

SQUIB

Concord and agreement features in Modern Standard Arabic

Lindley Winchester

Georgetown University, US
lw599@georgetown.edu

This squib proposes a split approach to adjectival agreement in Modern Standard Arabic in the Distributed Morphology framework and adds to an ongoing debate in the morphosyntactic literature regarding the location of agreement in grammar (Adger & Harbour 2008; Polinsky 2016). Based on the distinctive distribution of gender/number features and definiteness/case features on attributive and predicative adjectives, I argue that gender and number features are agreement features that are manipulated in the syntax through Bidirectional Agree (Baker 2008; Baier 2015) while definiteness and case features are concord features shared through Morphological Feature Copying and AGR node insertion at PF (Norris 2014). In further discussion of case features, I show that case features may be valued either at PF for attributive adjectives, like definiteness features, or in the syntax via case assignment for predicative adjectives. As such, the analysis predicts the distribution of gender, number, definiteness, and case features on both predicative and attributive adjectives in Modern Standard Arabic. In doing so, it provides novel evidence in support for the division of agreement and concord features in language derivation.

Keywords: Agreement; concord; Distributed Morphology; Modern Standard Arabic

1 Introduction

Attributive and predicative adjectives in Modern Standard Arabic (MSA from here) exhibit distinctive agreement behaviors which are indicative of a theoretical division between agreement features. While attributive adjectives agree in gender, number, definiteness, and case with their respective noun (1), predicative adjectives only agree in gender and number (2).

- (1) Adapted from Ryding (2005: 21)
raʔiis-a-n dzadiid-a-n
president.M.SG-ACC-INDEF new.M.SG-ACC-INDEF
'a new (male) president'
- (2) Adapted from Assiri (2011: 5)
kaana ʔar-radʒul-u mariid^ʕ-a-n
COP.PST DEF-man.M.SG-NOM sick.M.SG-ACC-INDEF
'The man was sick.'

Notice that the attributive adjective in (1) carries an accusative and indefinite suffix like its modified noun. In (2), the predicative adjective also takes the accusative and indefinite suffix but, in this context, these features differ from the nominative and definite features shown on the subject DP, 'the man'. However, both types of adjective share the gender and number features of their modified noun/subject DP. This suggests that

gender and number operate independently from definiteness and case. In this paper, I analyze this division between agreement features in MSA using a split approach to agreement in the Distributed Morphology framework (cf. Halle & Marantz 1993; 1994; Harley 1999; Embick & Noyer 2007; a.o.). Similar to Baier (2015)'s analysis of Noon adjectival agreement, I argue that gender and number features can be accounted for via Bidirectional Agree in the syntax while definiteness and case features are predicted via AGR insertion and Morphological Feature Copying at PF (cf. Norris 2014). In using this split approach, it is predicted that gender and number features appear on adjectives located both external and internal to the DP but definiteness and case are limited to agreement on DP-internal adjectives. As such, this squib introduces novel data to a current debate regarding agreement in the morphosyntactic literature and provides support for the separation of concord and agreement features (cf. Adger & Harbour 2008; Polinsky 2016).

In addition, the analysis goes on to predict the complex case patterns found on predicative adjectives in MSA through the copular structures proposed by Benmamoun (2008). It is shown that situations where predicative adjectives and subject DPs appear to share nominative case are due to the realization of default case on the predicative adjective. When subject DPs and predicative adjectives differ in case features, it is the result of case assignment to the predicative adjective in past/future tense copular sentences or to the subject DP in copular sentences headed by complementizers. Therefore, this analysis shows that case features in MSA are both syntactic and morphological features, accountable through AGR node insertion and Feature Copying at PF when not valued through case assignment in the syntax.

The paper is divided as follows. Section 2 provides an overview of attributive and predicative adjectives in MSA. Section 3 proposes an analysis of gender and number features as syntactic agreement features which are derived via Bidirectional Agree, following Baker (2008) and Baier (2015). Section 4 argues that definiteness features are distinctive from gender and number features in that they are inserted into the derivation at PF using Norris (2014)'s concord mechanisms, Morphological Feature Copying and AGR node insertion. Section 5 proposes an analysis of case features on adjectives as concord features as well as features valued (or unvalued) through case assignment. Section 6 addresses several remaining theoretical questions uncovered by the analysis and concludes.

2 Adjectives in Modern Standard Arabic

MSA inflects nouns for number (singular/dual/plural), gender (masculine/feminine), definiteness (definite/indefinite), and case (nominative/accusative/genitive). These inflections are also reflected through agreement on attributive adjectives (Ryding 2005). Compare (1) above to (3)–(5) below.¹

- (3) Adapted from Ryding (2005: 64)
 ?al-ħukuum-at-u ?al-dʒadiid-at-u
DEF-government-F.SG-NOM **DEF-new-F.SG-NOM**
 'the new government'
- (4) Adapted from Ryding (2005: 244)
 nisaa?-u-n ʔarabijj-aat-u-n
woman.F.PL-NOM-INDEF **Arab-F.PL-NOM-INDEF**
 'Arab women'

¹ All data included in this paper has been altered to traditional IPA transcription style and glossed according to Leipzig Glossing Rules.

