

Coordinated subjects and verbal inflection

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This paper examines the hierarchical order of subject DPs in conjunction phrases and provides a new analysis for first conjunct agreement in Standard Arabic. I argue that the EPP feature that attracts the ConjP to a preverbal position is triggered by Φ -completeness on the head T. Full agreement with a conjunction phrase in SV word order occurs when the head T probes for Φ -features, matching ConjP for number and DP1 for person and gender features. Probing ConjP and DP1 is argued to be sufficient to value all the features on T; and since the Φ -complete T has an EPP feature, an XP must move to spec-TP. In this context, there are two agreed goals: ConjP and DP1. I argue that pied-piping DP1 alone to spec-TP is not permitted, appealing to the Coordinate Structure Constraint. Therefore, ConjP is pied-piped and merged in spec-TP to satisfy the EPP feature, acquiring SV word order. On the other hand, when the head T has a default number feature, its probe is specified only for person and gender features. In this case, it probes into the conjunction phrase looking for an appropriate goal, matching its person and gender features against DP1. It is to be noted that ConjP is also probed on the way to DP1; however, there is no matching of features here since ConjP has only number feature while the probe is looking for person and gender features. The Φ -incomplete T does not have an EPP feature; therefore, movement of the agreed goal is not triggered. Thus, the T probe establishes partial agreement with the first conjunct in-situ, creating an instance of FCA in VS word order.

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1. Introduction

The phenomenon of first conjunct agreement (FCA) poses a challenge to a uniform theory of subject-verb agreement in minimalist syntax. The verb may surface with different patterns of agreement with a conjunction phrase due to two factors: i) word-order, i.e., whether the conjunction phrase precedes or follows the verb; and ii) the type of DPs that are conjoined, i.e., whether they are nominal or pronominal. A conjunction of two DPs exhibits a pattern of agreement that does not come from the percolation of the grammatical features on either of the two nouns to determine properties of agreement. Instead, “a conjunction phrase contains two nouns, neither of which is exclusively in control of agreement, and if agreement operates with the conjunction as a whole, there has to be a resolution process to compute the agreement properties of the two nouns” (Badecker 2007: 1542).

Different mechanisms have been proposed to deal with first conjunct agreement in generative grammar. The old GB notion of government could not account for the asymmetrical behaviour of the agreement pattern in FCA contexts and the early minimalist spec-head relation did not resolve the problem either.

With the advent of the minimalist relation Agree that establishes agreement at a distance, there have been efforts to devise a mechanism through which FCA facts can be

accounted for, under a uniform theory of agreement. However, no adequate and satisfactory mechanism has been proposed to account for the FCA facts in Standard Arabic.

This paper attempts to fill that gap and introduce a viable minimalist analysis of FCA in this language. The paper has nine sections. The second section introduces data from Standard Arabic, showing the FCA facts in this language. In the third section, I provide a detailed description of the type of DPs that can be conjoined as well as the featural specification that governs the hierarchy of conjoined DPs in a conjunction phrase. In the fourth section, I chart the geometry of computed features in full agreement contexts. In the fifth section, I propose a new analysis for FCA in Standard Arabic, based on feature specification on the head T. In the sixth section, I re-examine the data from Standard Arabic to ensure that the proposed analysis can adequately account for FCA in this language. The last section summarizes the main claims argued for throughout the paper.

2. FCA facts in Standard Arabic

In Standard Arabic, FCA phenomenon arises when the conjoined subjects follow the verb, i.e., in VS order as in (1-2) below:

- (1) jaaʔ-a T-Tullaab-u wa T-Taalibaat-u
 came-3.s.m the-students-m-nom and the-students-f-nom
 ‘The (male) students and the (female) students came’
- (2) jaaʔ-at il-muʔalimaat-u wa T-Taalibaat-u
 came-3.s.f the-teachers-f-nom and the-students-f-nom
 ‘The (female) teachers and the (female) students came’

Full agreement between the verb and both conjuncts in VS order is impossible in this language, hence the ungrammaticality of (3) below:

- (3) *jaaʔ-aa Ahmed wa Layla
 came-3.dual.m Ahmed and Layla
 ‘Ahmed and Layla came’

It is to be noticed that in FCA constructions the verb partially agrees with the first conjunct in person and gender, when the first conjunct is a nominal DP. The number feature on the verb in FCA contexts is usually set to a default singular value; hence, the ungrammaticality of (4) below when the verb fully agrees with the first nominal conjunct:

- (4) *jiʔ-na T-Taalibaat-u wa ʔaabaa-ʔu-hunna
 came-3.p.f the-students-f-nom and fathers-nom-their
 ‘The (female) students and their fathers came’

