Agree-Based Analysis of Arabic Adjectival Agreement and Case

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Abstract: This paper aims at investigating the structural positions occupied by the predicative and attributive adjectives in Modern Standard Arabic. Arabic adjectives are represented as post-nominal DP constituents which exhibit interesting syntactic properties in terms of agreement and Case. The study adopts the feature-based Agree model developed within the Minimalist Program. It introduces an analysis that accounts for how Case feature is valued on adjectives and the modified nouns and why the attributive and the predicative adjectives display different levels of agreement with the modified nouns. The paper argues that there are three sources of agreement on adjectives. The first source is the numeration where agreement in φ-feature between the noun and the modifying adjective, be it predicative or attributive, is determined. The second source of agreement results from the indefiniteness override which takes place upon Merge when the definiteness of the modified noun overrides the indefiniteness of the attributive adjective. Predicative adjectives are not subject to this override that is why they do not agree in definiteness with the modified nouns. The third source of agreement is the operation Agree which is responsible for the valuation of Case feature. During the derivation, two different Agree operations apply. The attributive adjective is internal to the DP that contains the modified noun. The whole DP is probed by an external c-commanding head. Conversely, the predicative adjective is a DP complement to a copular head with which it enters in an Agree relation.

Keywords: adjectives, agree, Arabic, case, phase

1. Introduction

Agreement and Case are morphosyntactic phenomena that are widely attested in different languages. Agreement is usually projected morphologically based on a relationship established between two agreeing elements in a certain syntactic environment where the form of one of these elements covaries with the form of the other. This covariance is found in Modern Standard Arabic (MSA) between the verbs and its subject at the clause level, as (1) below shows.

(1) jaaʔa al-walad-u
came.3ms the-boy-nom
'The boy came.'

Subject-verb agreement is not the only configuration where agreement holds between two elements. For example, agreement is found between nouns and

(demonstrative) determiners as in (2) below. Also, it exists between nouns and modifying adjectives as we shall see in section 2 below.

(2) qabal-tu haaða ar-rajul-a
met-I this.ms the-man-acc
'I met his man.'

Case is another instance of covariance between two linguistic elements, but unlike agreement seen in (1) above, the nominal forms are used based on their grammatical functions within the structure of the sentence. In other words, depending on the relationship between nominals and Case assigning syntactic heads such as T or v, nominals appear with Case values that are consistent with the positions they occupy in the clause. For example, in (1) above, the nominal subject is nominative; hence, it is suffixed with the nominative Case marker *-u*. When this noun functions as an object, it is suffixed with the accusative Case marker *-a*, as (3) below shows.

(3) qabal-tu al-walad-a
met.I the-boy-acc
'I met the boy.'

Agreement and Case have long played a prominent role in the development of Chomsky's framework of syntactic theory. In the early 1980s, under the assumptions of Government and Binding, agreement and Case are determined via the general rule *Move α* that allows nominals to move freely to check their features in the relevant specifier positions of AgrSP (subject agreement phrase) or AgrOP (object agreement phrases). However, with advent of the Minimalist Program (MP) in the early 1990s, Agr phrases where eliminated and movement is restricted. Under the assumption of MP (introduced in Chomsky 1995 and later), these two issues are generally discussed as tightly related phenomena due to the nature of the role they play in building structures. In fact, in the current feature-based version of MP, both agreement and Case underlie the operation Agree that takes place in a probe-goal configuration. Agreement is the outcome of a process that values the features of person, gender and number (collectively known as φ-features). Whereas Case (i.e. syntactic Case) is a feature that activates a nominal and makes it available for agreement with a functional head. Its value as nominative or accusative or otherwise is the outcome of the same process that produces the agreement pattern. To clarify, Chomsky (1995; 2000) introduced the idea that derivation is feature-driven because the syntactic operations necessary to build structures apply to satisfy or value features. In the lexicon, nominals as well as lexical heads such as verbs are provided with φ-features which are either interpretable or uninterpretable depending on whether they contribute to the semantic interpretation or not. On nominals, these features are represented as valued because they are interpretable, and unvalued on lexical heads because they are uninterpretable. By the same token, because Case feature on nominals is uninterpretable, it is introduced unvalued. Accordingly, all