- (5) Adapting from Ryding (2005: 171)
 ka-dʒisr-i-n ḥad^ʕaarijj-i-n
 as-bridge.**M.SG-GEN-INDEF** cultural.**M.SG-GEN-INDEF**
 ‘as a cultural bridge’

In (1) and (3)–(5), the attributive adjectives agree with their respective nouns in gender, number, case, and definiteness. All four categories are overtly inflected on both the noun and adjective, with the exception of masculine singular which is taken to be the unmarked, default form (Ryding 2005: 119).

Like attributive adjectives, predicative adjectives agree with their respective nouns in gender and number. However, they never agree with the noun in definiteness. When in predicative position, adjectives are always marked as indefinite. (6) and (7) are examples of present tense copular sentences. In this tense, the copula is null.

- (6) Adapted from Assiri (2011: 3)
 ʔar-radʒul-u Ø mariid^ʕ-u-n
 DEF-man.**M.SG-NOM** COP sick.**M.SG-NOM-INDEF**
 ‘The man is sick.’
- (7) Adapted from Assiri (2011: 3)
 ʔal-fataat-u Ø mariid^ʕ-at-u-n
 DEF-girl.**F.SG-NOM** COP sick-**F.SG-NOM-INDEF**
 ‘The girl is sick.’

Predicative adjectives also differ from their attributive counterparts in regards to case agreement. In some contexts, both the subject noun and adjective appear with the same case marking. This is seen with nominative case in (6) and (7) above as well as accusative case in the past tense copular sentence containing a complementizer in (8) below from fieldwork.

- (8) ʔinna ʔar-radʒul-a kaana mariid^ʕ-a-n
 COMP DEF-man.**M.SG-ACC** COP.PST sick.**M.SG-ACC-INDEF**
 ‘(It is confirmed that) the man was sick.’

However, case may also differ between the subject noun and predicative adjective. Generally, this depends upon the tense of the sentence and the presence of extra functional material like complementizers (cf. Benmamoun 2008; a.o.). For example, past and future tense copular sentences include an inflected form of *kaana*, an auxiliary/verb that behaves similarly to the English ‘be’ (Ryding 2005: 635–637). In these contexts, the predicative adjective takes accusative case while the subject noun appears in the nominative, as exemplified by the past tense copular sentence in (9), repeated from (2).

- (9) kaana ʔar-radʒul-u mariid^ʕ-a-n
 COP.PST DEF-man.**M.SG-NOM** sick.**M.SG-ACC-INDEF**
 ‘The man was sick.’

The NOM-ACC case pattern of past/future copular sentences is reversed in present tense copular sentences containing complementizers. Here, the subject noun takes accusative case and the predicative adjective, nominative.

- (10) Adapted from Assiri (2011: 72)
 ?inna ?ar-radʒul-a Ø mariid^f-u-n
 COMP DEF-man.M.SG-ACC COP sick.M.SG-NOM-INDEF
 ‘(It is confirmed that) the man is sick.’

Note that both (8) and (10) contain complementizers but differ in tense.

These facts reveal that the predicative adjective does not agree with its subject noun in case and may appear with nominative or accusative case features. In sentences such as (6), (7), and (10), the adjective appears to take nominative case, regardless of the case on the subject noun. This differs from sentences like (2) and (8) which contain an overt copula. In these situations, the adjective appears with accusative case. However, regardless of the case on the predicative adjective, it maintains its gender and number agreement with the subject noun as well as its indefinite marking.

These agreement patterns have been mentioned in varying degrees in previous literature (see Fassi Fehri 1999; Ouhalla 2004; Shlonsky 2004; Assiri 2011; Alqassas 2013; a.o.). Of these analyses, only Assiri (2011) and Alqassas (2013) directly propose formal analyses of the phenomenon. The more relevant of these papers is Assiri (2011), which proposes an Agree-based account of agreement features on predicative and attributive adjectives through the creation of two new syntactic mechanisms: Scan and Case-Reservation. Alqassas (2013), on the other hand, focuses only on definiteness agreement as it appears on attributive adjectives and its interaction with more complex data like optional definite marking on cardinal numerals and adjectives modifying construct states in Jordanian. Therefore, the analysis proposed here differs from previous approaches in that it accounts for agreement on both predicative and attributive adjectives through the use of syntactic and morphological mechanisms previously defined in the DM literature.²

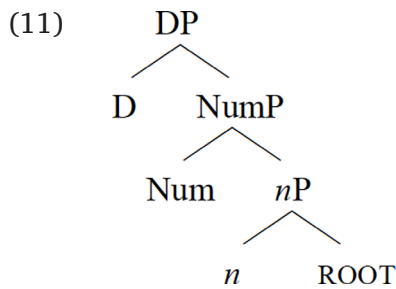
The remainder of this squib addresses how these mechanisms predict the agreement features expressed by attributive and predicative adjectives in MSA. It will be shown that gender/number are straightforwardly accounted for under a syntactic approach to agreement and, given their distinctive behavior, must be defined distinctly from definiteness and case features, which are analyzed as concord features inserted at PF. Through further discussion of case in MSA, I show that the complexities of case discussed in this section are straightforwardly accounted for via case assignment on predicative adjectives and PF-concord mechanisms for attributive.

3 Theoretical foundations

This analysis assumes the basic tenets of the Distributed Morphology framework. I assume MSA DPs are composed of a root merged with the categorizing head *n* (Harley 2014). This *n* introduces gender features (Kramer 2014; 2015) and is merged with the Num head, where number features are introduced (Ritter 1991; 1992). The NumP is then merged with a D, which carries definiteness features and projects the DP.³ Overall, this yields (11).

