Subject-Verb Agreement in Standard Arabic:
A Minimalist Approach
Mohammed O. Al-Shorafat

The main concern of this paper is to investigate the phenomenon of subject-verb agreement in Standard Arabic (SA) within Chomsky's (1998, 1999, 2001) recent minimalist approach. In his approach, Chomsky claims that subject-verb agreement involves a relationship between a probe (P) and a local goal (G). He also maintains that syntactic operations proceed by phase. If this approach could provide a principled account of Subject-Verb agreement in SA, then this will lend empirical support for the universality of Chomsky's minimalist hypotheses. If not, then those hypotheses have to be modified in order to account for cross-linguistic language phenomena.

Keywords: Subject-Verb Agreement, Standard Arabic, Probe, Goal, Phase.

1. Introduction

Standard Arabic (SA) exhibits two basic word orders. Verb-Subject (VS) or Subject-Verb (SV). Consider the following (VS) examples:

(1) kataba ?al-walad-u risaalat-an
Wrote 3sg mas the-boy-Nom letter-Acc

(2) kataba-t ?al-bint-u risaalat-an
Wrote 3sg fem the-girl-Nom letter-Acc

We can observe that the agreement in (1) and (2) between the verb and the subject is full, i.e., in person, number and gender. However, consider the following examples:

(3) kataba ?al-walad-an risaalat-an
Wrote 3sg mas the-boys-dual-Nom letter-Acc

(4) kataba ?al-?awlad-u risaalat-an
Wrote 3sg mas the-boys-Nom letter-Acc

(5) *katab-uu l-?awlad-u risaalat-an
Wrote 3 pl mas the-boys-Nom letter-Acc

(6) kataba-t ?al-bint-an risaalat-an
Wrote 3sg fem the-girls-dual-Nom letter-Acc
(7) kataba-t ?al-banat-u risaalat-an  
Wrote 3 sg fem the-girls-Nom letter-Acc

(8) *katab-an ?al-banat-u letter-Acc
Wrote 3 pl fem the-girls-Nom letter-Acc

(3), (4), (6), and (7) show partial agreement between the verb and the subject, only in gender. (5) and (8) are ungrammatical which shows that full agreement (in person and number) is not possible in VS order. However, agreement in (SV) is complete as in the following examples.

(9) ?al-?awlad-u katab-uu risaalat-an  
The-boys-Nom wrote 3 pl mas-Nom letter-Acc

(10) ?al-banat-u kataban risaalat-an  
The girls-Nom wrote 3 pl fem letter-Acc

The partial agreement in the case of (VS) and the full agreement in (SV) have been the topic of a number of studies, in particular (Mohammed 1990, 2000, Soltan 2001, Ouhalla, 1994, Aoun, et.al, 1994 and Soltan 2004, 2007). As for Mohammed (1996, 2001), Soltan (2001), and Ouhalla (1994), they propose that full agreement in (SV) order is the result of a specifier-head relationship between the lexical subject and the tense head in the clause. Partial agreement to them is the result of the relation between the tense head and a null expletive in its specifier. Aoun, et al. (1994), on the other hand, maintain that there is full agreement in both orders but the agreement “gets” lost due to further operations such as verb raising in VS order. Soltan (2004) however, argues that neither of these approaches is adequate to explain the asymmetry in subject-verb agreement in (SA). He further adds that the null expletive construction is only posited for theory internal reasons, i.e., it is not empirically motivated.

Agreement loss, he suggests, is ad-hoc and structure-specific. Soltan (2004) tries to explain full agreement by positing a pro in the VP internal subject-position. According to him, full agreement is required in order to identify the base-generated pro. However, Soltan pursues the idea of positing a base-generated pro in a much more recent work that I will address shortly after I introduce a brief exposition of Chomsky's recent minimalist framework.

