ON AGREE AND POSTCYCLIC MERGE IN SYNTACTIC DERIVATIONS: FIRST CONJUNCT AGREEMENT IN STANDARD ARABIC REVISITED*

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1. Introduction

The investigation of agreement phenomena has been at the heart of syntactic theorizing within the generative tradition during the past two decades or so. Central to this research project has always been the question of what built-in mechanisms in the grammar are needed to account for agreement in natural languages. In the GOVERNMENT-BINDING (GB) literature (see, for example, Chomsky 1981), two main mechanisms were typically invoked: the Spec-head configuration and the notion of government, a duality of devices that became theoretically undesirable under the assumptions of the post-GB MINIMALIST PROGRAM (MP) for linguistic theory (Chomsky 1993, 1995), where all agreement/Case-assignment is accounted for in terms of the Spec-head

* For their valuable questions, comments, and suggestions, I would like to extend my thanks to Mark Baker, Elabbas Benmamoun, Cedric Boeckx, Tomohiro Fujii, Norbert Hornstein, Anthony Kroch, Howard Lasnik, Andrew Nevins, Hamid Ouali, Milan Rezac, Norvin Richards, Juan Uriagereka, and the audience at the *Second ECO5 Syntax Workshop* held at University of Maryland, College Park in the spring of 2004, the participants at the *Workshop on Minimalist Theorizing* held at Indiana University, Bloomington, in the summer of 2004, as well as the audience at the *19th Arabic Linguistics Symposium*, held at the University of Illinois, Urbana-Champaign, in the Spring of 2005. Special thanks are due to Elabbas Benmamoun for his encouragement and patience during my writing of that paper. It goes without saying that all mistakes or shortcomings in this paper are entirely my responsibility.

configuration, with the notion of government being entirely eliminated from the theory of grammar. A more recent approach (Chomsky 2000, 2001a, 2001b), however, treats agreement not as a reflex of a phrase structure theoretic relationship, but as the result of a primitive built-in operation of the grammar, call it AGREE, whereby an agreement relation between two elements within the structural hierarchy of a sentence can be established at a distance, though still subject to certain locality considerations (cf. Section 5 below for a more articulated formulation of how the operation AGREE works in syntactic derivations).[1]

In this paper, I revisit the phenomenon of FIRST CONJUNCT AGREEMENT (FCA, henceforward) with data from Standard Arabic (SA), showing that FCA provides further evidence for the operation AGREE in the grammar and against the Spec-head approach to agreement phenomena. The paper is organized as follows. Section 2 presents the facts of FCA in SA and how they relate to the general phenomenon of the subject-verb agreement asymmetry in the language. An earlier analysis of FCA in terms of Spec-head agreement is then discussed in Section 3, where empirical arguments are presented against such an account of FCA. In Section 4, I articulate the analysis of the agreement asymmetry between conjoined subjects in pre- and post-verbal position in terms of interface conditions governing the occurrence of *pro* in null subject languages, along the lines suggested in Soltan (2006). In Section 5, I present a minimalist analysis of FCA in terms of the interaction between AGREE and postcyclic Merge of adjuncts (the latter operation independently argued for in the literature to account for classical LF effects), whereby FCA is accounted for as a PF effect of postcyclic Merge of conjunction phrases. Section 6 sums up the conclusions of the paper.

[1] For a more elaborate discussion of how each of these two distinct approaches to agreement fares conceptually and empirically, see Soltan (2006, 2007). See also Hornstein (2005), where arguments are made in favor of the account of agreement in terms of phrase structure theoretic relations resulting from the primitive operations of Concatenate and Merge. A discussion of this latter approach is presented in Soltan (2007).

2. First Conjunct Agreement in Standard Arabic[2]

In SA, FCA is obligatory in VS orders where the subject is a conjoined DP, as shown by the contrast between (1a) and (1b) in the gender infection on the verb, overtly manifest in the case of feminine gender.

(1) a.	ʒaaʔa	Zayd-un	wa	Hind-u
	came-3sgmas	Zayd-nom	and	Hind-nom
b.	ʒaaʔa-t	Hind-u	wa	Zayd-un
	came-3sgfem	Hind-nom	and	Zayd-nom

Full agreement with the whole conjoined DP is not possible in this context, as the ungrammaticality of the dual morpheme in (2) illustrates:

(2)	*ʒaaʔ-aa	Zayd-un	wa	Hind-u
	came-3dumas	Zayd-nom	and	Hind-nom

But SA also allows a conjoined DP to precede the verb, in which case full agreement, not FCA, is the only possibility, as shown by the grammaticality contrast between (3a) and (3b) below:

(3) a.	Zayd-un	wa	Hind-u	ʒaaʔ-aa
	Zayd-nom	and	Hind-nom	came-3dumas
b.	*Zayd-un	wa	Hind-u	ʒaaʔa/ʒaaʔa-t
	Zayd-nom	and	Hind-nom	came-3sgmas/came-3sgfem

As is well known, this full-versus-partial agreement pattern associated with word order alternation is not confined to cases where the subject is a conjoined DP. Rather, SA exhibits this SUBJECT VERB-AGREEMENT ASYMMETRY (SVAA, henceforth) with lexical DPs as well: SV orders show full agreement between the preverbal DP and verb in all ϕ-features (4a), while VS orders show only partial (i.e., gender)

[2] The following abbreviations are used in the glosses of Arabic data. 1, 2, and 3=first, second, and third person, mas=masculine, fem=feminine; sg=singular; du=dual; pl=plural; nom=nominative; acc=accusative; gen=genitive (with genitive used loosely for all nonnominative and nonaccusative cases).