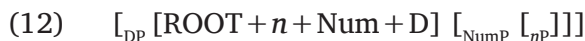
² In addition to the literature discussed here, there is extensive work on what is called “multiple definite marking” in languages such as Greek (see Alexiadou 2014 for an overview). However, definiteness agreement in MSA differs greatly from multiple definite marking in Greek since the latter has a semantic effect and may only appear on predicative adjectives, thus supporting a reduced relative clause analysis of the phenomenon. MSA’s definiteness agreement, on the other hand, is semantically vacuous and consistent on all attributive adjectives, regardless of their predicativity. These differences indicate that the two phenomena are not the same and also lends support for a PF-based analysis of MSA’s definiteness agreement under a Y-based model of grammar.

³ It may also be the case that DPs in MSA act as phases, as assumed elsewhere (see Kramer 2010 for one such example). However, this is not relevant to the overall argument here.



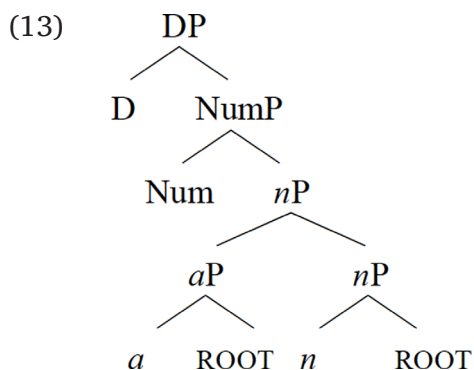
To account for the concord behavior of MSA, I assume D carries unvalued gender, number, case, and definiteness features.⁴ Following Norris (2014), I also assume that a process of feature percolation allows for features to be shared between a head X and its extended projection. This allows for the number, gender, definiteness, and case features carried by D to percolate to DP.

It is commonly assumed in the Semitic literature that nouns move up to D so as to predict the ordering of postnominal adjectives as well as to generate more complex structures, such as construct states (Borer 1999; a.o.). Adapting this to a theory of lexical decomposition requires that the root move to *n*, then Num, and finally combine as a complex head in D, illustrated in bracket form in (12).



This movement gathers gender, number, and definiteness features on their respective heads adjoined to D while the unvalued case feature on D is valued when the DP is assigned case. The movement also correlates with Chomsky (2008)'s conditions on phases in that at the point of merging a phase head, all material below is sent to the interfaces. As a phase head, merging D will send NumP, *nP*, and any adjoining material to PF and LF. Therefore, the relevant features must exist in D to permit their collection and percolation up to DP.⁵

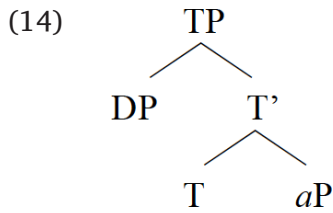
As in Baier (2015)'s analysis of Noon, I assume adjectives are composed of a root and *a*, whose projection adjoins to *nP*. Following that adjectives consistently agree with their respective noun in number and gender features, I assume that *a*'s uniformly carry a probe with these unvalued features. Taken together, this produces the basic structure in (13) for DPs containing attributive adjectives.



⁴ This assumption mirrors that of Norris (2012)'s analysis of Icelandic concord, where K, instead of D, carries unvalued case, number, and gender features.

⁵ For the sake of brevity, I posit here that the features of these adjoined heads percolate up to DP so as to be easily accessible for agreement with predicative adjectives. However, it is unclear if the features percolate up to DP or are simply accessible as features of the adjoined heads within D. I leave this for future exploration and thank the anonymous reviewer for their remark on this matter.

For MSA’s predicative structure, I will follow the basic structure in (14) from Benmamoun (2008), pending further discussion of copular sentences in Section 4.⁶



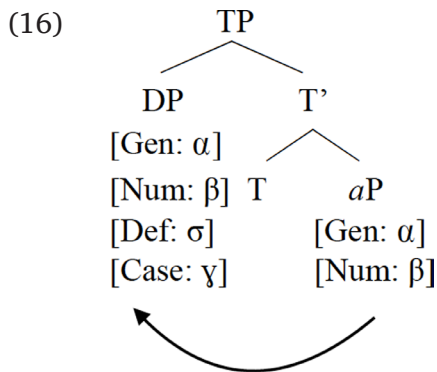
4 Gender and number

As discussed in section 1, I assume a split approach to the agreement phenomena at hand. While a version of Chomsky (2000; 2001)’s Agree can predict the consistent distribution of gender and number agreement, Norris (2014)’s Morphological Feature Copying is expected to derive the presence of definiteness agreement on attributive but not predicative adjectives. However, given limitations regarding the unidirectionality of Chomsky’s Agree, I follow Baker (2008)’s bidirectional approach to syntactic agreement, defined as in (15) by Baker (2008: 45) (see also Baier 2015).

- (15) Bidirectional Agree
 A probe with an unvalued feature F on head H Agrees with a goal G with a valued feature F only if H c-commands G or G-commands H.