In an effort to overcome problems in previous analyses of subject verb agreement in SA, Benmamoun (2000) presents another alternative analysis. His analysis basically depends on a merger operation between the subject and the verb post syntactically where the number feature is spelled out on the verb; however, there is no such merger in the SV order. Soltan (2007) argues against Benmamoun's position and presents his own analysis which is dependent to some extent on previous analyses adopted by Aoun and Benmamoun (1998). It has to be mentioned at this juncture that full subject-verb agreement obtains in Standard Arabic (SA) in both orders (SV or VS) if the subjects are pronouns. The same is true in a number of Arabic-dialects whether the subjects are pronouns or nouns (cf. Aoun, et al 1994).
2. Chomsky's phase-based model

Before applying Chomsky's recent minimalist model to subject-verb agreement in SA, we have to put things into perspective. In earlier work in the minimalist program, agreement was seen as involving a relationship between a specifier and a head (Chomsky 1995). In English, it has been established that finite auxiliaries which occupy the (Tense) position in a clause agree with their subjects in their specifier-position. However, as Radford (2009: 281) explains there have been theoretical and empirical reasons for doubting the spec-head agreement relation. He cites examples in which he shows that a spec-head relation cannot account for certain agreement phenomenon in English. Furthermore, in his recent work (1998, 1999, 2001), Chomsky claims that agreement involves a relationship between a probe (P) and a goal (G) (Chomsky 2001: 13). He also maintains that syntactic operations are restricted to apply when there is a c-commanding relation between the P and G. To give a concrete example of how agreement in Chomsky's recent work applies, Radford (2009: 282) cites the following example:

(14) There were awarded several prizes

(14) is derived in the following manner. The quantifier several is merged with the noun prizes to form the quantifier phrase (QP) several prizes. The QP is merged with the passive verb awarded to form the VP awarded several prizes. This VP is then merged with the passive [Be] as in (15) below:

As soon as the passive [Be] is introduced in the structure above, it starts searching for a nominal goal in its c-commanding domain. The only nominal available is the QP several prizes. Hence, [Be] will agree in person and number (φ features) with several prizes and [Be] will be spelled out in the phonological component as were. Then, the derivation proceeds by merging there in the spec-T position in order to satisfy the EPP feature on T which requires T to project a nominal specifier and the resulting TP is then merged with a null declarative complementizer to form the CP below:

![Diagram of the derivation process](image-url)
One detail that has not been shown in (16) above is case assignment to the QP. Though case is not overtly marked in English, the QP is assigned Nom case through agreement with T. Radford (2009: 283), following Chomsky, proposes that there is a systematic relationship between T agreeing with its goal and Nom assignment. In other words, the probe, T agrees with a (pro) nominal goal which it c-commands and assigns Nom case to it. However, this is not the whole story. Consider the following example. (Radford 2009: 284)

(17)  
A. What happened to the protestors?  
B. They were arrested

From B's answer we know that they is a third person plural because it refers back to the protestors and we know that the tense of the verb is past because the event took place in the past. Hence, the person/number features of they and the past tense feature of the verb are already determined before the items enter the derivation. However, the case feature of they and the person/number features of the verb are not determined yet. They are determined through an agreement operation during the derivation. Moreover, Chomsky (1998) proposes that pro (nominal) expressions enter the derivation with their ϕ features (person/number) features already valued but not their case features. Chomsky also maintains that finite constituents (like the passive [Be] in the example above) enter the derivation with their tense features already valued but their person/number features are yet unvalued. In other words passive [Be] enters the derivation with [Past Tns, u-Pers, u-Num] while the pronoun they enters the derivation with [3-Pers, Pl-Num, u-Case].

As mentioned above as soon as the passive [Be] enters the derivation, it starts searching for a (pro) nominal G in its c-commanding domain. It locates they. Now, the unvalued ϕ features [u-Person, u-Num] on the P [Be] are valued and the unvalued [u-Case] feature on they is valued as Nom by the P [Be]. At this point, Radford (2009: 286) comments that feature valuation raises the question of which features enter the derivation valued and which enter unvalued and why. Chomsky (1998) answers the question by saying that the difference between valued and unvalued features correlates with the distinction between grammatical features which are interpretable (they play a role in semantic interpretation) and features which are uninterpretable (play no role in semantic interpretation). For instance, while person/number and
gender features on nouns or pronouns are interpretable (there is a difference in meaning between a first person and a third person and a third person masculine and feminine … etc.), the case feature on a (pro)nominal is uninterpretable because a subject (pro)nominal can surface as Nom, Acc or Gen, depending on its position in the clause. The tense feature on the auxiliary, however, is interpretable because it indicates whether the sentence refers to a past or present action or event.

