Agreement with Conjoined Subjects in Arabic

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Arabic first conjunct agreement (FCA) is predictable with the right understanding of Arabic clause structure, as well as standard assumptions of Minimalist syntax regarding:

   (i) Locality constraints on subject-verb agreement
   (ii) A connection between agreement and movement
   (iii) Constraints on syntactic movement

The analysis presented here differs from other recent analyses which require either non-canonical assumptions about clause structure or use non-standard technical mechanisms. These moves are unwarranted, as standard assumptions suffice to explain FCA. Moreover, the approach presented here has greater empirical coverage than other approaches.

Insofar as this analysis is able to capture the facts of FCA, it also provides additional evidence for the standard assumptions upon which it is based.

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1 An Agree-based analysis of first conjunct agreement

1.1 First conjunct agreement

FCA refers to the phenomenon in which agreement-bearing elements agree with the ϕ features of the first conjunct of a conjoined DP, rather than the ϕ features of the full conjunction (full agreement).

FCA is a feature of both Standard Arabic (SA) and many non-standard dialects of Arabic, including Lebanese Arabic (LA). SA and LA allow both pre-verbal and post-verbal subjects. In LA, FCA is optional with post-verbal conjoined subjects, but full agreement is also possible. Only full agreement is possible with pre-verbal conjoined subjects.

(1) a. raah-o/-∅ karim w marwan (LA)
   leave.PST-3P/-3MS Kareem and Marwan
   ‘Kareem and Marwan left.’

b. karim w marwan raah-o/*-∅ (LA)
   Kareem and Marwan leave.PST-3P/-3MS
   ‘Kareem and Marwan left.’

1.2 Mixed agreement

SA and LA also exhibit the phenomenon of mixed agreement (cf. McCloskey 1986, Munn 1999), in which both FCA and full agreement co-occur in the same clause on distinct agreement-bearing elements.

Mixed agreement is seen in clauses including an auxiliary as well as a main verb. The auxiliary must always precede the main verb. Subjects may either precede the auxiliary, appear medially between the auxiliary and the main verb, or follow the main verb. FCA is possible on either the verb or the auxiliary if it precedes the subject.

(2) a. karim w marwan keen-o/*-∅ ſam ya-ā-drus-o/*-∅. (LA)
   Kareem and Marwan AUX.PST-3P/-3MS PROG 3M-study-P/-S
   ‘Kareem and Marwan were studying.’

b. keen-o/-∅ karim w marwan ſam ya-ā-drus-o/*-∅. (LA)
   AUX.PST-3P/-3MS Kareem and Marwan PROG 3M-study-P/-S
   ‘Kareem and Marwan were studying.’

c. keen-o/-∅ ſam ya-ā-drus-o/-∅ karim w marwan. (LA)
   AUX.PST-3P/-3MS PROG 3M-study-P/-S Kareem and Marwan
   ‘Kareem and Marwan were studying.’

Example (2b) in which the auxiliary realizes FCA illustrates mixed agreement. In (2c), where the conjoined subject follows both the auxiliary and the main verb, both must show full agreement or both must show FCA. There can be no mismatch between the auxiliary and the main verb.
2 Arabic Clause Structure

I assume a clause structure for Arabic based on the proposal in Tucker (2011). This clause structure closely resembles other proposals for Arabic clause structure, including those appearing in Fassi Fehri (1993), Ouhalla (1994), Mohammad (2000).

Verbs successively cyclically raise from V to T if possible. In clauses containing an auxiliary, the auxiliary occupies T and verbs raise to Asp. Subjects are initially merged in the specifier position of vP and may optionally raise to [Spec, AspP] or [Spec, TP], regardless of the presence or absence of an auxiliary.

3 First conjunct agreement in Lebanese Arabic via Agree

3.1 Agree

Following Chomsky (2000, 2001), I assume that subject-verb agreement is achieved via the operation Agree, defined below.

(6) A functional head F (the probe or ϕ probe) Agrees with a node X (the goal or ϕ goal) iff:

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1Some of the differences between my proposal and Tucker’s are purely notational (e.g. Tucker’s Voice is equivalent to my v). I also depart from this proposal in assuming the subject may remain in [Spec, vP] at the end of the syntactic derivation. Tucker claims the subject must raise to at least [Spec, AspP].
a. F has unvalued \( \varphi \) features (\( u\varphi \) features).
b. X has valued \( \varphi \) features.
c. F c-commands X.
d. There is no node Y such that F c-commands Y, Y asymmetrically c-commands X, and Y has valued \( \varphi \) features.

I also follow Chomsky (2000, 2001) and Preminger (2011) in assuming a close connection between agreement and movement to subject positions. Specifically, I assume that movement of a DP to the specifier position of a phrase FP requires an Agree relation between F and the DP in question.

