  
 ‘The girls went out.’

- (17) a. *man qaala ʔinna-hu ʒaaʔa l-ʔawlaad-u?*            (SA)  
 who said that-CL(ACC) came.3MS the-boys-NOM  
 ‘Who said that the boys came?’

- b. *shkuun qaal illi jaa-w l-ulaad?*            (TA)  
 who said that came-3P the-boys  
 ‘Who said that the boys came?’

In the absence of **Subj**, in the SA sentences in (15a, b), the full set of  $\phi$ -feature specification on the [V-*v*-T] inflectional complex does not appear (*kharaj-a* vs. *\*kharaj-uu* in (15a) and *kharaj-at* vs. *\*kharaj-na* in (15b)). The [V-*v*]-to-T raising process is necessarily involved in some subject-verb agreement which is linked to the satisfaction of the **EPP** at the highest level the derivation reaches in the IP domain, i.e., [Spec, TP]. It is in this position that the raised subject DP values the uninterpretable  $\phi$ -features of the **T** node giving rise to the so-called, 3<sup>rd</sup> person singular ‘default’ agreement configuration. In the TA sentences in (16a, b), the inflected verb is under a **Subj** projection, which is responsible for the full agreement pattern (*kharj-uu* vs. *\*kharj* in (16a) and *kharj-uu* vs. *kharj-t* in (16b)).

In the wh-questions in (17), the same subject-verb agreement relations apply. In the SA wh-question in (17a), the verb (more specifically, the [V-*v*] complex) first raised to **T** agrees with the subject DP raised to [Spec, TP], where valuation of the uninterpretable  $\phi$ -features of **T** by the subject DP applies. This probe-goal Agree relation only gives rise to ‘partial’ subject-verb agreement (*jaaʔa*). The **EPP** is, nonetheless, satisfied as a reflection of the probe-goal-Agree relation. Since in the derivation of such VSO sentences as in (15) (and, likewise, in the wh-construction in (17a)) SA opts for expanding the CP domain into **Fin** and **Force** (à la Rizzi 1997) – where the **Top-Foc** system is activated –, the inflected verb further raises to some *F* node in the split-CP domain. In the TA wh-question in (17b), however, the raising of **T** to **Subj** applies, and the raised verb agrees with an EXPL *pro* merged in [Spec, **SubjP**] giving rise to full subject-verb agreement (*jaaw*) at Spell Out.

With this contrast between the subject-verb agreement examples in (16a, b) and (17b) for TA and those in (15a, b) and (17a) for SA in mind, the structure in (18) below is a representation of how SA VSO word order arises (*F* designates the Functional projection in CP to which the V-*v*-T complex raises):

- (18) SA VSO word order  
 [<sub>FP</sub> V<sub>i-vj</sub>-T<sub>h</sub>-F ... [<sub>TP</sub> [DP<sub>k</sub>] T<sub>h</sub> [<sub>VP</sub> [Spec t<sub>k</sub>] v<sub>j</sub> [<sub>VP</sub> V<sub>i</sub> DP]]]]

SA VSO word order differs from the VSO word order in a modern spoken dialect like TA in that only in SA is the subject raised out of  $vP/VP$ . Thus, in (18), the post-verbal status of the subject in SA VSO word order is derived by first raising the verb to **T**. As (18) shows, expletive *pro* is not instantiated in the highest Spec position in the IP domain for **EPP** satisfaction (i.e., [Spec, TP]). Instead, the derivation of the sentence requires the subject to raise to [Spec, TP] for **EPP** satisfaction. Finally, the verb is further raised (together with  $v$  and **T**, to which the verb has attached) – past the subject DP in [Spec, TP] – to some node *F* in the split-CP domain of Rizzi (1997). The post-verbal position of the subject in SA VSO word order is thus derived. Only ‘partial’ subject-verb agreement ensues.