It has been assumed that once the structure is generated by the syntactic component, it is immediately sent to the PF component to be spelled out; i.e., it is given a phonetic representation. Chomsky also assumes that unvalued features cannot be processed by the PF component. Hence, they have to be valued during the derivation or the derivation will crash. In Chomsky’s own words, “If transferred to the interface unvalued, uninterpretable features will cause the derivation to crash” (Chomsky 2006: 13).

At the same time the structure generated by the syntactic component is sent to the PF component, it is sent to the semantic component where interpretable features play an important role in computing the semantic interpretation. Further, since uninterpretable features play no role in the semantic component, they should not be allowed to go into the semantic component. But how? In his minimalist work over the past decade, Chomsky suggested the following answer: Uninterpretable features are deleted in the course of the derivation and thus become invisible to the syntactic and semantic components while still being visible to the PF component. For a feature to become invisible in the syntax means it becomes inactive, i.e., it no longer participates in further syntactic operations. For Chomsky, a feature is only active in a syntactic operation such as case marking, agreement or movement if it carries an undeleted uninterpretable feature. Once this feature is deleted, the constituent carrying this feature becomes inactive for any further syntactic operation. For instance, a nominal which has been assigned case can not be assigned another case in the course of the derivation.

In extension to the discussion above, Chomsky proposes that, “the P, G relation must be local,” so as “to minimize search” (2001: 13). He also adds that because “active memory can only hold and process a limited amount of structure, the derivation of Exp[ressions] proceeds by phases… one phase at a time” Chomsky (1999: 9). Following Larson (1988, 1990) Chomsky (1995) adopts a split projection of VP which comprises a VP inner core and an outer vP shell. In consequence to this he considers CP and transitive vP (v*P) as phases. He also notes that, “phases should be as small as possible, to minimize memory” Chomsky 2001:14). Furthermore, once all the syntactic operations have applied within a given phase, the complement of the phase becomes impenetrable to further operations. Chomsky calls this condition the Phase Impenetrability Condition. Chomsky (2001: 5) maintains that the reason why a phase complement is impenetrable to further syntactic operations is that once a phase is complete, the complements of the phase are transferred to the phonological component and the semantic component simultaneously in order to get the appropriate phonetic representation and the appropriate semantic interpretation. In order to make our discussion more concrete, let us consider the derivation of the following example.

(18) She will buy them
Assuming the (vP+VP) split projection, the verb *buy* will merge with the pronoun *them* to form the VP *buy them*. The resulting VP in turn will merge with a light affixal *v* forming a *v'* and the *v'* will merge with the subject *she* forming a vP phase as shown below:

(19)

```
     vP
    /   \    
   /     \   
  PRN v'   VP
     / \     / \
    /   \   /   \ \\
   She buy+∅ V   PRN
      / \         /  \\
     V   them     
```

According to Chomsky's model, the light *v*, agrees with and assigns accusative case to the PRN *them* and being affixal triggers the movement of the verb *buy* to adjoin to it. At this point, the VP is transferred to the PF and semantic components. The derivation proceeds by merging the resulting vP with the T constituent to form the following T'.