In the clause structure given above, I take T and Asp to both enter the syntactic derivation with \( u\varphi \) features. Movement of a DP to either [Spec, TP] or [Spec, AspP] is dependent upon that DP having an Agree relationship with either T or Asp.

### 3.2 The analysis

Following, Munn (1993), Kayne (1994), and Zoerner (1995), I assume that conjoined phrases have an asymmetrical structure in which the first conjunct asymmetrically c-commands the second conjunct.

When a conjoined DP is within the c-command domain of a functional head F with \( u\varphi \) features, the full conjunction and the first conjunct will be potential goals for Agree, since neither the DP corresponding to the full conjunction nor the DP corresponding to the first conjunct asymmetrically c-commands the other. The second conjunct is not a potential goal, since the first conjunct DP asymmetrically c-commands the second conjunct DP.

If movement of a DP to [Spec, FP] is required, and F Agrees with the full conjunction DP, nothing inhibits movement of this DP to [Spec, FP]. However, if F Agrees with the first conjunct DP, movement is blocked by the Coordinate Structure Constraint (CSC) in the sense of Ross (1967).\(^2\)

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\(^2\)Although the CSC is traditionally taken to apply to \( \hat{A} \)-movement, there is some work establishing that it applies to A-movement as well. See Burton and Grimshaw (1992) and Lin (2001). Bošković (2009), which discusses FCA and last conjunct agreement (LCA) in Serbo-Croatian, also assumes that the CSC is relevant to A-movement. I also note that recent work such as Hofmeister and Sag (2010) argues that so-called “islands” should be accounted for in terms of processing, rather than by syntactic constraints. However, among island constraints, the CSC appears to be one of the least amendable to a processing account. Hofmeister and Sag write, "The claim that competence grammar has no need for a subjacency condition or a WH-island constraint should not be misconstrued as a claim that there are no constraints (or even universal island constraints) within competence grammar; for example, there is sparingly little counterevidence to the CONJUNCT CONSTRAINT (part of Ross’s (1967) COORDINATE STRUCTURE CONSTRAINT)” (368).
This predicts that if the subject remains below F, FCA or full agreement is possible. If the subject must raise to [Spec, FP], then only full agreement is possible.\(^3\)

\[(8)\]

\[\begin{array}{ll}
\text{a.} & \text{FP} \\
& F \[u\varphi\] \\
& \varphi \rightarrow \text{DP} \[\varphi\] \\
& \varphi \rightarrow \text{DP} \[\varphi\] & \& \text{DP} \[\varphi\] \\
\text{b.} & \text{DP} \\
& F \[u\varphi, uD\] \\
& \varphi \rightarrow \text{DP} \[\varphi\] \\
& \varphi \rightarrow \text{DP} \[\varphi\] & \& \text{DP} \[\varphi\]
\end{array}\]

Consider LA clauses containing no auxiliary, such as (1a) and (1b), repeated below as (9a) and (9b).

\[(9)\]

\[\begin{array}{ll}
\text{a.} & \text{raah}-\emptyset/-\emptyset \text{ kariim w marwan (LA)} \\
& \text{leave.PST-3MS/-P Kareem and Marwan} \\
& \text{‘Kareem and Marwan left.’} \\
\text{b.} & \text{kariim w marwan raah-\emptyset/\emptyset (LA)} \\
& \text{Kareem and Marwan leave.PST-3P/-3MS} \\
& \text{‘Kareem and Marwan left.’}
\end{array}\]

Now consider the state of the syntactic derivation immediately after the verb has raised to T.

\[(10)\]

As shown in (10), T has two potential goals: The DP corresponding to the full conjoined subject and the DP corresponding to the first conjunct. As described above, if the subject remains below T, either full agreement or FCA is realized (9a). If the subject must raise to [Spec, TP], T must Agree with the full conjunction (9b).

Now consider the case of clauses containing auxiliaries, as in (2a)-(2c). These examples are repeated below as (11a)-(11c).

\(^3\)This analysis closely resembles the analysis of FCA in Biblical Hebrew presented in Doron (2000). It also resembles some aspects of the analysis of Dutch complementizer agreement in van Koppen (2005, 2007) and the analysis of FCA and LCA in Bošković (2009).
Consider the state of the derivation immediately after the verb has raised to Asp.

Like T in the earlier example, Asp may Agree with either the full conjoined DP or the first conjunct, but not the second conjunct. Again, if movement to the specifier position of Asp is required, then only full agreement is possible. This correctly predicts that full agreement will be possible with the main verb if it follows the subject, as in (11a) and (11b), but FCA will be possible if the main verb precedes the subject, as in (11c).

Now consider what happens when T is merged into the derivation. If the subject has raised to [Spec, AspP], the analysis will be as in the non-auxiliary cases (10). However, if the subject has remained below Asp, then neither the full conjunction nor the first conjunct will be a potential goal. Rather, T will Agree with Asp.