In contrast, in the TA VSO word ordering, whereas the verb is raised to the inflectional domain (projecting as **SubjP**), the subject DP remains *in situ* in [Spec,  $vP/VP$ ] in a post-verbal position, as represented in (19):

(19) TA VSO word order

[<sub>CP</sub> C [<sub>SubjP</sub> [*pro*] V<sub>i-v<sub>j</sub></sub>-T-**Subj** [<sub>TP</sub> T<sub>h</sub> [<sub>vP</sub> [Subject DP] [<sub>v<sub>j</sub></sub> [<sub>vP</sub> V<sub>i</sub> ]]]]]]]

In relation to the TA VSO structure (19), my assumption has been that, contrary to SA VSO sentences, the derivation of TA VSO sentences requires the projection of **SubjP** for expletive *pro* insertion in [Spec, **SubjP**] coinciding with the valuation of **T**'s **EPP**-feature in the same position, due to the fact that **T** is now part of the verbal inflectional complex V- $v$ -**T** raised to the **Subj** node. As represented in (19), the verbal inflectional complex V- $v$ -**T** does not raise further up. This follows from Rizzi's (2006) Subject Criterion because all the conditions for subject-verb agreement have been satisfied at that level in IP (= **SubjP**) as the inflected verb receives the full  $\phi$ -agreement specification after the Agree features on **T** have been valued in [Spec, **SubjP**].

As in Roberts' (2010a, p. 114) typology of ‘clitic doubling’ configurations in the Romance null-subject systems that Roberts (2010a) is interested in, the differences in subject-verb agreement configurations in SA and TA may ultimately be linked to how the process of feature-valuation applies at the highest level of the derivation of the IP domain in relation to **T**'s **D**-feature (the **D**-feature of the **Subj** node in the present analysis).<sup>xi</sup> Assuming that feature valuation involves some ‘feature copying’ mechanism as in Roberts, (2010a, p. 114), the process of valuation of the additional **D**-feature brought about in the derivation of the IP domain in SA VSO word order does not occur (due to the absence of EXPL *pro* and the absence of **Subj** node in these instances in SA). The process of valuation in this case may involve only ‘partial copying’ of the subject agreement features, in SA, as opposed to ‘full copying’ of those features in TA. This difference in ‘feature copying’ would account for the difference in the feature-valuation mechanism in subject-verb agreement configurations.

#### 4.3.2 The T-to-Fin raising process in SA VSO sentences

This section addresses the problem of what node the inflected verb in SA VSO configurations could ultimately raise to, if not **Subj**, after it raises above TP. The discussion will focus on the



distribution of tense/modality properties (i.e., preverbal particles, such as modality and negation markers), and on the distribution of subject properties in relation to agreement on verbs.

As far as the head position the raised verb in VSO sentences in SA attaches to in the CP domain is concerned, Aoun et al., (1994, p. 204, fn. 8, see also Aoun et al., (2010)) suggest that this head node is similar to Laka's (1990, p. 100)  $\Sigma$  (accommodating both negation and emphatic affirmation) or a head F 'whose effect is to focalize the verb' – namely, some Focus head. The evidence Aoun et al., (2010, pp. 70–71) provide for the raising of (auxiliary) verbs in SA to a higher node than the highest functional head in the IP domain – i.e., T – comes from existential constructions involving the locative pro-form *hunaaka* 'there', as in (20), with a representation as in Figure 1 (Aoun et al.'s 2010, p. 71 (63)):

- (20) *kaan-a hunaaka Taalib-un fii l-Hadiiqat-i* (SA)  
 PERF.be-3MS there student.INDEF-NOM in the-garden-GEN  
 'There was a student in the garden'

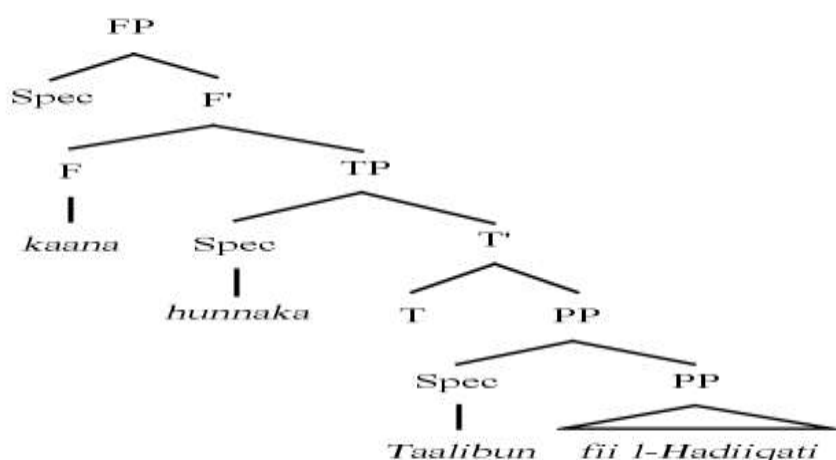


Figure 1 Existential constructions in SA (Aoun et al., 2010, p. 71 (63))

As Figure 1 shows, the functional head position the SA auxiliary verb *kaana* 'be.Past' in VSO word order occupies is higher than TP, the latter being for Aoun et al. (2010) the highest projection in the IP domain in such VSO structural configurations. The auxiliary verb *kaana* appears in F to the left of the locative pro-form *hunnaka* which is merged in [Spec, TP].