(20)

```
     T'
    /   \ 
   /     \ 
  T vP    
    /   \    
   /     \   
  will PRN v'   VP
     /     / \    / \\
    /     /   \   /   \
   she v     V   PRN
      /     / \     /  \\
     V     V   them
```

The P will search for a goal in its c-commanding domain and finds *she*, *will* agrees with and assigns nominative case to *she* and since T has an EPP feature, it triggers the movement of *she* to spec-T forming a TP and the TP will merge with a null declarative C forming the CP as in the following:
Once CP is formed, the complement TP will undergo transfer to the phonological and semantic components to get the appropriate interpretations. At the end of the derivation, we are left with the C-constituent \( \emptyset \) which will also undergo transfer, receiving a null spell out in the PF and interpreted in the semantic component as marking the sentence declarative in force. Having shown how Chomsky's phase-based syntax works, I believe it is only appropriate to present how Soltan (2007) handles subject-verb agreement in SA.

Soltan (2007: 63-72) maintains that the two word orders in (SA) are different. For VS order, he posits the following structure:

\[
\begin{array}{c}
[\text{CP C [TP T Default / Class [vP DP v [VP read the book]]]}] \\
\text{Agree}
\end{array}
\]

In this structure he assumes that T has no \( \phi \) features and no EPP feature; instead T has a default feature with no agreement with the post verbal DP except in Class and nominative case assignment. There is no movement involved and the subject DP remains in situ. However, it has been argued in recent minimalist literature (Radford 2009:288) that there is a systematic relationship between case assignment and T agreement. In other words case assignment is a reflex of an agreement relationship between a finite T probe and a nominal goal. How could Soltan affect nominative case assignment in (22) above in the absence of \( \phi \) agreement between T and the nominal goal?

For SV agreement, Soltan posits the following structure:

\[
\begin{array}{c}
[\text{CP C [TP DP T EPP / \( \emptyset \) / Class [vP pro v [VP V]]]}] \\
\text{Agree}
\end{array}
\]

In this structure he assumes that T has a complete \( \phi \) features (person and number), together with an EPP feature and a Class feature. Here, he posits a pro in spec-vP and states that T agrees in full with this pro while the preverbal DP is merged in spec-T in order to satisfy the EPP feature.
of T and he calls this DP a left-dislocated element. If full agreement takes place between T and pro in spec-vP, how does the DP in spec-T get its nominative case assigned? Soltan assumes that this left-dislocated DP has a default nominative case. Moreover, in a sentence of the following type:

(24)  ?al-?awaldu  qara'uu  ?al-kitaab-a
      The boys    read 3 pl mas    the-book-Acc

?al-?awaldu has the role of an agent; however, on standard minimalist assumptions, spec-T is not a thematic position. It is standard assumption that DPs get their thematic roles within vP shell and then move up to satisfy certain features such as EPP, for example. Furthermore, a spec-T is not a position where left-dislocated elements appear as Soltan claims. As a matter of fact, Soltan goes on to say that a left-dislocated element might appear in "a periphery zone," i.e., it could appear in spec-CP, spec-Foc P, or spec-Topic P...etc. That is to say there is no specified position for a left-dislocated DP which is utterly unconceivable within a minimalist framework. In his effort to present an explanation of why things the way they are in SA, he posits theoretic constructs such as a pro, a T with default features and default nominative case. He posits a T with an EPP feature in SV order and a T with no EPP in VS order. Furthermore, Soltan (2007: 69, fn 28, 74, fn 33) admits that default agreement and default case are not innocent from a minimalist perspective.

To conclude this discussion, it would have been much better for Soltan if he demonstrated that while a SV order in (SA) can be handled smoothly and easily within the minimalist phase-based model, a VS order can't be handled in a similar way which necessitates modifying some aspects of the minimalist model in order to cater for such constructions.

3. Subject-Verb Agreement in SA

Following Chomsky's recent phase-based model, I will show in this section how SV structure is derived. Let us take (9) above repeated here as (25):

(25)  ?al-?awled-u  katab-u  risaalat-an
      The boys – Nom wrote 3 pl mas    letter – Acc