Asp asymmetrically c-commands the subject DP, blocking agreement with both the full conjunction and the first conjunct. This correctly predicts that when the subject remains below Asp, the auxiliary in T and the main verb in Asp must have matching agreement.
4 Alternative Analyses

4.1 Aoun et al. (1994, 1999): A biclausal analysis of first conjunct agreement

Aoun et al. (1994, 1999) argue that what appears to be FCA in Arabic dialects is not “true” first conjunct agreement. Rather, it is the result of clausal coordination of two clauses with singular subjects, followed by across-the-board movement of the subjects to the first clause and right node raising of any objects to the second clause.

(14) daras-it fatme w zeina l-inglizii. (LA)  
study.PST-3FS Fatima and Zeina the-English.  
‘Fatima and Zeina studied English.’

Munn (1999) provides a number of arguments against this approach:

(16) a. The biclausal analysis does not explain why this combination of across-the-board movement and right node raising can only occur if the subject is post-verbal.

b. FCA is acceptable in sentences where a quantified NP in the first conjunct of the subject binds a pronoun in the second conjunct, suggesting that the two conjuncts are in the same clause.

c. FCA is possible with predicates that require a semantically plural subject (e.g. بَنَادَةَ حَلْثَا حَوَّلَ فَفَاجِرْ “form a circle around the tree”).

In addition to these arguments from Munn, the possibility of mixed agreement also shows that the biclausal analysis is untenable. In clauses where the auxiliary realizes FCA and the main verb realizes full agreement, Aoun et al. would be forced to argue that FCA on the auxiliary arises from a biclausal structure. However, this would mean that neither clause has a plural subject, leaving the plural agreement on the main verb unexplained.

4.2 Soltan (2006, 2007) and Larson (2013): First conjunct agreement via late operations

Two more recent accounts of Arabic FCA come from Soltan and Larson (2013). While the details of these accounts differ, they share the same general approach. For both, full agreement with the conjoined subject requires some syntactic operation to occur prior to Agree. If this operation is delayed until after Agree has occurred, FCA is realized.

Soltan: In cases of FCA, the second conjunct enters the derivation post-cyclically via late Merge. When Agree occurs, only the first conjunct is present in the syntax.

Larson: In cases of FCA, the conjoined subject has been Concatenated, but not Labeled (cf. Hornstein 2009). This leaves only the first conjunct available for Agree.

There are several reasons to prefer the approach presented in §3 over these analyses. First, Soltan’s and Larson’s require additional technical machinery, either late Merge or late Label. The account proposed in §3 relies only on standard assumptions about agreement and movement.
Second, these approaches fail to account for the mixed agreement data. First, suppose the relevant operation necessary for full agreement (e.g. Merge, Label) has occurred once Asp enters the derivation. Then the main verb will realize full agreement. Suppose that the subject then raises to [Spec, Asp]. Since the relevant operation necessary for full agreement has occurred and there is no way to “undo” this operation, T must also realize full agreement. Therefore, mixed agreement should be impossible.\(^4\)

Next, suppose that the relevant operation necessary for full agreement has not occurred when Asp enters the derivation. Then Asp will be forced to realize FCA along with T. Again, there is no way to generate the mixed agreement pattern.

## 5 Conclusion

The account presented here is able to capture a wider range of facts relating to FCA than other approaches without resorting to non-standard assumptions about clause structure or non-standard technical mechanisms. This analysis of FCA in LA raises further issues:

(i) In SA, FCA is ostensibly obligatory with post-verbal subjects, but on this account FCA should just be optional with post-verbal subjects. In my QP, I argue that full agreement is also possible with post-verbal subjects in SA, but that this is obscured by an independent process that deletes number information from the verb when the subject is post-verbal.

(ii) What happens if some of these assumptions are relaxed, such as the connection between agreement and movement (Bobaljik 2008)? Several options: agreement with unpronounced lower copies (van Koppen 2005), bidirectional Agree (Baker 2008).

(iii) The analysis here relies on syntactic general principles, suggesting that FCA should be the norm, rather than the exception. Why is FCA not more commonly attested? Perhaps it is: Biblical Hebrew (Doron 2000), Brazilian Portuguese (Munn 1999), Dutch (van Koppen 2005), English (Munn 1999), Finnish (van Koppen 2005), Hindi-Urdu (Bhatt and Walkow 2013), Modern Greek (Doron 2000), Modern Irish (McCloskey 1986), Serbo-Croatian (Bošković 2009), Spanish (Doron 2000), Tsez (Benmamoun et al. 2009), …

(iv) This account suggests why both FCA and full agreement should be options with post-verbal subjects, but says nothing about factors influencing speakers’ preferences for or the frequency of these options.

## References


\(^4\)Of course, on my account FCA is still possible when the full conjunction is a potential goal. Crucially, both Soltan and Larson assume that if agreement with the full conjunction is possible, FCA is impossible.