Aoun et al., (2010, p. 215–216) assume that FP, in SA, can be designated as Rizzi's (1997) FocusP. However, in light of an extended cartographic analysis of the split-CP domain (as proposed by Jouitteau 2005: 126 who adapts the analysis proposed by Poletto 2000: 236–237; see structure (21) below), the verb in SA VSO configurations does not move higher than the modal head node or higher than Neg elements, which project higher than TP (and FinP) but below FocP). This is attested by the sentences in (22)–(24):

(21) [<sub>ForceP</sub> [<sub>Hanging TopicP</sub> [<sub>Scene setting</sub> [<sub>Force</sub> [<sub>TopP</sub> **Topic** [<sub>FocP</sub> **Focus [<sub>Mod(al)P</sub> **Neg** [<sub>FinP</sub>... ]]]]]]]]]  
 ‘higher Topic sublayer’ ‘lower Topic sublayer’ ‘Focus sublayer’  
 Neg [<sub>FinP</sub>... ]]]]]]]]]**

(22) lam yaktub-i T-Tullaab-u d-dars-a  
 NEG.PAST 3.IMPERF.write- MS.JUSS the-students- NOM the-lesson- ACC  
 ‘The students did not write the lesson.’

(23) lan yaktub-a T-Tullaab-u d-dars-a  
 NEG.FUT 3. IMPERF.write- MS.JUSS the-students- NOM the-lesson- ACC  
 ‘The students will not write the lesson.’

(24) qad jaaʔ-a ʔal-ʔawlaad-u  
 MOD PERF.come-3MS the-boys-NOM  
 ‘Indeed, the boys came.’

Structurally representing sentence (22), for example, gives the tree diagram in Figure 2:

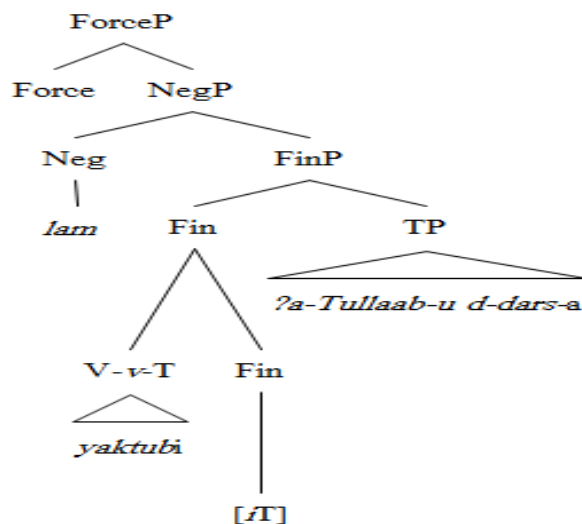


Figure 2 T-to-Fin raising process in SA VSO sentences

The feature that is involved in the ‘identification’ of the negation elements *lam* and *lan* is a tense feature – namely, the interpretable tense (i.e., the [*i*T]-feature) of the **Fin** head projection as represented in Figure 2 with which negation marker *lam*, as a head that projects in sentence structure in its own right, interacts. The same is true of the relation of the negation elements *lam* and *lan* and the T node since the identification of [*i*T]-features of **Fin** and **T** is essential for tense interpretation at the interface.

The head position of ForceP can remain empty, but can be occupied by a matrix interrogative particle *?a*, as represented in Figure 3 for sentence (25):

- (25) *?a jaa?-a            ?al-?awlaad-u?* (SA)  
 Q PERF.come-3MS the-boys-NOM  
 ‘Did the boys come?’