the unvalued features of the lexical items must be valued and deleted during the course of derivation as a requirement of the Full Interpretation Principle that demands the valuation and deletion of all uninterpretable features before they reach the LF and PF interfaces (Chomsky 1995). The process of valuation takes place in a probe-goal configuration at a phase level. The phase is a unit of computation that defines a protected domain which is not accessible to external heads, as Phase Impenetrability Condition (PIC) requires (Chomsky 2000). Within the phase, the probe is a head in a position from which it c-commands the goal; the probe has unvalued uninterpretable φ-features whereas the nominal is a phrase with valued interpretable φ-features in addition to an unvalued Case feature. The existence of unvalued φ-feature on the probe and the unvalued Case feature on the nominal render both items active and available for establishing an Agree relation that value and delete all the unvalued features. The outcome of this relation is agreement realized on the head and case realized on the nominal.

This paper investigates adjectival agreement and Case in MSA and proposes a fresh minimalist analysis that observes the MP principles of computational economy. The rest of the paper is organized as follows: section two presents the MSA data showing the differences between attributive and predicative adjectives and their positions with respect to the modified nouns, in addition to Case issue. Section three reviews some previous analyses and relates them to the analysis presented in this paper, which is the subject matter of section four. Section five concludes the discussion.

2. MSA adjectival agreement

MSA is characterized by its rich morphological system that overtly marks nouns and adjectives alike for number, gender, Case and in/definiteness. Attributive adjectives show these features as a reflection of an agreement relation with the nouns they modify.

(4) a. waSala al-walad-u að- ðakiyy-u
rarived.3ms the-boy-nom the-clever.3ms-nom
'The clever boy arrived.'

b. WaSal-at al-bint-u að-ðakiyyat-u
arrived-3fs the-girl-nom the-clever.3fs-nom
'The clever girl arrived.'

c. waSala al-ʔwlaad-u al-ʔðkiyaaʔ-u
arrived.3ms the-boys-nom the-clever.3mp-nom
'The clever boys arrived.'

d. waSal-at al-banaat-u að-ðakiyyaat-u
arrived-3fs the-girls-nom the-clever.3fp-nom
'The clever girls arrived.'

Any agreement mismatch between the noun and the adjective in (4) above renders the form ungrammatical as the examples below illustrate. In (5a) below, the adjective disagrees with the noun in Case, whereas in (5b) the two items disagree in gender. In (5c), the plural noun and the modifying adjective disagree in number. In (5d) the noun and the adjective disagree in gender, whereas in (5e) they disagree in definiteness.

(5) a. *waSala al-walad-u að-ðakiyy-a
arrived.3ms the-boy-nom the-clever.3ms-acc
'The clever boy arrived'

b. *waSal-at al-bint-u að-ðakiyy-u
arrived-3fs the-girl-nom the-clever.3ms-nom
'The clever girl arrived'

c. *waSala al-ʔwlaad-u að-ðakiyy-u
arrived.3ms the-boys-nom the-clever.3ms-nom
'The clever boys arrived'

d. *waSal-at al-banaat-u al-ʔðkiyaaʔ-u
arrive-3fs the-girls-nom the-clever.3mp-nom
'The clever girls arrived'

e. *waSala walad-un að-ðakiyy-u
arrived.3ms boy-nom.indef the-clever.3ms-nom
'A clever boy arrived'

Agreement between the noun and the modifying adjective should be full in all features including in/definiteness. All the nouns in (4) above are definite and the adjectives are necessarily definite, too. When these nouns are indefinite, the modifying adjectives should also be indefinite as can be seen from the examples below.