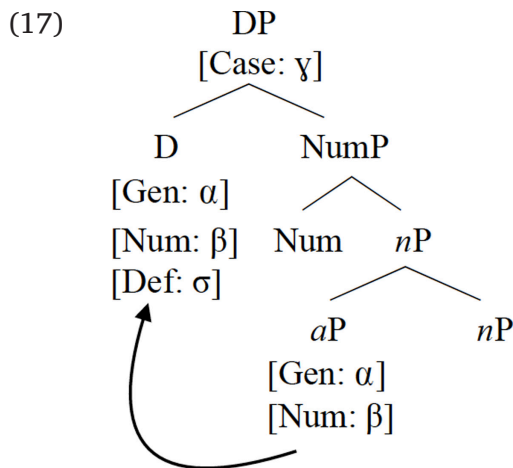
Agree, under the definition proposed by Chomsky (2000; 2001), is unidirectionally limited such that agreement only occurs when a probe c-commands a goal. Bidirectional Agree in (15), on the other hand, predicts agreement in the same environment as well as when a goal c-commands its probe. I take the bidirectional approach here since it is the latter environment, where the goal c-commands its probe, that predicts agreement on predicative adjectives in MSA.

For example, in the structure (16), the subject DP, located in Spec, TP, carries the gender, number, and definiteness features which have percolated up from D and the case feature carried by DP, the values of which are represented by α , β , σ , and γ . The predicative adjective, *aP*, located lower in the tree, is a probe with unvalued gender and number features. Given that Agree is bidirectional and DP c-commands *aP*, *aP* probes up the tree to DP and values its gender and number features. This then predicts gender and number agreement on predicative adjectives.



Similarly, within a DP, an attributive *aP* can value its gender and number features since D c-commands the lower *aP*.

⁶ These structures have been adapted to include DP in place of Benmamoun (2008)’s NP (cf. Abney 1987).



Thus, Bidirectional Agree permits the feature valuation of *aP* probes in both predicative and attributive positions, permitting a uniform proposal for the syntactic behavior of *aP*s.

5 Definiteness

While Bidirectional Agree correctly predicts gender and number agreement on attributive and predicative adjectives, it cannot do so for definiteness agreement. As mentioned above, definiteness agreement is only found on attributive adjectives. Predicative adjectives must be indefinite, regardless of the value of definiteness features on the DP. Since both the predicative and attributive adjectives are c-commanded by their goal, the DP, which carries definiteness features, Bidirectional Agree would predict the same agreement pattern on both types of adjectives. Instead, I follow Baier (2015) in assuming that definiteness agreement should be analyzed using Norris (2014)'s Morphological Feature Copying mechanism, defined in (18) (Norris 2014: 158).

- (18) Feature copying: For every unvalued feature [F:_] on an AGR node Z_{AGR} , copy the value from a projection XP iff...
- XP has a value for [F:_] ([F:[α])
 - XP includes Z_{AGR}
 - There is no YP such that YP has a value for [F:], YP dominates Z_{AGR} , and XP dominates YP.

The process is as follows: at PF, an AGR node is inserted as sister to the *a* node, following the schema in (19) from Norris (2014: 151) (see also Kramer 2009 for a similar proposal).

- (19) $X^0 \rightarrow [X^0 AGR^0]_X$
Where $X^0 = a$.

This AGR node carries an unvalued definiteness feature which is valued by copying the relevant feature from DP onto the AGR node. This may only occur if the DP dominates a head that carries an AGR node and no other head intervenes that carries this feature.

The restriction that DP must dominate AGR for Feature Copying to occur predicts definiteness agreement on attributive adjectives and not predicative. Given the basic DP structure containing an attributive adjective in (13/17), the DP dominates *aP*, permitting Feature Copying to occur. However, in the predicative structure in (14/16), the subject DP does not dominate *aP*. In turn, the definiteness value of the DP cannot be copied onto the predicative adjective's AGR node. This then explains the consistent definiteness agreement between an attributive adjective and its noun and the lack of definiteness agreement on predicative adjectives.

However, what remains to be addressed is how predicative adjectives, in the absence of definiteness agreement, appear with an indefinite suffix. Following Marantz (1991), I posit that this suffix appears as the realization of the unvalued definiteness feature on the AGR node. Specifically, when Vocabulary Insertion occurs at PF, the unvalued definiteness feature is realized by the underspecified Vocabulary Item, *-n*, generally described as the indefinite suffix (cf. Harley & Noyer 1999). This suggests that *-n* is the default (in)definite marker in MSA, as is suggested briefly in Baier (2015).

Overall then, I define the relevant Vocabulary Items for definiteness in MSA as in (20).

- (20) Set of Vocabulary Items for Definite Affixes
- a. $\text{ʔal-} \longleftrightarrow$ definite
 - b. $\text{-n} \longleftrightarrow$ elsewhere

In correlation with the analysis above, (20) predicts that *ʔal-* will be inserted in the context of a definite feature while *-n* will appear in either indefinite contexts or, more generally, in the absence of a definite feature.

One final note should be made regarding the placement of definite affixes with respect to the adjective and their definition in (20). As shown in data throughout the paper, the definite feature is realized as a prefix while an indefinite (or unvalued definite) feature appears as a suffix. Under the Distributed Morphology framework, one explanation for this variation in placement is through the specification of Vocabulary Items. Following this approach, I assume that the Vocabulary Item in (20a) specifies that the affix be placed at the leftedge of the complex nominal head generated through head movement to D (see bracketed structure in (12)). Local Dislocation, as defined by Embick & Noyer (2001), then moves *ʔal-* to the front of [ROOT + *n* + Num] head. In contrast, the Vocabulary Item which realizes *-n* in (20b) specifies that it appear as a suffix. As such, *-n* remains at the right edge of the complex nominal head and does not undergo Local Dislocation.