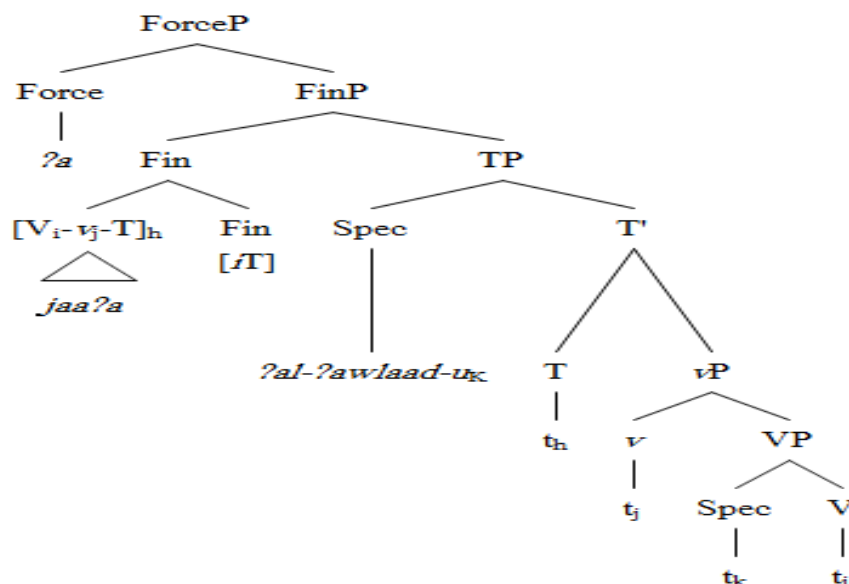


Figure 3 Matrix interrogatives in SA

The realization of the Force head in Figure 3 as *?a* signals that the sentence is interpreted as interrogative at the interface. The dependency relation between the higher and the lower C projections at the two opposite sides of the split-CP system (i.e., Force and **Fin**) ensures that all elements involved in the representation of the sentence at the interface are properly identified. According to such assumptions, feature identification does not exclusively apply to interrogative particles like *?a* in SA in relation to the inflectional properties of the **Fin** head. Rather, this feature identification process generalizes to any element moved to or directly ‘merged’ in some position in the split-CP domain (cf. Ouhalla, (1993, 1994), Roberts & Roussou, (2002)).

In this connection, Aoun et al., (2010, pp. 209–210) refer to Ouhalla’s (1994) “morphological identification” requirement pointing out that a parallel can be drawn between Focus fronting and question formation in SA. Aoun et al., (2010, pp. 209–210) suggest that the parallel between Focus and interrogative structures does not uniquely concern the projection of a designated functional projection in the CP domain, but also designated particles that can be merged in their respective positions to morphologically identify the sentence as a sentence with some ‘focus’ property or as an interrogative sentence in terms of ‘an abstract head F, bearing the [+F] feature, which on a par

with the [+Q(uestion)] feature on C, needs to be identified'. Thus, in the derivation of (25), the identification of [*i*T] features interacts with the identification of clause-type features for singling out the sentence as 'interrogative', as opposed to 'negative' in negation contexts or, simply, 'declarative' in [+declarative] contexts. As for the formal feature that enters in to the derivation of SA wh-dependencies and their representation at the interface, it takes the form of an additional [WH]/Focus feature, different from clause-type features of Force and **Fin**'s [*i*T] feature. This additional [WH]/Focus feature accounts for the XP raising process to Spec position of the Focus head involved in the derivation of these wh-dependencies.

The evidence provided by such examples as (22–25) sheds light on the premise of the present probe-goal-Agree parameterized analysis whereby the derivation of wh-dependencies in SA fully exploits the different Spec and head positions that arise from the splitting of the CP domain and the merge of such dedicated modal and interrogation particles as modal *qad* and interrogative *ʔa*, and such negation markers as *lam* and *lan* in such SA sentences. Such particles and markers are absent in the modern spoken dialects, and as a result these dialects do not resort to specific head or Spec C-positions. The assumption is that the modern spoken dialects of Arabic make use of adjunction of A'-moved elements to the left of **SubjP** (see the examples in (27) and (28) below).

In the SA wh-questions in (26) below, only (26a) (structurally represented as in Figure 4) is grammatical (For ease of exposition, I do not represent the FinP and ForceP projections in Figure 4 in the split-CP domain of the structure):

- (26) a. ʔal-ʔabaaʔ-u     man ya-Drib-uuna?                                         (SA)  
the-parents-NOM    who 3-INPERF.hit-MP.IND  
'Parents, who do they hit?'
- b. \*man ʔal-ʔabaaʔ-u     ya-Drib-uuna?  
who the-parents-NOM 3- INPERF.hit- MP.IND  
Lit.: 'Who, parents, do they hit?'