(6) a. raʔai-tu walad-an ðakiyy-an
saw-I boy-acc.indef clever.3ms-acc.indef
'I saw a clever boy.'

b. raʔai-tu bint-an ðakeiyyat-an
saw-I girl-acc.indef clever.3fs-acc.indef
'I saw a clever girl.'

c. raʔai-tu ʔwlaad-an ʔðkiyaaʔ-an
saw-I boys-acc.indef clever.3mp-acc.indef
'I saw clever boys.'

d. raʔai-tu banaat-in ðakiyyaat-in
saw-I girls-acc.indef clever.3fp-acc.indef
'I saw clever girls.'

However, in contrary to the examples in (5) above, the noun and the modifying adjective may show agreement mismatch in definiteness; a definite noun can be modified by an indefinite adjective. When this happens, the form is no longer a noun phrase; rather it is a copular sentence (with a zero copula). Accordingly, the indefinite adjective that modifies a definite noun is predicative. To exemplify, all the noun phrases in (4) above have sentential readings when the adjectives are indefinite as (7a to 7b) below illustrate.

(7) a. al-walad-u ðakiyy-un
the-boy-nom clever.3ms-nom.indef
'The boy is clever.'

b. al-bint-u ðakiyyat-un
the-girl-nom clever.3fs-nom.indef
'The girl is clever.'

c. al-ʔwlaad-u ʔðkiyaaʔ-un
the-boys-nom clever.3mp-nom.indef
'The boys are clever.'

d. al-banaat-u ðakiyyaat-un
the-girls-nom clever.3fp-nom.indef
'The girls are clever.'

The evidence supporting the clausal status of each of the examples in (7) above comes from the availability of a past-tense counterpart with an overt verb form, as can be seen from the following examples.

(8) a. kaana al-walad-u ðkiyy-an
was.3ms the-boy-nom clever.3ms-acc.indef
'The boy was clever.'

b. kaanat al-bint-u ðakiyyat-an
was.3fs the-girl-nom clever.3fs-acc.indef
'The girl was clever.'

Another piece of evidence in favor of the clausal status of (7) comes from the use of the overt affirmative complementizers *inna* that introduces clauses (Fassi Fehri 1993 and Alenazy 2009). In (9a) below, the complementizer introduces the clause; it is not used with the noun phrase as (9b) illustrates.

(9) a. inna al-walad-a ðakiyy-un
Comp the-boy-acc clever.3ms-nom.indef
'Indeed, the boy is clever.'

b. *inna al-walad-a að-ðakiyy-a
Comp the-boy-nom the-clever.3ms-nom
'Indeed, the clever boy.'

The contrast between (9a) and (9b) above provides further evidence in favor of the clausal status of (9a); the main clause complementizer *inna* is an accusative Case assigner that assigns Case to the subject, which explains why Case on the subject varies while it remains nominative on the complement. In other words, when *inna* introduces a zero copular sentence as in (9a) above, the subject is necessarily accusative while the complement remains nominative. This indicates prima facie that the predicative adjective is not within the same phrase that contains the modified noun. Such a conclusion is confirmed by the examples in (10) below where the noun in each sentence is modified by an attributive adjective along with a predicative adjective. The attributive adjectives in (10a), (10b) and (10c) follow the modified nouns and bear whatever Case values these nouns have. This suggests clearly that the adjective and the modified noun are contained within the same phrase. The predicative adjectives, on the other hand, vary depending on whether the sentence is zero copula or verbal copula; in (10a) and (10b) it is nominative irrespective of the presence or absence of the complementizer *inna*. However, in (10c), the adjective is accusative, which means that it is valued by the copular verb *kaana.*

(10) a. al-walad-u að-ðakiyy-u ghaniyy-un
the-boy-nom the-clever.3ms-nom rich.3ms.Indef
'The clever boy is rich.'

b. inna al-walad-a að-ðakiyy-a ghaniyy-un
Comp the-boy-acc the-clever.3ms-acc rich.3ms-nom.Indef
'Indeed, the clever boy is rich.'

c. kaana al-walad-u að-ðakiyy-u ghaniyy-an
was.3ms the-boy-nom the-clever.3ms-nom rich.3ms-acc.Indef
'The clever boy is rich.'