However, when the conjoined DPs follow the verb and the first conjunct is a pronominal DP, full agreement is established between the verb and the first conjunct as in (5-6) below:

- (5) a. jiʔ-na hunna wa ʔaabaa-ʔu-hunna
 came-3.p.f they-f and fathers-nom-their
 ‘They and their fathers came’
- b. *jaaʔ-at hunna wa ʔaabaa-ʔu-hunna
 came-3.s.f they-f and fathers-nom-their
 ‘They and their fathers came’
- (6) a. jaaʔ-uu hum wa ʔaSdiqaa-ʔu-hum
 came-3.p.m they-m and friends-nom-their
 ‘They and their friends came’
- b. *jaaʔ-a hum wa ʔaSdiqaa-ʔu-hum
 came-3.s.m they-m and friends-nom-their
 ‘They and their friends came’

On the other hand, when the conjoined DPs precede the verb in SV order, no instance of FCA arises; and the verb fully agrees with the whole conjunction phrase as one constituent:

- (7) a. ʔaT-Tullaab-u wa T-Taalibaat-u jaaʔ-uu
 the-students-m-nom and the-students-f-nom came-3.p.m
 ‘The students (male) and the students (female) came’
- b. *ʔaT-Tullaab-u wa T-Taalibaat-u jaaʔ-a
 the-students-m-nom and the-students-f-nom came-3.s.m
 ‘The students (male) and the students (female) came’
- (8) a. hum wa ʔaabaa-ʔu-hum jaaʔ-uu
 they-m and fathers-nom-their came-3.p.m
 ‘They and their fathers came’
- b. *hum wa ʔaabaa-ʔu-hum jaaʔ-a
 they-m and fathers-nom-their came-3.s.m
 ‘They and their fathers came’

Generally, when the conjunction phrase is preverbal, it behaves like one constituent and its Φ -features are computed by certain resolution rules, e.g., first person + second person = first person; dual + singular = plural; masculine + feminine = masculine...etc. (Corbett 1983).

The data from Standard Arabic show that FCA facts in this language pose many challenges to the theory of agreement. First, why does the verb agree only with the first conjunct? Second, what is the structure of conjunction phrases? Finally, which agreement mechanism can account for this pattern of agreement in FCA contexts in Standard Arabic?

3. Order of DPs in conjunction phrases

In Standard Arabic, there seems to be a sort of algorithm underlying the hierarchy of DPs in a conjunction phrase. This algorithm results from the interplay of different lexical and syntactic conditions. I will be looking at some of these conditions that govern the ordering of DPs in a conjunction phrase, namely the type of the conjoined DPs as well as their featural specification. It is to be noted that what follows is an examination of the unmarked order of DPs in a conjunction phrase. Exceptions might arise, in limited contexts, due to some contextual or stylistic conditions.

Before we start, it should be mentioned that the lexical type of conjoined DPs has precedence over their featural specification in deciding their order, in the sense that the featural specification of DPs, e.g. person, number, gender,...etc., starts to play a role in deciding the order of conjoined DPs only after their lexical type, e.g. nominal, pronominal,...etc, is resolved:

(9) Lexical type>featural specification

In the next three sub-sections, I examine the three different combinations of DPs and look at the effect of the featural specification of conjoined DPs on their order in the conjunction phrase. I will also check if the lexical and featural rules that govern the ordering of conjoined DPs apply to conjunction phrases in Standard Arabic uniformly, regardless of whether they are preverbal or postverbal.

3.1 *Conjunction of nominal DPs*

In Standard Arabic, it is possible to form a conjunction phrase out of two nominal DPs:

(10) katab-a l-walad-u wa l-fataat-u kitaab-an
wrote-3.s.m the-boy-nom and the-girl-nom book-acc
'The boy and the girl wrote a book'

(11) ?al-walad-u wa l-fataat-u katab-aa kitaab-an
the-boy-nom and the-girl-nom wrote-3.dual.m book-acc
'The boy and the girl wrote a book'

However, there seems to be a featural hierarchy governing the order of nominal DPs inside the conjunction phrase. This featural hierarchy includes the following features: animacy, humanness, definiteness, honorificity, gender, and number. Interestingly, these six features/filters have a hierarchy of their own, i.e., animacy precedes all other features; humanness precedes definiteness, honorificity, gender and number; definiteness precedes honorificity, gender and number; honorificity precedes gender and number; and gender precedes number:

(12) Animacy>humanness>definiteness>honorificity>gender>number

It is to be noticed that the person feature is inconsequential to the hierarchical order of nominal DPs in conjunction phrases since both DPs obviously have a third person feature.