6 Case features: Both syntactic and morphological

The analysis proposed in sections 3 through 5 defines two set of features at play for MSA adjectives:

- Gender, Number: Phi features assigned through Bidirectional Agree.
- Definiteness: Concord feature realized through valuation (or lack of valuation) of AGR.

This straightforwardly accounts for the distribution of gender, number, and definiteness features on attributive and predicative adjectives in the language. This last section will discuss the fourth and final feature at play in and outside of the DP: case.

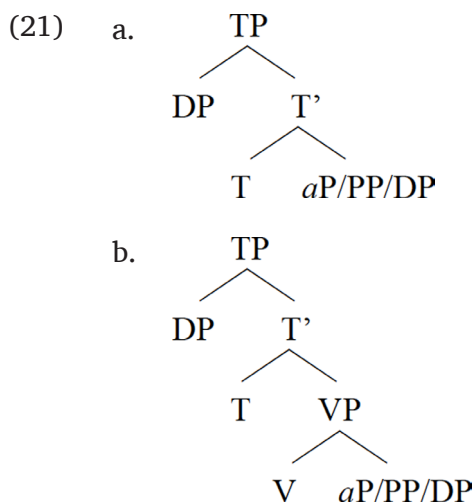
Recall from section 2 that inside MSA's DP, case patterns like gender, number, and definiteness in that the attributive adjective consistently mirrors the case value of the noun it modifies. This is not the case for predicative adjectives. On predicative adjectives, the case feature does not consistently mirror that of its subject noun, implying that case cannot be grouped onto the Agree probe carrying gender and number features discussed in section 3. In addition, case cannot straightforwardly be analyzed as a concord feature as was proposed for definiteness in section 5. Definiteness features on predicative adjectives are consistently realized via the indefinite suffix, regardless of the structure of the copular sentence. The value of case features, on the other hand, varies on predicative adjectives depending on the tense or functional material included in the copular sentence. This indicates that the features are distinctive. However, in this section I will argue that

in fact case does pattern like definiteness and therefore should be treated as a concord feature shared through Morphological Feature Copying. It will be shown that the case patterns which do not align with the analysis of definiteness in section 5 are caused by an interaction between case as a concord feature and case as a feature provided through case assignment. Therefore, before proposing an analysis of case as a concord feature in 6.2, I will first elaborate on case assignment in MSA's copular sentences in 6.1.

6.1 Case assignment

As discussed in section 2, past/future copular sentences in MSA exhibit a NOM-ACC case pattern whereby subject DPs take nominative case and predicative adjectives take accusative. This is exemplified by (2) above. This pattern follows straightforwardly from case assignment properties in a nominative-accusative language. What is interesting is that this same case assignment pattern does not appear in present tense copular sentences. In these contexts, both the subject noun and predicative adjective are nominative, as shown in (6) and (7). Following that the only difference between the two tenses is the inclusion of the overt copula, *kaana*, it must be that *kaana* causes this variation.

To account for this distinction, I propose that predicative *a*Ps carry an unvalued case feature and are eligible for case assignment.⁷ Following Benmamoun (2008), I distinguish past/future and present tense copular sentences based on the inclusion of a copula in the former and not the latter. Specifically, the sentence structures are distinct from one another. Past/future copular sentences contain a VP, the head of which houses *kaana*, while present tense copular sentences do not.⁸ This results in present tense copular sentences taking the structure in (21a) and past/future tense, (21b).



By assuming these distinct structures, I can account for each of the case patterns exhibited by predicative adjectives. In past/future tense copular sentences like (2/9), V values *a*P's case feature with accusative case, which is realized at PF as *-a* (or its allomorphs).⁹

⁷ Predicate nominals exhibit the same case behavior as discussed for predicative adjectives in this paper. This not only provides further evidence that predicative APs carry an unvalued case feature but also reveals that the proposed analysis can be easily extended to account for the case patterns found on predicate nominals in MSA.

⁸ Benmamoun (2008) evidences this distinction based on variation in word-ordering restrictions, case distinctions (which are under investigation here), and the interaction of negation and predicates. As Benmamoun shows, these distinctions fall out from the assumptions that past/future copula sentences have a VP while present tense do not.

⁹ After much helpful commentary from various reviewers on this matter, it is unclear whether this case assignment is better classified under Dependent Case Theory (cf. Marantz 1991; Baker 2008) or an

Present tense copular sentences like (6) and (7) do not contain a V to assign case, leaving the case feature on the predicative adjective unvalued. As argued for the definite feature's Vocabulary Items in (20) above, I assume that this unvalued case feature is realized as the default Vocabulary Item at PF. To generate these case suffixes, I propose the basic Vocabulary Items in (22).¹⁰

(22) Set of Vocabulary Items for Case Suffix

- a. -a \longleftrightarrow accusative
- b. -i \longleftrightarrow genitive
- c. -u \longleftrightarrow elsewhere

If this analysis of case assignment is on the right track, it predicts that nominative case is the default case in MSA, given that it appears on predicative adjectives in contexts where there is no case assigning head. This is borne out, as evidenced by previously discussed copular sentences with complementizers. As mentioned above, these sentences appear with accusative case on the subject DP and nominative case on the predicate. Since these sentences do not have an overt copula and thus do not have a V head, the predicate is not assigned case. As such, it follows that since nominative appears in these contexts, it must be the default.¹¹ Further evidence for this claim is provided by hanging topics (cf. Schütze 2001). In MSA, these appear at the left periphery of the sentence and carry nominative case. They are arguably generated in-situ based on resumption and a lack of island effects (cf. Fassi Fehri 1993; Al-Shorafat 1999).¹² The pair of sentences in (23) is illustrative of hanging topics in the language. (23a) exemplifies the basic VSO order of MSA, with the object 'the letter' taking accusative case. When this object appears as a hanging topic, as in (23b), it takes nominative case and a resumptive pronoun obligatorily appears suffixed to the verb (example adapted from Shlonsky 2000: 327).