agreement (4b).[3] No other mix-and-match of agreement pattern and word order is permissible (4c,d):[4]

(4)	a.	ʔal-ʔawlaad-u	qaraʔ-u	ʔal-dars-a	✓SV+full agreement
		the-boys-nom	read 3plmas	the-lesson-acc	
	b.	qaraʔa	ʔal-ʔawlaad-u	ʔal-dars-a	✓VS+partial agreement
		read 3sgmas	the-boys-nom	the-lesson-acc	
	c.	*ʔal-ʔawlaad-u	qaraʔa	ʔal-dars-a	*SV+partial agreement
		the-boys-nom	read 3sgmas	the-lesson-acc	
	d.	*qaraʔ-u	ʔal-ʔawlaad-u	ʔal-dars-a	*VS+full agreement
		read 3plmas	the-boys-nom	the-lesson-acc	

The occurrence of the SVAA with conjoined DPs, as illustrated in (1) and (2), is thus expected to follow from the analysis of the SVAA in general. In Soltan (2006), I propose that the preverbal DP in SV orders does not arrive to its surface position via movement, but is instead base-generated there and linked to a null element *pro* in the VP-internal subject position (cf. Fassi Fehri (1993) and Demirdache (to appear) for a similar base-generation analysis of SV orders where agreement

[3] Throughout the paper I will use the abbreviations "VS" for constructions with a postverbal DP, and "SV" for constructions with a preverbal DP. As the reader will notice shortly, while the use of "S" for "subject" is uncontroversial for VS orders, this is not necessarily the case with SV orders, where the initial DP has been argued to be a topic, rather than a grammatical subject. I will present evidence below that this is indeed the case.

[4] Agreement is "partial" in VS orders because even though the number feature surfacing on the verb is always singular in this context, the verb still shows gender agreement with the postverbal DP. In (4b) such gender agreement is not morphologically manifest, since the masculine agreement morpheme is null in this language. If the postverbal DP is feminine, a gender suffix (the traditionally called femininity marker *–t*) obligatorily appears on the verb, as the paradigm of data in (i) below illustrate:

(i)	a.	ʔal-fatayat-u	qaraʔ-na	ʔal-dars-a
		the-girls-nom	read-3plfem	the-lesson-acc
	b.	qaraʔa-t	ʔal-fatayat-u	ʔal-dars-a
		read-3sgfem	the-girls-nom	the-lesson-acc
	c.	*qaraʔa	ʔal-fatayat-u	ʔal-dars-a
		read-3sgmas	the-girls-nom	the-lesson-acc

morphology is treated as an incorporated pronominal). I provide empirical evidence for the correctness of this analysis from the facts of agreement with pronominal subjects as well as from the contrast between VS and SV orders with regard to the semantics of each structure, interaction with wh-extraction, as well as the Case properties of postverbal and preverbal DPs. I present these below.

One relevant fact about subject-verb agreement in SA which has been occasionally mentioned in the relevant literature is the lack of asymmetry in agreement with pronominal subjects, whether these pronominals are null (which is the unmarked case) or overt, and whether these pronominals precede (5a) or follow (5b) the verb. Partial agreement in these contexts is impossible (5c) (EV=epenthetic vowel):[5]

(5) a.	(hum)	qaraʔ-uu		ʔal-dars-a	✓SV+full agreement
	they	read 3plmas		the-lesson-acc	
b.	qaraʔ-uu		(hum-u)	ʔal-dars-a	✓VS+full agreement
	read 3plmas		they-EV	the-lesson-acc	
c.	*qaraʔa		hum-u	ʔal-dars-a	*VS+partial agreement
	read 3sgmas		they-EV	the-lesson-acc	

The same agreement pattern holds with conjoined subjects where the first conjunct is a pronominal: As (6) shows, full agreement in person, number, and gender between the verb and the first conjunct pronominal is obligatory:[6]

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[5] Notice here that since SA is a null subject language, overtness of the pronominal subject is a marked option and is always associated with emphasis/contrastive focus effects. In Soltan (2006), I argue that this overtness of a pronominal be treated as the result of a lexicalization requirement at the interface prohibiting focus/emphasis features from being associated with null elements.

[6] Unlike the case with non-conjoined pronominal subjects (cf. fn. 5), overtness of the pronominal conjunct here is obligatory and does not correlate with any emphasis/contrastive focus effects:

(i) a.	*ʒiʔ-tu	*pro*	wa	Hind-u
	came-1sg		and	Hind-nom
	"Hind and I came."			
b.	*ʒiʔ-na	*pro*	wa	ʔabaaʔ-u-hun
	came-3plfem		and	fathers-nom-their$_{FEM}$
	"They(fem) and their fathers came."			

In Soltan (2006), I propose that overtness of a pronominal conjunct is enforced by an interface condition requiring phonological parallelism of coordinate structures.

(6) a. ʒiʔ-tu ʔanaa wa Hind-u
came-1sg I and Hind-nom
b. ʒiʔ-na hunna wa ʔabaaʔ-u-hunna
came-3plfem they$_{FEM}$ and fathers-nom-their$_{FEM}$

Such facts on agreement with pronominal subjects or conjoined subjects whose first conjunct is a pronominal seem to point to the descriptive generalization in (7):

(7) Full agreement is always required when the subject is (or includes as a first conjunct) a pronominal, whether that pronominal is overt or null, and whether it occurs in pre- or postverbal position.