3.1.1 Animacy

In Standard Arabic, when two nominal DPs are conjoined and one of them is inanimate, the unmarked order is to place it second. The animacy feature does not have any morphological marker on the DP or the verb:

- (13) ?aSbaḥ-a l-jamal-u wa S-Saḥraa?-u shay?-an min al-maaD-i
 became-3.s.m the-camel-nom and the-desert-nom thing-acc from the-past-gen
 ‘The camel and the desert have become a thing of the past’
- (14) ? ?aSbaḥ-at eS-Saḥraa?-u wa l-jamal-u shay?-an min al-maaD-i
 became-3.s.f the-desert-nom and the-camel-nom thing-acc from the-past-gen
 ‘The camel and the desert have become a thing of the past’
- (15) ?al-jamal-u wa S-Saḥraa?-u ?aSbaḥ-aa shay?-an min al-maaD-i
 the-camel-nom and the-desert-nom became-3.dual.m thing-acc from the-past-gen
 ‘The camel and the desert have become a thing of the past’
- (16) ? ?aS-Saḥraa?-u wa l-jamal-u ?aSbaḥ-aa shay?-an min al-maaD-i
 the-desert-nom and the-camel-nom became-3.dual.m thing-acc from the-past-gen
 ‘The camel and the desert have become a thing of the past’

It is to be noted that the question mark that appears in front of the cited examples indicates that the sentence is problematic in unmarked contexts. However, these sentences may be considered acceptable in limited and marked contexts where this markedness is triggered by specific requirements dictated by some contextual or stylistic conditions.

3.1.2 Humanness

The next feature in the hierarchy of features governing the ordering rules of conjoined DPs is humanness. It indicates that the DP refers to a human being. Intuitively, this feature starts to operate only after the animacy feature is resolved, i.e., animacy feature is resolved first and if both conjoined DPs are found to be animate, then humanness feature is resolved. It is to be noted that this feature does not have any morphological marker on the DP or the verb:

- (17) faaz-a l-faaris-u wa l-ḥiSaana-u bi s-sibaaq-i
 won-3.s.m the-horseman-nom and the-horse-nom with the-race-gen
 ‘The horseman and the horse won the race’
- (18) ? faaz-a l-ḥiSaana-u wa l-faaris-u bi s-sibaaq-i
 won-3.s.m the-horse-nom and the-horseman-nom with the-race-gen
 ‘The horse and the horseman won the race’
- (19) ?al-faaris-u wa l-ḥiSaana-u faaz-aa bi s-sibaaq-i
 the-horseman-nom and the-horse-nom won-3.dual.m with the-race-gen
 ‘The horseman and the horse won the race’

- (20) ?ʔal-ḥiSaan-u wa l-faaris-u faaz-aa bi s-sibaaq-i
 the-horse-nom and the-horseman-nom won-3.dual.m with the-race-gen
 ‘The horse and the horseman won the race’

It is clear from the examples above that a human DP usually precedes a non-human DP in conjunction phrases.

3.1.3 *Definiteness*

In Standard Arabic, definiteness is usually marked on nominal DPs via the determiner *ʔal* ‘the’ that appears before nouns. In a scenario where a definite DP is conjoined with an indefinite NP, the definite DP is generally placed first. While this feature is marked morphologically on the DPs, it does not have any morphological marker on the verb:

- (21) nazal-a l-muʔayiduun wa muṣaariDuun ʔila sh-shawaariṣ-i
 descended-3.s.m the-supporters and opponents to the-streets-gen
 ‘The supporters and opponents took to the streets’
- (22) ? nazal-a muṣaariDuun wa l-muʔayiduun ʔila sh-shawaariṣ-i
 descended-3.s.m opponents and the-supporters to the-streets-gen
 ‘(The) opponents and the supporters took to the streets’
- (23) ʔal-muʔayiduun wa muṣaariDuun nazal-uu ʔila sh-shawaariṣ-i
 the-supporters and opponents descended-3.p.m to the-streets-gen
 ‘The supporters and opponents took to the streets’
- (24) ? muṣaariDuun wa l-muʔayiduun nazal-uu ʔila sh-shawaariṣ-i
 opponents and the-supporters descended-3.p.m to the-streets-gen
 ‘(The) opponents and the supporters took to the streets’

3.1.4 *Honorificity*

Standard Arabic is a language that can show the importance, authority, and significance of the object of a reference by placing it before the relatively less important one. However, this feature does not have any morphological realization on the DPs or the verb:

- (25) istaqaal-a r-raʔiis-u wa l-wuzaraaʔ-u
 resigned-3.s.m the-president-nom and the-ministers-nom
 ‘The president and the ministers resigned’
- (26) ? istaqaal-a l-wuzaraaʔ-u wa r-raʔiis-u
 resigned-3.s.m the-ministers-nom and the-president-nom
 ‘The ministers and the president resigned’
- (27) ʔar-raʔiis-u wa l-wuzaraaʔ-u istaqaal-uu
 the-president-nom and the-ministers-nom resigned-3.p.m
 ‘The president and the ministers resigned’

- (28) ?ʔal-wuzaraaʔ-u wa r-raʔiis-u istaqaal-uu
 the-ministers-nom and the-president-nom resigned-3.p.m
 ‘The ministers and the president resigned’

3.1.5 Gender

There are two classes of grammatical gender in Standard Arabic: the masculine and the feminine. While the feminine marker is usually realized on nominal DPs and verbs, the masculine feature does not have specific morphological markers. The feminine marker on nominal DPs is the suffix *-aat*. On verbs, the feminine marker is *-at* when the subject DP is singular, *-ataa* when dual, and *-na* when the subject is plural:

- (29) katab-a l-walad-u wa l-fataat-u kitaab-an
 wrote-3.s.m the-boy-nom and the-girl-nom book-acc
 ‘The boy and the girl wrote a book’
- (30) ? katab-at il-fataat-u wa l-walad-u kitaab-an
 wrote-3.s.f the-girl-nom and the-boy-nom book-acc
 ‘The girl and the boy wrote a book’
- (31) ?al-walad-u wa l-fataat-u katab-aa kitaab-an
 the-boy-nom and the-girl-nom wrote-3.dual.m book-acc
 ‘The boy and the girl wrote a book’
- (32) ?ʔal-fataat-u wa l-walad-u katab-aa kitaab-an
 the-girl-nom and the-boy-nom wrote-3.dual.m book-acc
 ‘The girl and the boy wrote a book’

It is clear from the examples above that in conjunction phrases masculine DPs usually precede feminine DPs in unmarked contexts.

3.1.6 Number

Standard Arabic has three grammatical numbers: singular, dual, and plural. Only the dual and plural forms are realized morphologically on the nominal DP. The dual number marker on DPs is the suffix *-aan*, when the DP is nominative, and *-ain* elsewhere. There are two regular markers for plural number on masculine DPs, i.e., *-uun* when nominative and *-iin* elsewhere. Feminine DPs have one marker for plural number *-aat*. Intuitively, a conjunction of two DPs which have a similar number feature does not seem to have any effect on the ordering of both conjuncts. Let us look at the conjunction of two singular DPs in both word orders:

- (33) jaaʔ-a l-kaatib-u wa l-muħarrir-u
 came-3.s.m the-writer-nom and the-editor-nom
 ‘The writer and the editor came’
- (34) jaaʔ-a l-muħarrir-u wa l-kaatib-u
 came-3.s.m the-editor-nom and the-writer-nom
 ‘The editor and the writer came’

- (35) ?al-kaatib-u wa l-muħarrir-u jaa?-aa
 the-writer-nom and the-editor-nom came-3.dual.m
 ‘The writer and the editor came’
- (36) ?al-muħarrir-u wa l-kaatib-u jaa?-aa
 the-editor-nom and the-writer-nom came-3.dual.m
 ‘The editor and the writer came’

It can be concluded that DPs with singular number feature in Standard Arabic can be ordered quite freely in the conjunction phrase. The same conclusion applies also to a conjunction of DPs with dual number feature and plural number feature. Therefore, we need to look at the possibilities and anomalies of combining nominal DPs that have different number features. The first possible combination is a conjunction of singular and dual DPs:

- (37) ? jaa?-a l-kaatib-u wa l-muħarrir-aan
 came-3.s.m the-writer-nom and the-editors-dual.nom
 ‘The writer and the (two) editors came’
- (38) jaa?-a l-muħarrir-aan wa l-kaatib-u
 came-3.s.m the-editors-dual.nom and the-writer-nom
 ‘The (two) editors and the writer came’
- (39) ? ?al-kaatib-u wa l-muħarrir-aan jaa?-uu
 the-writer-nom and the-editors-dual.nom came-3.dual.m
 ‘The writer and the (two) editors came’
- (40) ?al-muħarrir-aan wa l-kaatib-u jaa?-uu
 the-editors-dual.nom and the-writer-nom came-3.dual.m
 ‘The (two) editors and the writer came’

It is evident from the examples above that when a singular DP is conjoined with a dual DP in an unmarked context, the dual DP usually precedes the singular one. However, a full picture of the role of number in deciding the order of conjoined DPs can be attained only if we examine the other possible combinations of DPs. The following examples show conjunction phrases where one of the conjoined DPs is singular and the other is plural:

- (41) ? jaa?-a l-kaatib-u wa l-muħarrir-uun
 came-3.s.m the-writer-nom and the-editors-nom
 ‘The writer and the editors came’
- (42) jaa?-a l-muħarrir-uun wa l-kaatib-u
 came-3.s.m the-editors-nom and the-writer-nom
 ‘The editors and the writer came’
- (43) ? ?al-kaatib-u wa l-muħarrir-uun jaa?-uu
 the-writer-nom and the-editors-nom came-3.p.m
 ‘The writer and the editors came’

- (44) ?al-muħarrir-uun wa l-kaatib-u jaa?-uu
 the-editors-nom and the-writer-nom came-3.p.m
 ‘The editors and the writer came’

The examples above show that a plural DP is placed before a singular one in a conjunction phrase in an unmarked context. However, before we draw a conclusion on the effect of number on the ordering of DPs in conjunction phrases, it remains to look at the third possible combination, i.e., combining a dual DP with a plural one:

- (45) ? jaa?-a l-kaatib-aan wa l-muħarrir-uun
 came-3.s.m the-writers-dual.nom and the-editors.nom
 ‘The (two) writers and the editors came’

- (46) jaa?-a l-muħarrir-uun wa l-kaatib-aan
 came-3.s.m the-editors-nom and the-writers-dual.nom
 ‘The editors and the (two) writers came’

- (47) ? ?al-kaatib-aan wa l-muħarrir-uun jaa?-uu
 the-writers-dual.nom and the-editors-nom came-3.p.m
 ‘The (two) writers and the editors came’

- (48) ?al-muħarrir-uun wa l-kaatib-aan jaa?-uu
 the-editors-nom and the-writers-dual.nom came-3.p.m
 ‘The editors and the (two) writers came’

It is clear that there is a hierarchy within the number feature itself that affects the ordering of DPs in conjunction phrases. This hierarchy can be summarized as below:

- (49) Plural>dual>singular

Plural DPs precede dual and singular DPs in conjunction phrases, and dual DPs precede singular ones. Thus, when two nominal DPs are conjoined, there is a hierarchy of features that is at work to decide their order in the conjunction phrase. These features include animacy, humanness, definiteness, honorificity, gender, and number. This hierarchy starts with animacy as the first feature to be checked, and ends with number as the last feature.

3.2 Conjunction of pronominal DPs

Standard Arabic is a null subject language; therefore, when the subject is pronominal it usually gets dropped. However, the verb always shows full agreement with the null subject. The same mechanism also applies when the subject is a conjunction of two pronominal DPs. The unmarked option is to drop the conjoined pronominal DPs, with the verb showing full agreement with both conjuncts:

- (50) thahab-aa ?ila s-suuq-i
 went-3.dual.m to the-market-gen
 ‘(Both) went to the market’

Likewise, when the conjoined pronominal DPs choose to surface, the verb still shows full agreement; hence the absence of FCA phenomenon with conjoined pronominal DPs:

- (51) *ʔana wa hiya qaabal-naa l-mudiir-a*
 I and she met-1.p.m the-manager-acc
 ‘She and I met the manager’
- (52) **qaabal-tu ʔana wa hiya l-mudiir-a*
 met-1.s I and she the-manager-acc
 ‘She and I met the manager’

Unlike conjoined nominal DPs, the order of conjoined pronominal DPs in Standard Arabic is controlled by a limited set of features that includes person and gender. This can be attributed to the fact that pronominal subjects usually refer to animate or human beings, and pronominals, by definition, are definite. Moreover, the number feature does not seem to be among the features that govern the ordering of conjoined pronominal DPs since combining two pronominal DPs that have the same person and gender features, but different number feature, is unusual in Standard Arabic. For example, it is odd in this language to say *hum wa huwa* ‘they and he’, since we can instead say *hum* ‘they’ to refer to both. Thus, the ordering of pronominal DPs in a conjunction phrase is governed by two features: person and gender. It should be noticed that there is a clear hierarchy between these two features: person precedes gender:

- (53) Person > gender

In the following two sub-sections, I examine the effect of the person and gender features on the ordering of pronominal DPs in conjunction phrases.