To summarize, the data show that the attributive and the predicative adjectives occupy different positions with regard to the modified noun even though they both appear post-nominally. Due to their implications for agreement and Case, the behavior of the modifying adjectives admits discussion under the recent assumptions of MP (Phase-based Agree Theory in particular); this contrast leaves us with the following questions:

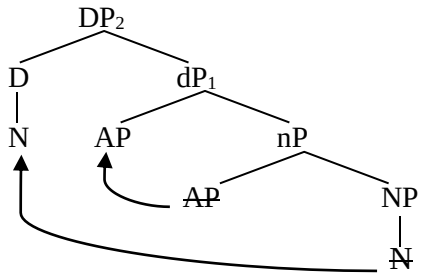
- What are the structural positions of the attributive and predicative adjectives with respect to the nouns they modify?
- How are agreement and Case of attributive and predicative adjectives determined?

Before we proceed to the proposed analysis, the next section sheds light on some of the prominent analyses that exist in the literature.

3. Previous analysis of adjectival agreement

The issue of Arabic adjectival agreement introduced in section 2 above has been widely debated in the previous literature (Fassi Fehri 1999; Benmamoun 2000; Kremers 2003; Shlonsky 2012; Fakih 2017; AlOtaibi, AlQenaie, and Soonhyuck 2023, among others). Cinque (1994; 1996) argues that prenominal as well as postnominal attributive adjectives are base generated as left specifiers of the nouns they modify and that these adjectives do not move. Variation in the surface word order of adjectives in different languages results from different types of movement. In Romance languages such as Italian where the attributive adjective follows the modified noun, Cinque clarifies that N movement takes place across the modified noun to a position preceding the adjective, but it is below D the head of the DP that contains the adjective along with the modified noun. Building on Cinque's (1994 and 1996) proposal, Fassi Fehri (1999) argues that MSA is underlyingly A-N language where the attributive adjective originates in a position preceding the modified noun. The surface word order where the adjective appears in a postnominal position is derived by N movement across the adjective to D. However, contrary to Cinque (1996), Fassi Fehri argues that the attributive adjective also moves leftward from its base position to check its features. In other words, he suggests that because of the adjective's inflectional properties it needs to move to check its features. The landing site of the adjective is a position below D where N is located to ensure that N-A order is maintained. Accordingly, he postulates a fissioned (or split) DP structure consisting of DP2 whose head hosts the modified noun that undergoes N to D movement across the adjective and dP1 which is lower than DP2. The adjective undergoes AP movement from its base position to the specifier of dP1 to check its inflectional features. The structure Fassi Fehri proposes is along the following:

(11)

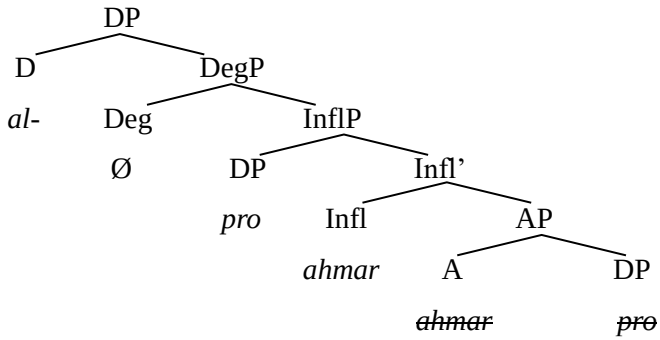


While Fassi Fehri's (1999) analysis gives insight on how the surface word order is achieved, it fails to account for how Case and agreement between the modified noun

and the modifying adjective is obtained as Assiri (2011) observes. Furthermore, this line of analysis does not really clarify how Case and agreement are determined on the predicative adjectives; in fact, Fassi Fehri's (1999) analysis overlooks constructions such as those in (8), (9a) and (10) where the predicative adjectives and the modified noun display different Case feature values.