On the other hand, there is good empirical evidence that SV orders differ in several ways from their corresponding VS orders in their semantic, syntactic as well as Case properties. Semantically, SV orders have always been traditionally taken to represent TOPIC-COMMENT structures, involving what is sometimes called a "categorical" interpretation, whereby the preverbal DP is interpreted as topic of the discourse against which the event is presented, whereas their corresponding VS orders are assumed to denote the (default/unmarked) "thetic" interpretation, whereby an event is neutrally reported with the participants involved.[7] As it turns out, this is supported by the fact that indefinite nonspecific NPs cannot occur preverbally in SA, as the ungrammaticality of (8a) below indicates (cf. Fassi Fehri 1993, Mohammad 2000, Demirdache (to appear)):

(8) a. *walad-un kasara ʔal-baab-a
boy-nom broke 3sgmas the-door-acc
b. kasara walad-un ʔal-baab-a
broke 3sgmas boy-nom the-door-acc

This topic-like property of preverbal DPs in SV structures suggests that such DPs occupy a left-peripheral position in the sentence, in a way

[7] The thetic-categorical distinction is a traditional grammar notion that has been first revived within generative grammar in Kuroda (1972). Other research in generative syntax that has made use of this distinction includes Raposo and Uriagereka (1995), Basilico (1998), among others.

similar to LEFT-DISLOCATED (LD-ed, henceforward) elements, which also function as topics in syntactic structures.[8]

In addition to semantic differences, VS and SV orders differ with regard to their interaction with wh-movement: As Fassi Fehri (1993) points out, while extraction across a postverbal DP is nonproblematic, extraction across preverbal DPs is typically disallowed:[9]

(9) a. man Daraba Zayd-un
who hit 3sgmas Zayd-nom
b. *man Zayd-un Daraba
who Zayd-nom hit 3sgmas
"Who did Zayd hit?"

The contrast in wh-extraction between (9a) and (9b) could be explained if the preverbal DP in this language is actually sitting in an A'-position, unlike preverbal DPs in English-like languages, thus blocking wh-movement under standard minimality assumptions.[10] Wh-extraction facts thus indicate that the preverbal DP in SV orders is base-generated

[8] As already noted above, the analysis presented here has a lot in common with the so-called *incorporation* analysis of the SVAA, proposed independently by both Fassi Fehri (1993) and Demirdache (to appear), which is also in essence the classical analysis offered by Arabic traditional grammarians. For two convincing arguments against the incorporation analysis, see Benmamoun (2000). For how the analysis presented here differs from the incorporation analysis while escaping Benmamoun's objections, see Soltan (2007). An alternative analysis of the SVAA in terms of postsynatctic merger between the subject (number feature) and the verb is argued for in Benmamoun (2000), a full discussion of which is beyond the scope of this paper, but see Soltan (2007) for a discussion.

[9] As Elabbas Benmamoun (personal communication) points out, (9b) is acceptable in some of today's Arabic dialects. Notice, however, that in most of today's Arabic dialects, including those pointed out by Benmamoun, SV is the unmarked order. In addition, some of these dialects, e.g., Moroccan and Lebanese Arabic, do not exhibit the SVAA, as noted by Aoun, Benmamoun, and Sportiche (1994). If that is the case, an explanation for the absence of intervention effects in wh-questions in these dialects could be the result of SpecTP being an A- rather than A'-position. The parametric difference between SA and those dialects under this proposal lies then in a diachronic change of the status of SpecTP. For an elaborate discussion, see Soltan (2007).

[10] That SpecIP may parametrically be an A'-position has been independently argued for by Mahajan (1990) for Hindi and Borer (1996) for Modern Hebrew. See also fn. 9 above.

in its surface position in the sentence, rather than arriving there via movement from within the thematic domain.[11]

A third piece of empirical evidence for the A'-status of the position of the preverbal DP in SV structures in SA comes from the Case properties of post- and preverbal DPs. Postverbal DPs uniformly appear with nominative case, whereas preverbal DPs appear with nominative case only in absence of an available Case assigner (e.g., an overt C of the *ʔinna*-type or an Exceptional Case Marking (ECM) verb of the *want*-type). Consider the following data:

(10) a. qaraʔa ʔal-ʔawlaad-u ʔal-dars-a
read 3sgmas the-boys-nom the-lesson-acc
b. ʔal-ʔawlaad-u qaraʔ-uu ʔal-dars-a
the-boys-nom read 3plmas the-lesson-acc
c. ʔinna ʔal-ʔawlaad-a qaraʔ-uu ʔal-dars-a
C the-boys-acc read 3plmas the-lesson-acc
"(I affirm that) The boys read the lesson."

(11) a. ʔaraad-a Zayd-un ʔan ya-ðhab-a ʔal-ʔawlaad-u
wanted-3sgmas Zayd-nom C leave-3sgmas the-boys-nom
b. ʔaraad-a Zayd-un ʔal-ʔawlaad-a ʔan ya-ðhab-uu
wanted-3sgmas Zayd-nom the-boys-acc C leave-3plmas
"Zayd wanted the boys to leave."