3.2.1 *Person*

In Standard Arabic, person feature seems to play an important role in deciding the order of two pronominal DPs in a conjunction phrase. A conjunction of two pronominal DPs with the same person feature is peculiar in Standard Arabic, e.g. *ʔanta wa ʔantum* ‘you/sg and you/pl’, since we can instead say *ʔantum* ‘you/pl’ to refer to both pronominals. However, it is acceptable to combine two pronominal DPs with different person features. The following examples show a conjunction of a first person DP with a second person DP:

- (54) *ʔana wa ʔanta qaabal-naa l-mudiir-a*
 I and you-s.m met-1.p.m the-manager-acc
 ‘You and I met the manager’
- (55) *? ʔanta wa ʔana qaabal-naa l-mudiir-a*
 you-s.m and I met-1.p.m the-manager-acc
 ‘You and I met the manager’

The examples above show that a first person DP usually precedes a second person DP in a conjunction phrase. It is to be noticed that a conjunction of two pronominal DPs always

triggers full agreement on the verb, and both conjuncts always surface preverbally. The examples below have two conjoined pronominals, one is a first person DP and the other a third person DP:

(56) ?ana wa hum qaabal-naa l-mudiir-a
I and they-m met-1.p.m the-manager-acc
'They and I met the manager'

(57) ? hum wa ?ana qaabal-naa l-mudiir-a
they-m and I met-1.p.m the-manager-acc
'They and I met the manager'

It is evident from the examples above that a first person DP usually precedes a third person DP. It remains to look at examples where a second person DP is conjoined with a third person pronominal DP:

(58) ?anta wa hum qaabal-tum ul-mudiir-a
you-s.m and they-m met-2.p.m the-manager-acc
'They and you met the manager'

(59) ? hum wa ?anta qaabal-tum ul-mudiir-a
they-m and you-s.m met-2.p.m the-manager-acc
'They and you met the manager'

Thus, person feature is shown to play a central role in deciding the order of conjoined pronominal DPs in accordance with the following pattern:

(60) First person>second person>third person

3.2.2 Gender

When two pronominal DPs with the same person feature, but have different gender features, are conjoined together, it is the norm to place the masculine DP first:

(61) huwa wa hiya qaabal-aa l-mudiir-a
he and she met-3.dual.m the-manager-acc
'He and she met the manager'

(62) ? hiya wa huwa qaabal-aa l-mudiir-a
she and he met-3.dual.m the-manager-acc
'She and he met the manager'

3.3 Conjunction of pronominal and nominal DPs

In Standard Arabic, there is only one filter that governs the conjunction of a pronominal DP with a nominal DP. This filter does not depend on any featural specification of the conjoined DPs but on their lexical type. In this language, a pronominal DP always precedes a nominal one:

- (63) thahab-tu ?ana wa l-?awlaad-u ?ila s-suuq-i
 went-1.s I and the-boys-nom to the-market-gen
 ‘The boys and I went to the market’
- (64) *thahab-a l-?awlaad-u wa ?ana ?ila s-suuq-i
 went-3.s.m the-boys-nom and I to the-market-gen
 ‘The boys and I went to the market’
- (65) ?ana wa l-?awlaad-u thahab-naa ?ila s-suuq-i
 I and the-boys-nom went-1.p.m to the-market-gen
 ‘The boys and I went to the market’
- (66) *?al-?awlaad-u wa ?ana thahab-naa ?ila s-suuq-i
 the-boys-nom and I went-1.p.m to the-market-gen
 ‘The boys and I went to the market’

It is clear from the examples above that the pronominal DP must precede the nominal DP, otherwise the sentence is rendered ungrammatical. Moreover, in this context the verb agrees with the first conjunct when the conjunction phrase is postverbal; and it agrees with both conjuncts when the conjunction phrase is preverbal.

4. Feature-computation in full agreement contexts

When the verb agrees with both conjuncts, full agreement morphology appears on the verb. In this context, the features of both DPs are computed in a systematic manner in order to allocate the features that can value the Φ -probe of the head T. For ease of exposition, the geometry of feature-computation on both DPs is shown in the tables below. It should be noted that the tables show only the feature-computation of acceptable combinations:

4.1 *The person feature*

(67)

DP1	DP2	Agreement on the verb
First person	Second person	First person
First person	Third person	First person
Second person	Second person	Second person
Second person	Third person	Second person
Third person	Third person	Third person

4.2 The number feature

(68)

DP1	DP2	Agreement on the verb
Singular	Singular	Dual
Dual	Singular	Plural
Dual	Dual	plural
Plural	Singular	Plural
Plural	Dual	Plural
Plural	Plural	Plural

4.3 The gender feature

(69)

DP1	DP2	Agreement on the verb
Masculine	Masculine	Masculine
Masculine	Feminine	Masculine
Feminine	Feminine	Feminine

It is apparent that there is a systematic pattern running throughout the tables above, i.e., the person and gender features that appear on the verb are identical to the person and gender features on the first conjunct. This pattern reflects the fact that in a null subject language like Standard Arabic, it is typical to have instances of first conjunct agreement, but not last conjunct agreement. The data here strongly predict that the Φ -probe need not target the second conjunct if its features can be valued against the first conjunct, in accordance with the economy condition Attract First (Bošković 2009).