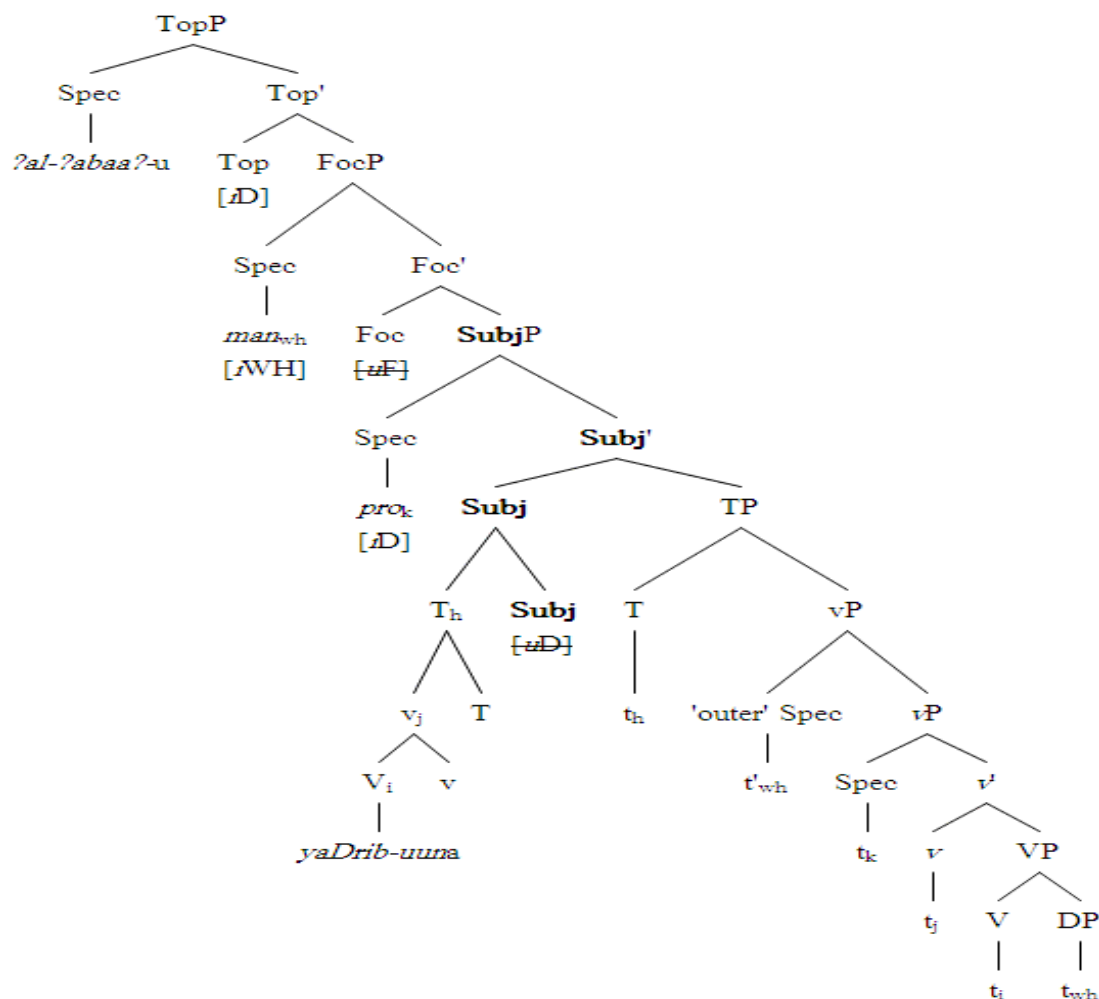


Figure 4 wh-movement in SA

In Figure 4, the initial DP *?al-?abaa?-u* ‘parents’ is base-generated in [Spec, TopP] in the split-CP domain, resumed in the IP domain by the subject inflection on the verb *yaDrib-uuna* ‘they hit’. The topic DP is co-referential with a ‘resumptive’ *pro* raised out of the subject position in [Spec, vP] for EPP satisfaction at the **Subj**/Agr<sub>S</sub>P level. The structure also shows the wh-movement of an object DP, which lands in [Spec, FocP]. In this respect, the uninterpretable [WH]/Focus feature [*uF*] of Foc is valued in relation to the interpretable wh-feature [*iWH*] of the raised wh-element. In much the same way, the [*uD*] feature of **Subj**/Agr<sub>S</sub> in the IP domain is valued in relation to the interpretable [*iD*] feature of *pro*.