The two sentences in (10a,b) show that both postverbal and preverbal DPs appear with nominative case. What (10c) shows, however, is that this is not always the case with preverbal DPs, since that DP obligatorily surfaces with (what is morphologically identical to) accusative case when preceded by a C of the *ʔinna*-type. Similarly, in ECM constructions of the *want*-type, the embedded subject will appear with nominative case if it stays in situ (11a). By contrast, if the ECM

[11] Interestingly, if a resumptive pronoun occurs in object position, hence presumably signaling absence of a movement operation in the structure, the order "Wh DP V" becomes possible, assuming minimality is a condition on movement operations:

(i) man Zayd-un Daraba-hu
who Zayd-nom hit 3sgmas-him
"Who did Zayd hit?"

subject appears preverbally, it will surface with accusative case assigned by the ECM verb (11b).[12] These Case facts suggest that the nominative appearing on both preverbal and postverbal DPs is not the same: nominative case assigned to postverbal DPs is structural, whereas nominative case appearing on preverbal DPs is actually the default case typically assigned to topics in this language in absence of any available lexical or structural Case assigner. That nominative is a default case in SA gains support from the Case properties of copular topic-comment constructions, where no overt verb occurs. In such structures, the so-called topic (and also the predicate if nominal or adjectival) will appear with nominative case:

(12) a. Zayd-un fii ʔal-daar-i
Zayd-nom in the-house-gen
b. Zayd-un MuʕallimunZayd-nom teacher-nom
c. Zayd-un saʕiid-un
Zayd-nom happy-nom

Summarizing the discussion on the status of preverbal and postverbal DPs in SA, there is good empirical evidence in favor of the following descriptive generalization:

(13) While postverbal DPs are noncontroversially subjects, preverbal DPs exhibit the semantic, syntactic and Case properties typically associated with topics/LD-ed elements.

[12] The assumption here, as it will be clear from the analysis presented in the following sections, is that preverbal ECM subjects like those in (11b) are base-generated in their surface position (perhaps Spec of embedded CP), where they get assigned accusative case. A movement analysis of ECM subjects will face the problem of explaining why the ECM subject needs to move if it can get Case-assigned in situ, as shown by (11a). For that movement analysis to work, a mechanism of Case overriding is needed, such that the nominative case assigned earlier to the ECM subject is then overridden by the accusative case assigned later by the ECM verb. For a discussion of the theoretical and empirical problems encountering a movement analysis of ECM in Standard Arabic, see Soltan (2007).

Given the two descriptive generalizations in (7) and (13), I argue in Soltan (2006) that the asymmetry in agreement properties between preverbal and postverbal DPs is due to a structural difference between the two word orders, such that VS and SV sentences are assigned the following structures, respectively:

(14) VS: [$_{TP}$ T+[*v**+V] [$_{v*P}$ DP t_{v*} [$_{VP}$ t_{V} YP]]]

(15) SV: [$_{TP}$ DP T+[*v**+V] [$_{v*P}$ *pro* t_{v*} [$_{VP}$ t_{V} YP]]]

In VS structures the postverbal DP remains inside the VP, where it is still accessible for agreement with T in a manner yet to be made precise. In the SV orders, the preverbal DP is base-generated in SpecTP, arguably an A'-position in this language, whereas the VP-internal subject position is occupied by a null element *pro* that is associated with the preverbal DP, in the same fashion LD-ed elements are linked to a resumptive pronoun in the thematic domain. The same analysis should straightforwardly extend to cases where the subject is a conjoined DP, thereby accounting for the agreement asymmetries noted earlier with regard to the sentences in (1-3).

To conclude this section, lack of asymmetry of subject-verb agreement with (typically null) pronominal subjects as well as the A'-properties associated with preverbal DPs, whether conjoined or nonconjoined, point in the direction of an analysis of the SVAA not in terms of movement and Spec-head agreement as some of the earlier analyses have proposed (see, for example, Mohammad 1990, 2000; Aoun *et al* 1994), but rather in terms of base-generation of preverbal DPs in their surface position.[13] Before I present the base-generation analysis in detail, however, in the next section I discuss an analysis of FCA in terms of Spec-head agreement, showing how it is empirically inadequate, hence the need for an alternative approach to FCA.

[13] As mentioned earlier, this is precisely the analysis of SV structures in Arabic traditional grammar. In the generative literature, the same analysis was proposed in Demirdache (to appear) as well as in Fassi Fehri (1993). The analysis that I will offer in the next section will share the underlying idea of the analyses in these works, but it will differ in details. See Soltan (2007) for an elaborate discussion.

3. A Spec-Head Agreement Approach to FCA

Aoun, Benmamoun, and Sportiche (1994) propose an analysis of FCA in terms of Spec-head agreement. According to them, FCA is only "superficial": cases of FCA, they argue, are actually derived through applying COORDINATION REDUCTION (CR) to an underlying clausal coordination structure, such that the Moroccan Arabic sentence in (16) is derived as in (17):

(16)	nʕas	Kariim	w	Marwan	fə-l-biit
	slept.3sg	Kareem	and	Marwan	in-the-room

(17) Derivation: Across-the-board verb raising + Right Node Raising

$[nʕas_j\ [_{IP}$ Kariim … t_i …]] w $[e_j\ [_{IP}$ Marwan … t_i …]] $[fə\text{-}l\text{-}biit]_i$

If conjunction is in fact clausal in FCA contexts, then we should expect the [DP and DP] string to fail semantic plurality tests, which, Aoun *et al* argue, is true in both Lebanese Arabic (LA) and Moroccan Arabic (MA). I illustrate here by citing their LA examples:

(18)	a.	Kariim	w	Marwan	raaħo	sawa	(LA)
		Kareem	and	Marwan	left.pl	together	
	b.	*raaħ	Kariim	w	Marwan	sawa	
		left.3sg	Kareem	and	Marwan	together	
	c.	raaħo	Kariim	w	Marwan	sawa	
		left.pl	Kareem	and	Marwan	together	