Assuming the vP shell analysis (vP+VP), (25) will be derived in the following manner. First the verb kataba will enter the derivation with its agreement features unvalued while the noun ?al-?awalad enter the derivation with its $\phi$ features (person/number) valued but its case feature is unvalued. Also, the noun risaalat enters the derivation with its case unvalued. Now, the verb kataba merges with risaalat to form the VP kataba risaalat; the VP then merges with a light affixal verb to form the v', the v' in turn merges with the agent subject forming a vP as in the following:
At this stage, the vP is a phase because it has a thematic external argument subject in the spec-vP. The light verb agrees with and assigns Acc case to the DP risaalat-an. Being affixal, the light verb triggers raising of the verb *kataba* from its original position to its resulting in the structure below:

As Chomsky notes since a transitive vP is a phase, the VP, by being the complement or the domain of the light verb which is the head of the vP will be transferred to the phonological and semantic components and ceases to be accessible to any further syntactic operations. It has also been assumed that lower copies of moved constituents (in this case the verb *kataba*) receives a null spell out in the PF component and the deleted uninterpretable features (like the case of the DP risaalat-an) are removed from the structure handed over to the semantic component, but not from the structure handed over to the phonological component. Eventually, the phonological component will not spell out the lower original copy of the verb *kataba*, but only the DP risaalatan.

The syntactic derivation then proceeds by merging the vP with a strong affixal constituent in SA, T forming the T' shown below (showing only the items within vP which receive a PF spell out after the vP was transferred at the end of the vP phase):
It has been assumed that T is a strong affix in (SA) which means it triggers the movement of the verb *kataba* to adjoin to it (Fassi, 1993, 19). As a result we will have the following structure:

Whether T has, in addition to the past tense feature, $\phi$ features and hands them over to the verb, or it has only the tense feature, it will not affect the outcome of this analysis. However, since the plural and class agreement surface on the verb *kataba* in the structure, I will assume that the verb *kataba* will inherit the plural and class agreement in the PF component. Since T has uninterpretable (unvalued) $\phi$ features, it is an active probe which searches for a local goal to value and delete its uninterpretable features. The only available goal within the c-commanding domain of the T probe is the DP *?al-?awlad* (of course, although the DP *risaalat-an* is within the c-commanding domain of the T, it is inaccessible to the probe because it is contained within the vP which has already been transferred to the PF and semantic components. However, *?al-?awlad* is accessible to the T probe and syntactically active because of its uninterpretable case feature. Thus,*?al-?awlad* values the unvalued $\phi$ features of T and T values the unvalued case feature of *?al-?awlad*. It should be noted that *?al-?awlad-u* has plural and class number features, so when valuing the unvalued number of T, the verb will agree with the plural and class features of the noun and will be spelled out in the PF component as *katabuu* (3 mas pl). Still, the T has an EPP feature which requires movement of the goal it agrees with to spec-T. The DP *?al-?awladu* moves from its original position in spec-v to become the specifier of T as shown below:

![Diagram](https://example.com/diagram.png)
The resulting TP is merged with a null declarative C forming a CP. The null declarative C marks the sentence as declarative. The resulting CP will have the following structure:

Since CP is a phase and TP is the domain of the head of the phase (null C), TP is transferred to the PF and the semantic components simultaneously. The lower copies of the verb *kataba* and the DP ?al?-awlad receive a null spell out in the phonological component. However, we are left with the null C constituent which has not been transferred to the PF and the semantic components for "further processing." It has been assumed in the phase-based model that at the end of the overall derivation the remaining constituents will undergo transfer to the PF and the semantic components to be processed. Thus, at the end of the whole derivation we will get the following sentence in (SA):
We can conclude at this point that Chomsky's recent minimalist phase-based framework provides a straight forward account to the SV structure in (SA). This will lend greater empirical support to Chomsky's framework, cross-linguistically.