If the proposed analysis for the derivation of wh-dependencies in TA vs. SA in terms of a difference in how the CP domain projects is reasonable enough, it would account for the fact that wh-movement in the instance of topicalization in TA does not obey any ordering constraint between the left-dislocated element and the wh-moved element, as shown in the TA examples in



(27), which are the counterpart of Bakir's (2011: 193) original examples from Iraqi Arabic as shown in (28 a, b):

(27) a. l-kursi ween khalleet-u (TA)  
 the-chair where put.2MS-it  
 'Where did you put the chair?'

b. ween l-kursi khalleet-u  
 where the-chair put.2MS-it  
 'Where did you put the chair?'

(28) a. l-qanafa ween khalleet-ha (IA)  
 the-chair where put.2MS-it  
 'Where did you put the chair?'

b. ween l-qanafa khalleet-ha  
 where the-chair put.2MS-it  
 'Where did you put the chair?'

As Bakir (2011) notes, the strict order of Topic DPs and focused elements is not observed in IA. Thus, in these instances of wh-dependency formation by movement, Bakir (2011, p. 200) opts for 'adjunction of left-dislocated elements in the CP domain' and assumes that the left-dislocated object DP *l-qanafa* 'the chair' in (28a) and (28b) is an adjoined position to the left of IP/CP. Bakir (2011, p. 200) adds that: '... if recursion in the CP structure is allowed, it will create the necessary loci for the moved/base-generated elements without any need to specify the individual C-positions with unique functions'.

Thus, the proposed analysis of the derivation of wh-dependencies in SA vs. TA in this section, along with Bakir's (2011) claims about A'-dependencies in Iraqi Arabic may suggest that, whereas SA resorts to the expansion of the CP domain as a ForceP-FinP split system for the topicalization and focalization of constituents, modern spoken dialects like TA, MA and IA make use of adjunction structures for the derivation of such dependencies.

## 5. Conclusion

The Phase-theoretic parameterized probe-goal-Agree approach to the derivation of the VSO vs. SVO word orders in SA and the modern spoken Arabic dialects, as expounded in this paper, is significant in pinning down the units of parametric variation in the derivation (and representation) of the functional domain – both IP and CP – cross-linguistically. This approach primarily relies on the EPP-triggered movement analysis of the functional structure of sentences in natural language (Roberts & Roussou, (2002), Miyagawa, (2010), Roberts, (2010a), Biberauer et al., (2010)). It also relies on the effect the parametrically available [ $\mu$ D]-feature of **Subj** has on structural representations (and dependency relations in derivational terms). The valuation of the [ $\mu$ D]-feature is related to  $\phi$ -feature specification, and by the same token, to the pronominalization of the

structural subject position of clauses so that the **EPP** is satisfied in [Spec, **SubjP**] in SVO structural configurations in the varieties of Arabic.

The derivation of VSO structural configurations in SA has been a main concern of the present analysis. This derivation particularly shows the relative order of dedicated modal particles, and interrogation and negation markers as to the position of the verb in the Split-CP domain. As for the derivation of wh-dependencies in SA, my assumption is that two feature-matching processes seem to be at work. In addition to the identification of [*i*T] features for the well-formedness of the **T**-dependency at the interface, the relationship between the wh-element in [Spec, Foc] and the Focus head is established in terms of the morpho-syntactic ‘checking’/valuation of the relevant features – namely, the interpretable [WH]-features on the wh-element values the uninterpretable [WH]/Focus feature [*u*F] of Foc. In much the same way, the interpretable [*i*D] feature of *pro* values the feature [*u*D] of **Subj** in the IP domain. The valuation of these features establishes head-head and Spec-head agreement relations in terms of which the T dependency is fully identified at Spell Out.

What is more, the analysis has shown that the derivation of wh-dependencies in TA allows different orderings of a wh-word and a ‘topicalized’ DP. Such characteristics have been claimed to follow from the assumption that TA does not resort to the Split-CP form of the left periphery of the IP domain as SA does, but makes exclusive use of adjunction of A’-moved elements to the left of **SubjP**.