- (23) a. *kataba ?al-walad-u ?al-risaal-at-a*
wrote DEF-boy.M.SG-NOM DEF-letter-F.SG-ACC
'The boy wrote the letter.'
- b. *?al-risaal-at-u kataba-ha ?al-walad-u*
DEF-letter-F.SG-NOM wrote-3F.SG DEF-boy.M.SG-NOM
'The letter, the boy wrote it.'

As such, *-u* on *?alrisaalatu* must be the realization of an unvalued case feature at PF and therefore the default case Vocabulary Item, as defined in (22c). *?alwaladu* receives nominative case from the verb.

Agree-based case assignment theory (cf. Chomsky 2000; 2001). While I leave this particular area of the analysis for future investigation, it is appealing to follow a Dependent Case Theory analysis of case assignment here since it does not tie case assignment with agreement. As such, the facts regarding gender/number agreement between the adjective and subject DP are straightforwardly predicted. This is not the case in an Agree-based theory of case assignment since it is unclear how the verb agrees and assigns case to the adjective but the features of the adjective remain active such that they then agree with the subject DP.

¹⁰ In a fuller analysis of these Vocabulary Items, they would require further specification to account for allomorphy and lexical restrictions. See Winchester (2017) for an example of such specifications.

¹¹ Thank you to a reviewer for pointing out this additional piece of evidence for nominative as the default case.

¹² This differs from focus-fronting structures, which are subject to island constraints and do not require resumption (cf. Shlonsky 2000).

By assuming nominative as the default case, the analysis straightforwardly predicts the case behavior of copular sentences headed by a complementizer. When C merges with TP, it assigns accusative case to the subject DP, accounting for the accusative case suffix on the subject DP in (8) and (10) (cf. Aoun, Benmamoun & Choueiri 2009: Chapter 2).¹³ When the copular sentence is in the present tense, as in (10), it does not contain a V head. Without a V head, the predicative adjective does not receive case features. When sent to PF unvalued, this feature is paired with the Vocabulary Item in (22c), the default case. This then explains the ACC-NOM case pattern in sentence (10). The ACC-ACC case pattern, which appears in past/future copular sentences with complementizers, may also be explained in this way. According to this analysis, these sentences contain a V, which assigns accusative case to the predicative adjective. As such, both the subject DP and predicative adjective appear with accusative case in (8).

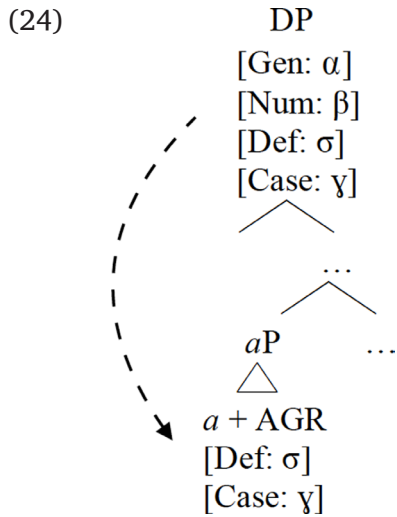
In summary, case features on predicative adjectives can be valued in one of two ways. They may be valued via case assignment if a V head is present in the structure (past/future copular sentences) or they may be valued at PF via a default case Vocabulary Item (present copular sentences).

6.2 Case concord

Thus far, this squib has shown that gender and number features are distinctive from definiteness features. Gender and number features consistently covary with their respective noun/subject DP on both predicative and attributive adjectives but definiteness features only covary on adjectives located DP-internally. In the previous section, it was shown that predicative adjectives do not agree with their subject DP in case. While data such as (6) and (7) indicated that predicative adjectives and subject DPs “share” nominative case, the analysis revealed that this only occurs when the adjective’s case feature is not valued through case assignment with a verb. In this context, the nominative case feature on the predicative adjective is not the result of agreement with the subject DP but is instead the realization of default case on the predicative adjective, i.e. the nominative case Vocabulary Item. Therefore, like definiteness, case features do not pattern with gender and number features and indicates that case features are not present on *a*’s probe.

While case assignment predicts the presence of case features on predicative adjectives, the question remains as to how attributive adjectives receive case. Remember from section 2 that attributive adjectives consistently covary in case with their respective nouns. When connecting this with the facts above, a connection between case and definiteness features emerges. Like definiteness features, case features covary with their respective noun in attributive contexts but not in predicative. As such, I propose to analyze case features on par with definiteness features by locating them on the AGR node that is inserted at PF as sister to *a*. When *a* is located internal to DP, the AGR node will be in a domination relation with DP, which contains gender, number, case, and definiteness features. This domination relation is the necessary criterion for Feature Copying as defined in (18) above. Therefore, when Feature Copying occurs, it will copy both the definiteness and case feature values from DP to the AGR node, the process of which is represented by the dashed line in (24).