5. Feature-driven analysis for FCA

I assume that the lexical type of conjoined DPs, i.e., whether both are nominal, pronominal, or a combination of both, as well as their feature specification, i.e., animacy, humanness, definiteness..etc, are computed phrase-internally, i.e., within the conjunction phrase, in order to decide the order of both DPs. Moreover, I assume, following Bošković (2009), that the number feature on the conjunction phrase is computed at the ConjP level, which means that ConjP has number specification. However, person and gender features are retained on the conjoined DPs:

(70) T[person, number, gender] [ConjP[number] DP1[person, gender] and DP2[person, gender]]]

Therefore, I assume, along lines discussed in Bošković (2009), that in the context of agreement with conjoined DPs, there are three possible targets for the T probe: i) ConjP; ii) the first DP; and iii) the second DP. However, it is to be noted that while the system developed in Bošković (2009) allowed two probes, i.e., primary probe and secondary probe, I assume that one probe is sufficient to value features in Standard Arabic and similar languages. The empirical facts of the Serbo-Croatian data discussed in Bošković (2009)

motivated the assumption that there is a second application of Agree. Serbo-Croatian has first conjunct agreement as well as last conjunct agreement; therefore, the failure of the first probe in certain contexts to pied-pipe the first conjunct, due to the ambiguity created by the availability of two possible candidates for pied-piping, deletes the feature on the first conjunct and makes it possible for the second conjunct to be targeted by the second probe. However, Standard Arabic does not have instances of last conjunct agreement and cannot have two possible candidates for pied-piping, appealing to the relevant part of the Coordinate Structure Constraint; therefore, a second application of Agree may not be needed here.

Under minimalist assumptions, a single probe can value its uninterpretable features against more than one goal: “The probe agrees with *goals* in its domain” (Chomsky 2005: 9, italics mine). When a single probe targets multiple goals, it is argued that “Agree applies to all the matched goals at the same derivational point derivationally simultaneously” (Hiraiwa 2001: 69). In addition, it is argued that this mechanism prevents any instance of defective intervention effects, since probing into multiple goals is derivationally simultaneous (Hiraiwa 2001). The main claim in my analysis is that formal features are valued in-situ without appealing to movement and that any agreement discrepancy that might arise is to be accounted for in terms of feature specification on the inflectional head. Keeping this in mind, I argue that the head T, whether Φ -complete or not, can probe into more than one goal in its domain. The motivation for probing into multiple goals is the need to value formal features; therefore, once the head T, whether Φ -complete or not, values all its unvalued features, it ceases to probe. This means if the head T can value all its features against the first goal, there is no need to probe any further, appealing to Attract First (Bošković 2009).

I assume that in agreement with conjoined DPs, the head T in Standard Arabic has the following inventory of features: i) Φ -features, and ii) the EPP feature. However, I argue that in this language the EPP feature is dependent on Φ -completeness on the head T.

Full agreement with a conjunction phrase occurs when the head T probes for Φ -features, matching ConjP for number and DP1 for person and gender features. Probing ConjP and DP1 is sufficient to value all the features on T:

(71) T[**number, person, gender**] [ConjP[**number**] DP1[**person, gender**] and DP2[person, gender]]

Since the Φ -complete T has an EPP feature, an XP must move to spec-TP. In this context, there are two agreed goals: ConjP and DP1. I argue that pied-piping DP1 alone to spec-TP is not possible, appealing to the Coordinate Structure Constraint. Therefore, ConjP is pied-piped and merged in spec-TP to satisfy the EPP feature, acquiring SV order:

(72) [TP [ConjP DP and DP]_j v_i+T [vP t_j t_i [VP...]]]

When the head T has a default number feature that does not need any valuation, its probe is specified only for person and gender. In this case, it probes into the conjunction phrase looking for an appropriate goal, matching its person and gender features against DP1. It should be noted that ConjP is also probed on the way to DP1; however, there is no matching of features here since ConjP has only number feature while the probe is looking for person and gender features:

- (73) T[~~number~~, **person, gender**] [ConjP[**number**] DP1[**person, gender**] and DP2[**person, gender**]]

It is to be noted that the Φ -incomplete T does not have an EPP feature; therefore, movement of the agreed goal is not triggered. Thus, the T probe establishes partial agreement with the first conjunct in-situ, creating an instance of FCA in VS order:

- (74) [TP v_i +T [_{VP} [ConjP DP and DP] t_i [_{VP} ...]]]