Now, what about VS order in (SA)? Let us take the following example (4) above repeated here as (33):

(33) kataba ?al-?awlad-u risaalat-an
Wrote 3 sg mas the boys – Nom Letter – Acc

Assuming the vP shell analysis, (33) will have the structure in (34) below:

If we follow Chomsky's recent approach to transitive structures, we will go through the same steps in deriving (25) above. First, the light verb \( v \) agrees with and assigns accusative case to the DP \( \text{risaalat-an} \) in its c-commanding domain. Being affixal in nature, the light \( v \) triggers the movement of the verb \( kataba \) to adjoin to it. At this point one might propose that instead of the light \( v \) agreeing with DP \( \text{risaalat-an} \), the verb \( kataba \) agrees with and assigns accusative case to \( \text{risaalat-an} \). If we allow the verb \( kataba \) to agree with and assign accusative case to \( \text{risaalat-an} \), what would happen to the uninterpretable person/number features of the light \( v \)? How are they going to be valued? If they are not valued, they will not be deleted and if undeleted they will cause the derivation to crash.

What about another alternative? What if we assume [as in (31) above] that the light verb \( v \) agrees with \( \text{risaalat-an} \) and the verb \( kataba \) raises to the light verb \( v \). Since vP is a phase, its domain the VP will be sent to the PF and the semantic components for "further processing." At this point, the VP will no longer be accessible to further syntactic operations. What if we assume that the syntactic computation continues by merging the vP in (34) with a tense affix projecting a TP as shown below?
Let us also assume that the tense affix has interpretable tense feature and uninterpretable person/number and class features. By virtue of having uninterpretable features, the Af is an active probe and searches for a local goal within its c-commanding domain. The only goal available is ?al-?awld. ?al-?awld values the φ and class features on the probe Af and the Af assigns nominative case to ?al-?awld-u. Since T has an EPP feature, the T has to project a TP where ?al-?awld-u moves to spec-T as in the following structure:

At the same time we might assume that the Af will lower onto the verb kataba in order to get the past tense form of the verb in the spell-out. The resulting TP will be merged with a declarative force marker, null C∅ to form the following structure.
At this stage and since CP is a phase, the TP will be sent to the PF and the semantic components to be processed for suitable interpretations. At the end of the derivation the null C will be transferred to the phonological and semantic components. Even within this alternative we will end up with the SV order.

What if we assume that (SA) has no split VP projections as shown below?

(38)

The T affix is an active probe by virtue of having unvalued $\phi$ features and looks for a goal. Here, we have two nominal goals $\text{?al-\textit{awlad}}$ and $\text{risaalat}$ but since $\text{?al-\textit{awlad}}$ is closer, the feature valuation and deletion take place between the T and $\text{?al-\textit{awlad}}$ and the T assigns nominative case to the goal $\text{?al-awladu}$. Still we have problems with the structure in (38). After
movement of the verb to T and as a result of agreement between the verb *kataba* and the plural nominal *?aw-*?awladu in the PF, the verb will be spelled out *katabuu* and not *kataba*. There will be no probe to value the \( \phi \) features of the nominal *risaalat* and it will not be assigned an accusative case. Because the tense node has an EPP feature, *?al-*?awladu has to move to the spec-TP and the TP will be merged with a null declarative C in order to form the CP. However, if following Chomsky's model, we consider CP a phase, the complement of this CP is the TP which has to be transferred to the PF and the semantic components but because the TP contains unvalued \( \phi \) features and an unassigned case (in the case of *risaalat*) the derivation will crash and there will be no semantic interpretation and the result will be ungrammatical. No matter what analyses within Chomsky's phase-based model we could think of, we will not be able to get the VS order in SA. Of course, this represents a problem to Chomsky's recent framework that has to be addressed and solved.

4. Conclusion

I presented in this paper a brief exposition of Chomsky's latest minimalist syntactic framework. I firmly believe that practicing and understanding this exposition will help those who are interested in carrying out future research in this area, in this part of the world.

Applying Chomsky's recent minimalist approach to subject-verb agreement in (SA) has shown that while SV order can be accommodated in Chomsky's recent phase-based framework in a simple and straightforward manner, a VS order can not be accounted for. Is it because an SV order is similar to that of English? Maybe. If not, SV represents important cross-linguistic evidence to the universality of Chomsky's recent model.

What about VS order? Is it an accidental gap in Chomsky's phase-based model that needs to be repaired? Or is verb-subject agreement a language-specific phenomenon? The answers to these questions warrant extensive future research.
References