¹³ Following Baker (2008), I assume that case assignment by functional heads, such as complementizers, is possible under Dependent Case Theory. Thank you again to a reviewer who pointed out this connection.



Like the analysis of definiteness features in section 5, Feature Copying cannot occur when the AGR node is sister to an *a* outside of the DP, ie. on predicative adjectives. In this location, the AGR node is not dominated by DP and cannot be valued through Feature Copying. Instead, if case features have not already been assigned to the predicative *aP* in the syntax, the unvalued case feature on the AGR node is realized as *-u*.

7 Remaining questions & conclusions

Overall, this paper has proposed an analysis of adjectival agreement in MSA. Through an investigation of agreement on attributive and predicative adjectives, it was shown that gender and number are generated through the syntactic operation, Bidirectional Agree, and definiteness and case are concord features generated through the morphological operations, AGR insertion and Feature Copying. For the remainder of this paper, I will address the theoretical implications of this analysis through a discussion of two areas of future research: (i) the interaction of syntactic and morphological features and (ii) the structure of AGR nodes.

In the proposed analysis, case features are valued through either case assignment in the syntax or through concord mechanisms at PF. The dual nature of case valuation touches on a larger question regarding how the sets of features valued at the syntactic level of derivation interact with those valued in the morphology. In a similar split approach to agreement in Noon, Baier (2015) places gender and number features in two locations: the Probe and AGR node of *a*. As such, under his analysis, attributive adjectives will receive two sets of gender and number features, one which is valued through Bidirectional Agree in the syntax and the other through Feature Copying at PF. In this context, both the Probe and AGR node will receive features of the same value. This redundancy that can either be repaired through a process of haplology or a restriction that forces only one iteration of the features to be realized phonologically. The situation becomes more complicated though when expanding his analysis to predicative adjectives, where the two locations are likely to contain distinct feature values. In these cases, the Probe will value its gender and number features through a c-command relation with the subject DP but the AGR node will be unable to value its features due to lack of a domination relation. If the gender and number features are not shared between the Probe and AGR node, we would expect to find gender and number affixes that reflect agreement with the subject DP from the Probe and default gender and number affixes which reflect the realization of unvalued AGR node features. Since neither the data provided by Baier for Noon nor the MSA data examined here indicates such double exponence is possible, I posit that gender and

number features are only present on the Probe. This remediates any issues with double exponence present in Baier's analysis and further emulates the division between the syntactic features (gender and number) and the morphological concord features on the AGR node (definiteness and case) at play here.¹⁴

Finally, this analysis also has implications regarding the structure of AGR nodes. Norris (2014) notes that AGR nodes may either be realized as a single node or may be fissioned into separate nodes (see also Deal 2016). In the former approach, the AGR node is assumed to be realized by one Vocabulary Item. In the latter, each fissioned piece of the AGR node is realized by a separate Vocabulary Item at PF. In an analysis of MSA's relative clause marker, Winchester (2017) takes the Fission-based approach for MSA's AGR nodes, proposing sets of Vocabulary Items which realize individual gender, number, and case nodes. For the sake of brevity, I will not propose a full analysis of AGR nodes here but should remark that many of the gender, number, and case suffixes on the relative marker in Winchester (2017) also appear through agreement on adjectives. As such, I would speculate that this analysis would require a Fission-based approach, though I leave this for future research.

Abbreviations

Relevant glossing abbreviations are as follows: M = masculine, F = feminine, SG = singular, PL = plural, DEF = definite, INDEF = indefinite, NOM = nominative, ACC = accusative, COMP = complementizer, COP = copula, PST = past.

Acknowledgements

I am indebted to my consultants for their assistance in verifying the data presented throughout this paper as well as to Ruth Kramer, Ahmad Alqassas, and three anonymous reviewers for their helpful comments.

Competing Interests

The author has no competing interests to declare.

References

- Abney, Steven P. 1987. *The English noun phrase in its sentential aspect*. Cambridge, MA: Massachusetts Institute of Technology dissertation.
- Adger, David & Daniel Harbour 2008. Why phi. In David Adger, Daniel Harbour & Susana Bejar (eds.), *Phi-theory: Phi-features across modules and interfaces*, 1–34. Oxford: Oxford University Press.
- Al-Shorafat, Mohammed O. 1999. Topics in Arabic: A minimalist approach. *al-'Arabiyya*, 1–21.
- Aoun, Joseph E., Ellabas Benmamoun & Lina Choueiri. 2009. *The syntax of Arabic*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511691775>
- Assiri, Ahmad I. 2011. *Arabic adjectival phrases: An Agree-based approach*. St. John's: Memorial University of Newfoundland dissertation.
- Baier, Nico. 2015. Adjective concord in Noon: Evidence for a split theory of noun-modifier concord. In *Proceedings of North East Linguistics Society* 45. 67–80. DOI: <https://doi.org/10.3765/exabs.v0i0.3013>
- Baker, Mark C. 2008. *The syntax of agreement and concord*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511619830>

¹⁴ Many thanks to the anonymous reviewer who pointed out this resolution to the double exponence problem.