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<sup>i</sup> This paper relies on ideas developed in my thesis (Jouini, 2014). The following are the technical abbreviations and acronyms used in the paper: 2 = second person of the verbal agreement system. 3 = third person of the verbal agreement system. A' = non-argument. ACC = accusative. Agr<sub>S</sub> = subject agreement. Agr<sub>S</sub>P = subject Agreement Phrase. D = definiteness. D(P) = Determiner (Phrase). CL = clitic. EPP = Extended Projection Principle. EXPL = expletive. F = feminine. FIN = finiteness. Foc = focus element. FocP = Focus Phrase. FUT = future. GEN = genitive. IA = Iraqi Arabic. IMPERF = imperfective. IND = indicative mood. INDEF = indefinite. JUSS = jussive mood. LF = Logical Form. M = masculine. MA = Moroccan Arabic. MOD = modal. NEG/Neg = negation. NegP = Negation Phrase. NOM = nominative. P = plural. PASS = passive voice. PERF = perfective. PF = Phonetic Form. Q = question morpheme. S = singular. SA: Standard Arabic. Subj = subject DP. SUBJ = subjunctive mood. T = Tense. TA: Tunisian Arabic. TP = Tense Phrase. Top = topic DP. TopP = Topic DP. V = lexical verb. VP = Verb Phrase. v = functional verb element. vP = functional verb Phrase. φ-features = agreement/Agree features.

<sup>ii</sup> The T(ense)-dependency expresses the structural relations between elements that are merged and/or moved in the derivation of sentences and the agreement configurations that obtain thereby, mainly driven by considerations of EPP satisfaction. The same concept is expressed in a particular understanding of Chomsky's (2001, 2004) Phase-theoretic notion of Probe-goal-Agree, as in Miyagawa's (2010) EPP-triggered movement and agreement approach, and in Roberts' (2010a, b) and Biberauer & Roberts' (2010) views on subjects, tense, and null pronominals.

<sup>iii</sup> This is the case, for example, of Object Shift in Swedish (Holmberg, 1999), or of Transitive Expletive Constructions in Icelandic (Bobaljik & Jonas, (1996), Alexiadou & Anagnostopoulou, (2001)).

<sup>iv</sup> In this connection, see for example, Bobaljik & Jonas' (1996, p. 211) analysis of Transitive Expletive Constructions in Icelandic in terms of a '[Spec, TP] parameter'.

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<sup>v</sup> Agree is a derivational operation built up into the Merge and Move components of the grammar (Chomsky 2001, 2004).

<sup>vi</sup> Chomsky (1986) postulates that functional elements are full-fledged syntactic atoms, which are capable of projecting their own phrasal categories that form syntactic structure.

<sup>vii</sup> I adopt an analysis of a null-subject language like Arabic where an *Agr<sub>S</sub>* node parametrically projects in sentence structure. I nevertheless rename *Agr<sub>S</sub>*P as **Subj(ect)**P after Rizzi (2006) (cf. Cardinaletti 2004 for a different view where she postulates both *Agr<sub>S</sub>*P and **Subj**P projecting above TP). Note that neither Cardinaletti (2004) nor Rizzi (2006) assumes the existence of an uninterpretable **D**-feature on **Subj**.

<sup>viii</sup> See section 4.2 for the assumption of a null referential *pro* D-element merged in [Spec, **Subj**P] co-referential with a Topic DP in the left periphery of the IP domain.

<sup>ix</sup> The ellipsis ‘...’ in (11) is meant to point to the existence of other functional nodes above **Subj**P, and below TopP, as in Rizzi, (1997), Poletto, (2000) and Jouitteau, (2005).

<sup>x</sup> Rizzi (1997, p. 286) alludes to the analogous status of the **Top** node, in the CP domain, and the *Agr<sub>S</sub>* node, in the IP domain, in relation to predication. In Rizzi, (2006, pp.121–122), the similarity between the **Subj** node (to which the **T** node is linked in relation to  $\phi$ -feature specification and ultimately to subject-verb agreement) and the **Top** node is related to the fact that both DP-Predicate pairs satisfy some subject-related properties of sentence structure, though only the ‘Subject Criterion’ is linked to the satisfaction of the EPP. Rizzi (2006, p. 122) concludes that ‘the EPP is a manifestation of a Subject Criterion’.

<sup>xi</sup> The **D**-feature, which Roberts (2010a) and Biberauer et al. (2010) assume to be an additional feature of **T** could rather be conceptualized as an ‘edge’ feature similar to Chomsky’s (2008) EF feature that is an exclusive property of the C node. This feature would be a property of the **Subj** node that parametrically projects higher than T, in the IP domain as postulated here.