A different analysis is found in Kremers (2003) who, building on Abney (1987) and Zwart (1992), proposes that AP is introduced as DegP (degree phrase) with an internal subject that he identifies as a covert resumptive *pro*. This null subject originates as a sister to the adjective before it moves to a specifier position of Infl. The whole DegP is selected then by D. Kremers argues that the adjective moves from its base position to Infl to acquire agreement features and the covert *pro* subject moves to the specifier position of Infl. For example, he asserts that the adjective *al-ahmar* 'the red' has the following structure (see Kremers' 2003:102).

(12)



The features of the topmost D in (12) above are identified independently when the adjective is used independently; in other words, Kremers assumes that if the adjective phrase is used predicatively (i.e. it is not DP-internal) its "D head is identified in the same way D head of any noun phrase is identified" (Kremers 2003:112). However, when the adjective is a DP-internal modifier, it is left adjoined to the modified noun and should be treated on par with relative clauses in the sense of Kayne (1994) (see Alenazy 2024 for argument against left adjunction of the relative clause). Kremers assumes that the D head in the adjective phrase receives Def, Case and φ-features under transfer from the nominal D associated with the modified noun. The adjective phrase according to him is a phase and because D is at the edge it is accessible to the higher D. This line of analysis does not show clearly why D has the bundle of Def, Case and φ-features, nor does it clarify how these features are transferred from the nominal D to the adjectival D. Feature inheritance, as introduced in Chomsky (2008), takes place between C and T because the former is the source of φ-features; T, which is always selected by C, does not have features in the lexicon. It is invisible under Kremers' assumptions why features are transferred from one D head to another D head. Furthermore, if AP proves to be a phase, as Kremers assumes, it becomes inert after it is completed which means that transfer of φ-features from D to pro is not permissible.

Shlonsky (2012) argues that the Semitic determiner has no φ-features. Accordingly, he proposes that the modified noun in the Semitic DP undergoes DP-internal movement across the adjective to a position preceding the adjective, but it is below the determiner. He clarifies that this movement is necessary for two reasons. First: NP as the locus of φ-features, should be brought to the edge of the DP phase so it can be probed by external heads such as T and v. Second: the head noun N has an interpretable D [iD] feature, whereas the adjective and Det have occurrences of uninterpretable D [uD] feature; Det head with its [uD] cannot probe its interpretable counterpart on N because of the intervening adjective. Therefore, movement of the noun is necessary to a position preceding the adjective to be accessible by Det. Consequently, both occurrences of [uD] on Det and the adjective are valued under Agree with N which has [iD].

Shlonsky's analysis explains why the modified noun precedes the modifying adjective and ascribes such an order to the need for the φ-features of the head noun to be on the edge of the DP. This claim is unattainable as it is not motivated theoretically. The standard theoretical assumption is that the head noun inside the DP structure forms the lexical core with φ-features and the whole DP acquire these features and is probed by higher heads; higher heads do not probe inside the DP structure for a matching goal (see Chomsky 2008). Furthermore, assuming that N has to move across the adjective and lands in a position below Det because the adjective blocks Agree between Det and N is not well justified because both the adjective and the noun are in the searching domain of Det which means that it is possible to establish Agree between Det and N without the movement of the latter. In fact, this proposal does not capture Case and agreement issues and does not show how the modifying adjective agrees with the noun.

Among the Agree-based analyses relevant to this paper is the analysis presented in Assiri (2011) who argues for Scan and Case-Reservation as two different syntactic operations to account for how agreement on attributive and predicative adjectives is obtained. On the one hand, Scan is not a feature-driven operation that takes place as a step preceding valuation to establish links between lexical items to enable them to share features. He further assumes that Scan which has probing and linking as subcomponents is one component of the operation Agree (the other component is valuation). It operates simultaneously with Merge (external or internal) to connect lexical items by creating links; the linked lexical items share features and subsequently show agreement. Case-Reservation, on the other hand, is concerned with agreement in Case. The basic claim according to Assiri is that the valued Case under Agree on the adjective is not completely deleted which allows the adjective bearing this feature to be part of a further Agree relation. This proposal claims that Scan as an operation that applies freely without being derived by the need to value features, yet it is conceived of as a component of Agree relation. This suggests that it is unnecessary as it complicates the computation. A refinement to this analysis would be to assume that association (or linking) of the features of the modified noun and the modifying adjective takes place prior to Merge; I propose that the association of φ-features (but not Case feature) takes place in the numeration after the lexical items have been selected from the lexicon (see section