It is evident that the probe cannot skip DP1 and target DP2, given Attract First. Also, the probe does not need to target DP2, since all its features can be valued by DP1. It should be noted that the T probe does not need to target DP2, regardless of whether there is full agreement or FCA. As discussed earlier in this paper, all features are usually computed in favour of the first conjunct in Standard Arabic; therefore, even in a system where the probe can also target DP2, it will not affect the agreement system.

Agreement with conjoined DPs in a postverbal position, where the first conjunct is pronominal and the second nominal, seems to be problematic. In this context, there is full agreement with the first conjunct, but without moving the agreed goal to spec-TP. I assume that the head T probes into the conjunction phrase, matching its features against DP1. The head T here has an EPP feature since it is Φ -complete; however, pied-piping DP1 to spec-TP is barred, appealing to the Coordinate Structure Constraint. Apparently, the EPP feature in this context seems to be demoted, in order to save the derivation.

6. FCA in Standard Arabic

In Standard Arabic, the head T probes into matching goals in its domain until it values all its Φ -features. When the head T is Φ -complete, it can have an EPP feature; consequently, a pipable goal is pied-piped and merged in spec-TP:

- (75) a. Ahmed wa Layla jaaʔ-aa
 Ahmed and Layla came-3.dual.m
 ‘Ahmed and Layla came’
 b. ʔl-ʔawlaad-u wa l-fatayaat-u jaaʔ-uu
 the-boys-nom and the-girls-nom came-3.p.m
 ‘The boys and the girls came’

There are two FCA contexts in this language, the first arises when the head T is not specified for number and instead has a default value, resulting in partial agreement with the first DP only:

- (76) jaaʔ-a l-ʔawlaad-u wa l-fatayaat-u
 came-3.s.m the-boys-nom and the-girls-nom
 ‘The boys and the girls came’

The agreed goal in this context, however, cannot be raised to spec-TP due to the absence of the EPP feature on the Φ -incomplete T:

- (77) *ʔal-ʔawlaad-u jaaʔ-a wa l-fatayaat-u
 the-boys-nom came-3.s.m and the-girls-nom
 ‘The boys and the girls came’

The second FCA context arises when the head T establishes full agreement with the first pronominal conjunct:

- (78) qaabal-tu ʔana wa Ahmed al-mudiir-a
 met-1.s I and Ahmed the-manager-acc
 ‘Ahmed and I met the manager’

In this context, pied-piping the agreed goal alone to spec-TP is barred, appealing to the Coordinate Structure Constraint:

- (79) *ʔana qaabal-tu wa Ahmed al-mudiir-a
 I met-1.s and Ahmed the-manager-acc
 ‘Ahmed and I met the manager’

It is to be noticed that when both conjoined DPs are pronominal, they usually get dropped, and the verb shows full agreement with both conjuncts:

- (80) thahab-aa ʔila s-suuq-i
 went-3.dual.m to the-market-gen
 ‘Both went to the market’

When the conjoined pronominal DPs choose to surface, the verb still shows full agreement; hence the absence of FCA phenomenon in this context:

- (81) a. ʔana wa hiya qaabal-naa l-mudiir-a
 I and she met-1.p.m the-manager-acc
 ‘She and I met the manager’
 b. *qaabal-tu ʔana wa hiya l-mudiir-a
 met-1.s I and she the-manager-acc
 ‘She and I met the manager’

As argued earlier, full agreement with pronominal DPs occurs when the head T is specified for number, person, and gender features; matching its number feature against ConjP, and person and gender features against DP1. The EPP feature on the Φ -complete probe triggers pied-piping the agreed goal to spec-TP. Pied-piping DP1 alone is not allowed in Standard Arabic, appealing to the relevant part of the Coordinate Structure Constraint; therefore, ConjP is pied-piped and merged in spec-TP, hence the ungrammaticality of the sentence below when the conjunction phrase surfaces postverbally:

- (82) *thahab-aa huwa wa hiya ?ila s-suuq-i
 went-3.dual.m he and she to the-market-gen
 ‘She and he went to the market’

7. Conclusion

There are two main filters that decide the order of two conjoined DPs in Standard Arabic. The first filter has to do with the lexical type of the conjoined DPs, i.e., whether these DPs are pronominal, nominal, or a combination of both. The second filter includes featural specification on both DPs which plays a role in deciding their order in the conjunction phrase. First conjunct agreement in Standard Arabic is argued to be phrasal and the conjoined DPs are in the specifier and complement positions of the conjunction head. I argue that there are two FCA contexts in this language: the first arises when the head T is not specified for number, thus triggering default agreement; and the second arises when pied-piping an agreed goal is constrained by the relevant part of the Coordinate Structure Constraint. It is shown that a feature-driven analysis for FCA can accommodate the different patterns of agreement displayed in Standard Arabic.

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