(19)	a.	Kariim	w	Marwan	biħibbo	ħaalun/baʕdun	(LA)
		Kareem	and	Marwan	love.pl	themselves/each other	
	b.	*biħibb	Kariim	w	Marwan	ħaalun/baʕdun	
		love.sg	Kareem	and	Marwan	themselves/each other	
	c.	biħibbo	Kariim	w	Marwan	ħaalun/baʕdun	
		love.pl	Kareem	and	Marwan	themselves/each other	

(20)	a.	*ltaʔa	Kariim	w	Marwan	(LA)
		met.3sg	Kareem	and	Marwan	
	b.	ltaʔo	Kariim	w	Marwan	
		met.3pl	Kareem	and	Marwan	

As the data in (18-20) show, occurrence of FCA is incompatible with the presence of an element that inherently denotes semantic plurality: the adverbial *sawa* (=together) in (18), plural reflexives and reciprocals in (19), as well as functioning as subject of intransitive "meet" (20). Under Aoun *et al*'s analysis, the explanation is simple: semantic plurality items cannot be licensed in FCA contexts for the simple reason that the surface string [DP and DP] is never a phrasal constituent at any point during the derivation; rather, it is the result of applying CR to a clausal coordination structure.[14]

Assuming that Aoun *et al*'s tests of semantic plurality are reliable diagnostics for the plurality of a string of the form [DP and DP] (but see fn. 14), their analysis still cannot be maintained for FCA in other languages where conjoined subjects in VS structures pass all these tests of semantic plurality. One such language is the closely related language of SA, where the adverbial *maʕan* (=together), the reciprocal *baʕD-a-hum ʔal-baʕD* (=each other), as well as the occurrence as subject of intransitive *ʔiltaqa* (=meet), are all possible in FCA contexts (cf. Harbert and Bahloul 2002):

(21) a. ʒaaʔa-t Hind-u wa Zayd-un maʕan
came-3sgfem Hind-nom and Zayd-nom together
"Hind and Zayd came."

b. tuħibbu Hind-u wa ʔaxaw-aa-haa baʕD-a-hum ʔal-baʕD
love.sgfem Hind-nom and brothers-nom-her some-acc-them the-some
"Hind and her two brothers love each other."

c. ʔiltaqa-t Hind-u wa ʔaxaw-aa-haa fii ʔal-ħafl-i
met.3sgfem Hind-nom and brothers-nom-her at the-party-gen
"Hind and her two brothers met at the party."

Harbert and Bahloul (2002:60) point out that the same is also true of Welsh, where occurrence of reciprocals (22a), functioning as subject of intransitive "meet" (22b), as well as the use of the inherently dual preposition "between" (23a,b), are all compatible with FCA:

[14] Munn (1999) raises serious doubts on the adequacy of the tests that Aoun *et al* use in support of their analysis, to which Aoun, Benmamoun, and Sportiche (1999) reply. For considerations of space, I will not discuss these here, referring the reader to these sources for an extensive discussion

(22) a. Es i a'm brawd gyda ein gilydd
went.1sg I and-my-brother with each other
b. Cwrddais i a'm brawd ym Mharis
met.1sg I and-my-brother in Paris

(23) a. cynnen rhyngof fi a thi
strife between.1sg me and you
b. cwlwm o gariad sydd rhyngoch chwi a hi
bond of love which-is between.2pl you and her

Similarly, Johannessen (1996) provides examples from Czech where FCA does occur in the presence of semantic plurality items such as the so-called "strong *and*" *i* (=both), and distributive "each", as illustrated by the examples in (24a,b), respectively:

(24) a. Püjdu tam já i ty
will-go.1sg there I.nom and you.nom.2SG
"Both of you and I will go there."
b. Po jednom jablku sndl Jan a Petr
at-the-rate-of one.loc apple-loc ate.3sg John and Peter
"John and Peter ate an apple each."

To conclude, even if a CR analysis of FCA constructions in MA and LA was feasible, there is overwhelming evidence that FCA constructions in SA, Welsh, and Czech cannot be derived from an underlying clausal conjunction structure, therefore casting doubts on the adequacy of the Spec-head approach to FCA, hence the need for an alternative analysis that follows from general mechanisms that are independently needed in the theory of grammar. This is the topic of the next section.

4. The SVAA Revisited: A Base-Generation Analysis

Recall from Section 2 that there are two main agreement facts for sentences with conjoined DPs that we are trying to account for: First, that agreement on the verb is full (i.e., in all ϕ-features) if the conjoined DP is in preverbal position, but partial (i.e., restricted to gender only) if the conjoined DP is in postverbal position. Second, agreement with a postverbal conjoined subject is with the first conjunct only, not with the whole DP or with the last conjunct. As argued in the previous section,

to account for the asymmetry in agreement between SV and VS orders, I will assume that VS and SV orders differ structurally along the lines in (25) and (26):

(25) VS: [$_{TP}$ T+[*v**+V] [$_{v*P}$ DP t_{v*} [$_{VP}$ t_V YP]]]

(26) SV: [$_{TP}$ DP T+[*v**+V] [$_{v*P}$ *pro* t_{v*} [$_{VP}$ t_V YP]]]