- Benmamoun, Ellabas. 2008. Clause structure and the syntax of verbless sentences. In *Foundational issues in Linguistic Theory: Essays in honor of Jean-Roger Vergnaud*, 104–131. Cambridge, MA: MIT Press. DOI: <https://doi.org/10.7551/mitpress/9780262062787.003.0006>
- Borer, Hagit. 1999. Deconstructing the construct. In *Beyond principles and parameters*, 43–89. The Netherlands: Springer. DOI: https://doi.org/10.1007/978-94-011-4822-1_3
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. In Roger Martin, David Michaels & Juan Uriagereka (eds.), *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89–156. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In Michael Kenstowicz (ed.), *Ken Hale: A life in language*, 1–52. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2008. On phases. In *Foundational issues in Linguistic Theory: Essays in honor of Jean-Roger Vergnaud*, 133–166. Cambridge, MA: MIT Press. DOI: <https://doi.org/10.7551/mitpress/9780262062787.003.0007>
- Deal, Amy Rose. 2016. Plural exponence in the Nez Perce DP: A DM analysis. *Morphology* 26. 313–339. DOI: <https://doi.org/10.1007/s11525-015-9277-9>
- Embick, David & Rolf Noyer. 2007. Distributed Morphology and the syntax/morphology interface. In *The Oxford handbook of linguistic interfaces*, 289–324. DOI: <https://doi.org/10.1093/oxfordhb/9780199247455.013.0010>
- Fassi Fehri, Abdelkader. 1993. *Issues in the structure of Arabic clauses and words*. The Netherlands: Kluwer Academic Publishers. DOI: <https://doi.org/10.1007/978-94-017-1986-5>
- Fassi Fehri, Abdelkader. 1999. Arabic modifying adjectives and DP structures. *Studia linguistica* 53(2). 105–154. DOI: <https://doi.org/10.1111/1467-9582.00042>
- Halle, Morris & Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In Kenneth Hale & Samuel Jay Keyser (eds.), *The view from building 20*, 111–176. Cambridge, MA: MIT Press.
- Halle, Morris & Alec Marantz. 1994. Some key features of Distributed Morphology. *MIT Working Papers in Linguistics* 21. 275–288.
- Harley, Heidi. 2014. On the identity of roots. *Theoretical Linguistics* 40(3/4). 225–276. DOI: <https://doi.org/10.1515/tl-2014-0010>
- Harley, Heidi & Rolf Noyer. 1999. Distributed Morphology. *Glott International* 4(4). 3–9.
- Kramer, Ruth. 2009. *Definite markers, phi-features, and agreement: A morphosyntactic investigation of the Amharic DP*. Santa Cruz, CA: University of California dissertation.
- Kramer, Ruth. 2010. The Amharic definite marker and the syntax–morphology interface. *Syntax* 13(3). 196–240. DOI: <https://doi.org/10.1111/j.1467-9612.2010.00139.x>
- Kramer, Ruth. 2014. Gender in Amharic: A morphosyntactic approach to natural and grammatical gender. *Language Sciences* 43. 102–115. DOI: <https://doi.org/10.1016/j.langsci.2013.10.004>
- Kramer, Ruth. 2015. *The morphosyntax of gender*. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780199679935.001.0001>
- Marantz, Alec. 1991. Case and licensing. In Eric J. Reuland (ed.), *Arguments and case: Explaining Burzio's Generalization*, 11–30. DOI: <https://doi.org/10.1075/la.34.04mar>
- Norris, Mark. 2014. *A theory of nominal concord*. Santa Cruz, CA: University of California dissertation.
- Polinsky, Maria. 2016. Agreement in Archi: A Minimalist approach. In Oliver Bond, Greville G. Corbett, Marina Chumakina & Dunstan Brown (eds.), *Archi: Complexities of agreement in cross-theoretical perspective*, 184–232. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780198747291.003.0007>

- Ritter, Elizabeth. 1991. Two functional categories in noun phrases: Evidence from Modern Hebrew. In Susan D. Rothstein (ed.), *Perspectives on phrase structure: Heads and licensing*, 37–62. San Diego, CA: Academic Press.
- Ritter, Elizabeth. 1992. Cross-linguistic evidence for number phrase. *Canadian Journal of Linguistics* 37. 197–218. DOI: <https://doi.org/10.1017/S0008413100021952>
- Ryding, Karin C. 2005. *A reference grammar of Modern Standard Arabic*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511486975>
- Schütze, Carson. 2001. On the nature of default case. *Syntax* 4. 205–238. DOI: <https://doi.org/10.1111/1467-9612.00044>
- Shlonsky, Ur. 2000. Remarks on the complementizer layer of Standard Arabic. In Jacqueline Lecarme, Ur Shlonsky & Jean Lowenstamm (eds.), *Research in Afroasiatic grammar*, 325–343. Amsterdam: Benjamins. DOI: <https://doi.org/10.1075/cilt.202.15shl>
- Winchester, Lindley. 2017. Morphosyntactic features & contextual allomorphy: Evidence from Modern Standard Arabic. In Andrew Lamont & Katerina Tetzloff (eds.), *Proceedings of the 47th Annual Meeting of the North East Linguistic Society* 3. 247–260.

How to cite this article: Winchester, Lindley. 2019. Concord and agreement features in Modern Standard Arabic. *Glossa: a journal of general linguistics* 4(1): 91.1–15. DOI: <https://doi.org/10.5334/gjgl.710>

Submitted: 01 June 2018 **Accepted:** 14 May 2019 **Published:** 06 August 2019

Copyright: © 2019 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.



Glossa: a journal of general linguistics is a peer-reviewed open access journal published by Ubiquity Press.

OPEN ACCESS The Open Access logo, which is a stylized 'a' inside a circle.