In Soltan (2006, 2007), I argue that, given the structural distinction between (25) and (26), a natural solution for the SVAA arises: full agreement obtains in the SV orders because of the presence of a pronominal subject, which is in essence the generalization in (7). Partial agreement in the VS order could be viewed then as the result of a default agreement morpheme on T(ense) in this language.[15] Still, this does not explain why full agreement is obligatory when the subject is pronominal, but not so when the subject is a lexical DP. An answer to this question is readily available from one of the standard assumptions of *pro* theory: the so-called PRO IDENTIFICATION REQUIREMENT (cf. Rizzi 1982, McCloskey 1986), which can be reformulated as an interface condition (perhaps holding at PF):[16]

(27) A null element *pro* has to be identified at the interface, where identification is established by a head with a complete ϕ-complex associated with *pro*.[17]

Given (27), the presence of full agreement in SV orders comes down to an interface requirement on the structure in (26): agreement has to be full or *pro* will not be identified. Since lexical DPs are not subject to an

[15] In Soltan (2006), I assume that gender agreement is due to the presence of a CLASS feature on T that is not part of the ϕ-complex. See also Ouhalla (2005) for a similar proposal. I will get back to this later on in this paper.

[16] The occurrence of *pro* should also be subject to another interface condition of interpretability such that *pro* has to be interpretable, reasonably enough an LF condition. Interpretation of *pro* is achieved through coreference with an antecedent in the sentence or in the discourse.

[17] I'm ignoring here pro-drop languages of the Chinese-type, where agreement morphology is null, hence cannot serve as an identifier for *pro*. In such languages, *pro* identification has to proceed in a different fashion. I do not have anything to contribute to the discussion of *pro* licensing in such languages at the moment.

identification requirement, full agreement is not required for interface convergence; default agreement is therefore allowed.[18]

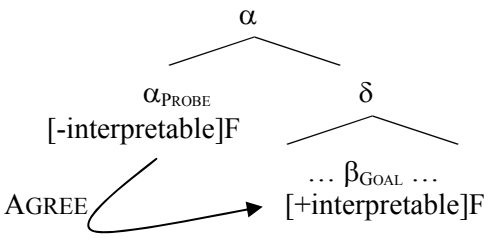
In sum, SV orders in SA differ from VS orders in that the former contain a *pro* subject in the VP-internal subject position, associated with a preverbal DP, in the same way a LD-ed DP is related to a resumptive pronoun. Since *pro* is subject to an identification requirement, full agreement is always manifest to allow the derivation to converge at the interface. Lexical DPs, by contrast, need not be identified; hence, the occurrence of either default agreement (as in SA) or full agreement (as in MA/LA) is possible in VS orders. If this analysis is correct, then the surface SVAA in SA can be explained in terms of the conditions imposed by the interface systems on structural representations, a result that seems in conformity with the strong minimalist thesis that language design is such that it satisfies bare output condition. It remains, however, to see if this informal analysis can be cast within a minimalist framework. I turn to this next.

5. Deriving FCA: AGREE and Postcyclic Merge

5.1 Theoretical assumptions

To provide an account of FCA, I will assume, following Chomsky (2000, 2001a, 2001b), that agreement is induced in syntactic structures through the application of a primitive grammatical operation AGREE, specifically designed for that purpose. More precisely, AGREE is a head-head relation that takes place at a distance (rather than in a Spec-head configuration) within a local search domain:

(28)



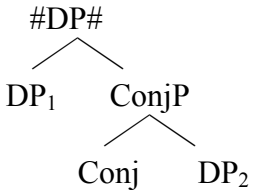
[18] As noted earlier (see fn. 5 and 6), overtness of a pronominal subject will be forced by interface conditions, such as the requirement that emphasis/focus features be represented on a phonologically overt element, and the requirement that coordinate structures be parallel in their phonological content.

As diagrammed in (28), AGREE is an operation that establishes a relationship between an element α (call it a PROBE) with uninterpretable features and an element β (call it a GOAL) with matching interpretable features in the domain of α, whereby the uninterpretable features on the PROBE are valued by the matching interpretable features on the GOAL. Typical examples of uninterpretable features are ϕ-features or wh-features on functional heads, or Case on nominals. Long distance agreement is attested in natural language grammar, as in English expletive constructions, for example:

(29) [There T seem [to be two men in the room]]
AGREE

In addition to AGREE, I will adopt the following assumptions with regard to the structural and morphological properties of conjoined DPs (notated as #DP#, henceforward). First, conjoined phrases are hierarchically organized (Munn 1992, Kayne 1994), though I choose here to follow Munn (1993, 1999) in assuming that the hierarchical organization within a conjoined phrase is actually the result of adjunction. More precisely, the conjunction head plus its DP_2 complement form an adjunct of DP_1, as shown in (30) below:

(30)



Second, adjuncts can be introduced into the derivation "noncyclically", via an operation of late-Merge, an idea first suggested in Lebeaux (1988), and implemented in different ways in Chomsky (1993), Fox and Nissenbaum (1999), and Uriagereka (2002). Postcyclic Merge has typically been proposed to account for certain LF effects (e.g., binding) that cannot be accounted for under a strictly cyclic derivation. Consider the examples below, for instance:

(31) Which picture [$_{\text{COMPLEMENT}}$ of Bill$_i$] [$_{\text{ADJUNCT}}$ that John$_j$ liked] did he$_{*i/j}$ buy?

(32) a. Which claim [$_{\text{COMPLEMENT}}$ that John$_i$ was asleep] was he$_{*i}$ willing to discuss?

b. Which claim [$_{\text{ADJUNCT}}$ that John$_i$ made] was he$_i$ willing to discuss?

In (31), while conference between *Bill* and *he* is disallowed, coreference between *John* and *he* is possible, even though both DPs c-command the pronominal, in violation of BINDING CONDITION C. A postcyclic approach to adjuncts is able to solve that problem, however, if at the point where binding conditions are evaluated the adjunct relative clause has not been Merged yet. The same proposal can also account for the asymmetry in binding possibilities between (32a) and (32b): Binding of *he* by *John* in (32a) violates Condition C; binding of *he* by *John* in (32b) is possible since the binder DP is contained within an adjunct clause that can be inserted postcyclically, thereby allowing the apparent violation of Condition C. In this paper I would like to argue that postcyclic Merge may also have comparable effects at the PF level. In particular, FCA is argued to be the result of postcyclic Merge interacting with the operation AGREE in the course of the derivation.

A third assumption with regard to conjoined phrases is that the ϕ-features of the root node #DP# are determined via the application of the so-called FEATURE RESOLUTION RULES (FRRs), e.g., first person+second person=first person; singular+dual=plural; masculine+feminine= masculine; etc., (cf. Corbett 1983, 2000 for an extensive discussion).

Finally, consider the inventory of uninterpretable features on T. These should include ϕ-features for the traditional Person and Number features, which may also happen to have DEFAULT values. Assume a separate CLASS feature, familiar from languages with rich classifier systems, which is morphologically manifest as a Gender feature in many languages. If Gender is not part of the ϕ-complex on T, then it should be able to probe separately for the purposes of AGREE (see Ouhalla 2005). Furthermore, T may appear with an EPP feature, understood here as the requirement to be "an occurrence of something," where an occurrence of α is a sister of α (Chomsky 2001b). In principle, then, T can appear with ϕ, CLASS, EPP, or any combination of these three, subject to lexical parameterization.

5.2 *Deriving full agreement with preverbal conjoined DPs in SV structures*[19]

For simplicity of presentation, suppose that our target Arabic SV structure is "*John and Mary read the book*" with full agreement surfacing on the verb "read." Given the theoretical assumptions made earlier in this section and the empirical evidence discussed in Section 3, the structure of this sentence is as in (33) below, where #DP# is the conjoined phrase "*Mary and John*":

(33) $[_{CP}$ C $[_{TP}$ #DP# $T_{\phi/CLASS/EPP}$ $[_{v*P}$ *pro* v* $[_{VP}$ …]]]]

AGREE

At the interface, since *pro* is identified by the agreement features on T, the derivation converges. The impossibility of partial/default agreement is ruled out by the interface condition on *pro* identification in (27), whereas the impossibility of FCA follows simply from the fact that the first conjunct (or the whole conjoined phrase for that matter), being base-generated in SpecTP, is never in the search domain of T.

Notice that under this analysis we can now account for the set of semantic, syntactic, and Case properties associated with SV orders (cf. Section 2). First, indefinite nonspecific NPs cannot be associated with *pro*, which is inherently a D head, hence their incompatibility with occurrence in preverbal position. Second, if SpecTP is parametrically an A'-position, wh-extraction across a DP in SpecTP is then blocked by familiar minimality considerations. Wh-extraction across a DP in Spec$v$*P is permissible, though. Third, a DP in postverbal position will always be assigned nominative case under AGREE with T. By contrast, a DP in preverbal position will be assigned default nominative case, unless a lexical or structural Case-assigner is available in the structure, e.g., an overt C or an ECM verb, as schematically shown in (34) below:

[19] Assume verb raising to v* and T throughout, perhaps an operation of the phonological component driven by the affixal properties of functional heads (cf. the structures in (25) and (26) in Section 4). For simplicity of presentation, I will not show this in the structural representations in this section.

(34) a. [$_{CP}$ ʔinna [$_{TP}$ #DP# $T_{\phi/CLASS/EPP}$ [$_{v*P}$ *pro* *v** [$_{VP}$ …]]]]
Case

b. [$_{VP}$ V_{ECM} [$_{CP}$ #DP# [$_{TP}$ $T_{\phi/CLASS/EPP}$ [$_{v*P}$ *pro* *v** [$_{VP}$ …]]]]]
Case

5.3 Deriving FCA: The option of AGREE prior to late adjunction

Consider now FCA in the VS order. Here our target structure is "*Read Mary and John the book*," with the verb showing feminine gender agreement with the first conjunct *Mary*. If we followed the same assumptions as in the derivation of structures with preverbal conjoined subjects in the previous section, we should predict full, not first conjunct, agreement to obtain between T and postverbal #DP# subject, as shown in (35) below:

(35) [$_{TP}$ $T_{DEFAULT/CLASS}$ [$_{v*P}$ [$_{\#DP\#}$ DP_1 [$_{ConjP}$ Conj DP_2]] *v** [$_{VP}$ V…]]]
AGREE ✓
AGREE X

What (35) shows is that at the point when T probes, it is the conjoined #DP# that is available as a GOAL for feature valuation. The first conjunct DP_1 is now "'buried" within a substructure whose internal elements are, by assumption, inaccessible for further syntactic operations. While the derivation in (35) is still needed since occurrence of full agreement in such contexts is attested in natural languages, as Aoun *et al* argue is the case in Lebanese and Moroccan Arabic (data will be provided shortly), still a problem arises with regard to languages such as SA, where FCA is the only option in such contexts. I would like to argue here that it is in languages like SA that the option of postcyclic Merge of adjuncts is available for adjunct ConjPs. Specifically, FCA may now be understood as the result of allowing AGREE to take place with the VP-internal subject prior to the late adjunction of ConjP to that subject. More concretely, in the derivation of the sentence "*Read Mary and John the book*," there is a point at which we construct the following *v**P:

(36) [$_{v*P}$ Mary *v** [$_{VP}$ V …]]]

Suppose, we then Merge T, thereby inducing a subsequent AGREE relationship between T and the DP *Mary* in the *v**P-internal subject position:

(37) [$_{TP}$ T [$_{v*P}$ Mary *v** [$_{VP}$ V …]]]
AGREE

Postcyclically, we can then late-Merge the adjunct ConjP "*and John*" to the DP *Mary*, at which point FRRs apply to compute the ϕ and CLASS features of the conjoined DP, thereby licensing elements denoting semantic plurality (e.g., plural reflexives, reciprocals, "both," "each," etc.):

(38) [$_{TP}$ T [$_{v*P}$ [$_{\#DP\#}$ Mary [$_{ConjP}$ and John]] *v** [$_{VP}$ V …]]]

FCA is thus the result of agreement taking place prior to the introduction of the adjunct ConjP by late-Merge.

While the above analysis can account for FCA in SA and similar languages, questions arise as to how to make sure that using the option of postcyclic Merge will not lead to overgeneration of ungrammatical structures in natural languages. In this respect, I discuss three such cases of potential overgeneration below, arguing that they are either ruled out by independently needed principles of the grammar, or are actually attested in natural languages, hence providing further support to the analysis presented here.

First, consider the case where we Merge the first conjunct in Spec*v**P, allow T to AGREE with it, then late-Merge ConjP, and then move the whole conjoined subject #DP# to SpecTP to license EPP, thereby deriving the bad sentence in (39) where FCA obtains in an SV structure, claimed to be unattested in human languages (Corbett 2000):

(39) *John and I loves each other.

Notice, however, that this derivation is ruled out, by a basic assumption of AGREE-based syntax: "Move is dependent on AGREE" (Chomsky 2001a, 2001b). Since T never Agrees with #DP#, movement of that #DP# is not permitted.

A second case of potential overgeneration may occur if we Merge the first conjunct in Spec*v**P, allow T to AGREE with it, then late-Merge ConjP, and then move the AGREED-with first conjunct to SpecTP to license EPP, thereby deriving the ill-formed structure in (40) below in a language like English:

(40) *John has [*t* and I] met each other.

But this derivation is obviously ruled out by the COORDINATE STRUCTURE CONSTRAINT (CSC). Notice, however, that the analysis presented here makes an interesting prediction in cases such as (40): Suppose that the EPP feature on T in this case can be satisfied in some other way than moving the AGREED-with DP, say by an expletive in existential constructions, then we should predict that FCA becomes possible, since no potential violation of the CSC arises in this case, a prediction that is borne out by the grammaticality of FCA structures such as (41) below from English:

(41) There is a man and two women in the room.

Finally, notice that if late-Merge of adjuncts is an option, we should be able to "early-Merge" ConjP as well, thereby predicting full agreement rather than FCA to obtain in some languages. As noted earlier, this is true in some of today's dialects of Arabic, as reported by Aoun *et al* (1994) for LA and MA:

(42) a. raaħo Kariim w Marwan sawa LA
left.pl Kareem and Marwan together
"Kariim and Marwan left together."

b. biħibbo Kariim w Marwan ħaalun/baʕdun
love.pl Kareem and Marwan themselves/each other
"Kariim and Marwan love themselves/each other."

Complementizer agreement in Dutch and German also shows a similar range of possibilities: FCA only in Tegelen Dutch (43); full agreement only in Lapscheure Dutch (44); both options in Bavarian German (45) (data from von Koppen 2005):

(43) de-s doow en ich ôs treff-e
that-2sg you and I each other meet pl
"… that you and I could meet."

(44) Kpeinzen da-n [Valère en Pol] morgen goa-n
I.think that-3pl Valère and Pol tomorrow go-pl
"I think that Valère and Pol will go tomorrow."

(45) a. daβ-sd du und d'Maria an Hauptpreis gwunna hab-ds
that-2sg you_{sg} and the-Maria the first-prize won have-2pl
b. daβ-ds du und d'Maria an Hauptpreis gwunna hab-ds
that-2pl you_{sg} and the-Maria the first-prize won have-2pl
"… that Maria and you have won the first prize."

To summarize the analysis presented here, FCA arises from the interaction between two independently needed mechanisms of the grammar: AGREE and late-Merge of adjuncts. Since AGREE, by definition, is a "downward" operation, it follows that FCA can only obtain with arguments in postverbal position, a robust fact across human languages (cf. Corbet 2000). A Spec-head approach to agreement, however, cannot provide an analysis for these "downward" and "postverbal" properties of FCA without extra stipulations.

6. Conclusions

The goal of this paper has been to revisit the classical phenomenon of FCA in SA from a minimalist perspective. I have argued that full agreement with preverbal conjoined subjects is in fact the result of T AGREEING with a null subject *pro* in the VP-internal subject position, necessarily required to be full by the interface condition on *pro* identification. By contrast, FCA is argued to be the result of AGREE between T and the first conjunct in the thematic domain prior to the application of postcyclic Merge which adjoins ConjP to that first conjunct to form a conjoined subject. If correct, the analysis presented in this paper lends further support to a theory of agreement in terms of an AGREE relation rather than in a Spec-head configuration. In addition, it also provides evidence that late-Merge of adjuncts not only has consequences at the LF interface, but at the PF interface as well.

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