4 below). A further problem with this line of analysis is that Case-Reservation raises the problem of lookahead in that Case is delayed until it receives the value that is consistent with the position of the adjective. Under the standard minimalist assumptions, Case is a derivative feature that renders the item bearing it an active goal; once it is valued it is deleted. Otherwise, the derivation crashes.

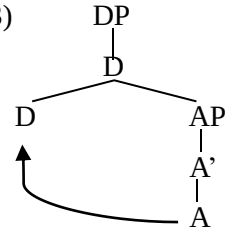
The analysis presented in this paper that assumes association of φ-features of both the noun and the modifying adjective in the numeration (see the next section) has the advantage of being more consistent with the idea of economy of derivation and representation which is the backbone of MP. As such, it evades the problems with previous analyses outlined above. Furthermore, the proposed analysis demonstrates adequately how the structures are built and how the surface word order and agreement are obtained.

4. Analysis

4.1. Agreement sources

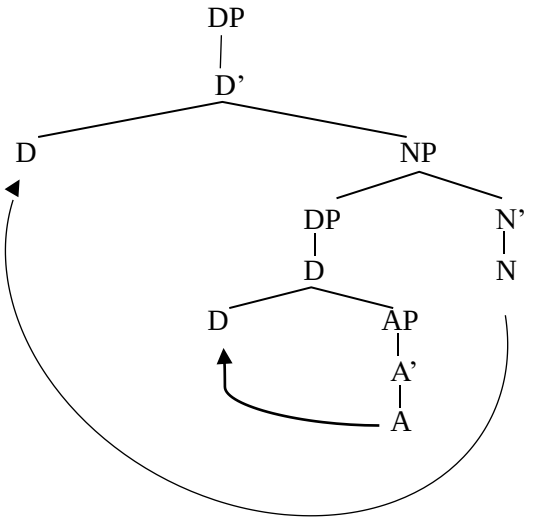
A useful starting point to address the adjectival agreement is the following straightforward assumption: because the adjective is nominal in character, it is introduced with its interpretable φ-features predetermined and valued before Merge, whereas Case feature is uninterpretable that is why it is introduced unvalued. In line with Fassi Fehri (1999) and Kremers (2003) among others, I represent the structure of the adjective as a DP with the adjective forming the lexical core that is the locus of φ-features in much the same way the noun does. However, I eliminate the unnecessary multiple projections such as FP, DegP, NumP or split DPs assumed in some previous analyses, as they are not required to derive the structures. Accordingly, the structure of the adjective is depicted as follows:

(13)



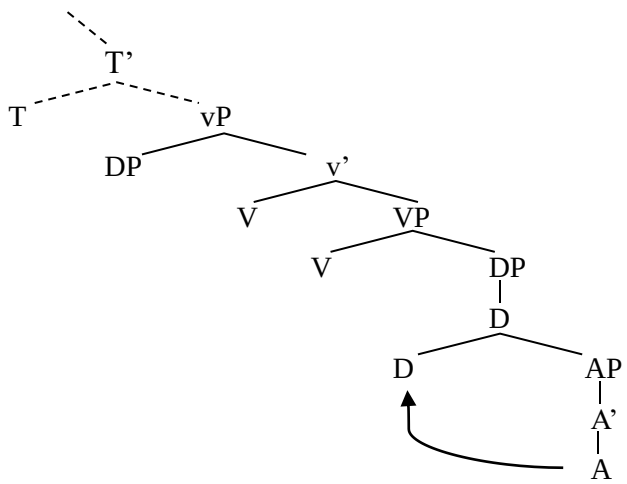
Within this DP structure, the adjective moves from A to D to provide lexical support to the affixial determiner (cf. Abney 1987; Alenazy 2024). The DP is an active goal by virtue of having the unvalued Case feature; it is available to enter in an Agree relation with a c-commanding functional head such as v or T. However, depending on whether the adjective is attributive or predicative, the mechanisms of Case feature valuation are different. When the adjective is attributive, the structure of the adjective (13) above appears internal to the DP structure of the modified noun; I assume that it is left adjoined to the modified noun which undergoes N to D movement, as (14) below illustrates:

(14)



By contrast, the predicative adjective is external to the DP structure containing the modified noun. As the structure (15) below shows, it appears as a DP in a complement position of a verb (or another copular head as we shall see in subsection 4.2 below) in copular sentences.

(15)



Having distinguished the structural positions occupied by the attributive adjective and the predicative adjective, we turn now to the issue of agreement and how it is manifested on both adjectives. The theoretical machinery underlying the analysis I introduce draws on Chomsky's (1995) notion that lexical items are endowed with inherent features in the lexicon but some features such as Case are added to the lexical items upon the insertion to the numeration. I assume that the insertion to the numeration allows not only for the addition of features, but also association of interpretable φ-features on lexical items. Being uninterpretable, Case feature is not subject to association; Case is valued during the course of the derivation in

accordance with the structural position occupied by the lexical item bearing it and the head with which it agrees. As regards in/definiteness, I follow the standard assumption in the literature (see Abney 1987) that the definite and the indefinite articles (which are bound morphemes) head the syntactic D to which the head noun incorporates (Ouhalla 1991; Fassi Fehri 1993; Benmamoun 2000). Contra Alqassas (2013) who assumes that in the case of adjectives, the definiteness marker is a reflex of a DEF feature that is added at PF, I claim that the adjective moves from its base position to D to incorporate with the in/definiteness marker. Furthermore, I argue that adjectives, unlike nouns, are invariably indefinite DPs. However, upon Merge, the predicative adjective remains indefinite. By contrast, because the attributive adjective coexists with the modified noun in one DP (see 14 above), I propose that the definite head D overrides the indefinite D, the head of the maximal projection of AP. In the sense of Yuzhi (2023) who claims that definiteness overrides indefiniteness in Chinese languages, I ascribe this override to that fact that definiteness is stronger than indefiniteness. Overriding of the adjective indefinite feature implies that it is revalued as definite to match the definite feature of the head noun. In fact, the data provide evidence in favor of this claim. In (16a) below, the definiteness on D of the modified noun overrides the indefinite D of the modified adjective. Conversely, (16b) is ruled out as override is impossible because the indefinite maximal D cannot override the definite D of the adjectives. (16c) is acceptable simply because both the noun and the adjective are indefinite which means that override is not necessary.

(16) a. qaraʔ-tu al-kitaab-a al-jadeed-a
read-I the-book-acc the-new-acc
'I read the new book.'

b. *qaraʔ-tu kitaab-an al-jadeed-a
read-I book-acc.indef. the-new-acc
'I read a new book'

c. qaraʔ-tu kitaab-an jadeed-an
read-I book-acc.indef. new-acc.indef.
'I read a new book.'

To sum up and make this proposal more explicit, I assume that agreement on the adjectives comes from the following sources:

1. Agreement in φ-features between the noun and the attributive or the predicative adjective is the outcome of an association process that takes place in the numeration to link the interpretable φ-features of the modified noun with the interpretable φ-features of the adjective, as mentioned earlier (see the last paragraph on page 9).
2. Agreement in Case is only available between the attributive adjective and the modified noun. This agreement is achieved via Agree with an external

head after the two occurrences of Case feature on the noun and the modifying adjective are united (see section 4.1 below). In contrast, Case on the predicative adjective is valued under Agree with a head whose domain does not contain the modified noun.

3. Agreement in definiteness between the attributive adjective and the modified noun is computed at the DP level where definiteness of the modified noun overrides the indefiniteness of the adjective. The predicative adjective is not subject to override; therefore, no agreement in definiteness with the modified noun is induced.

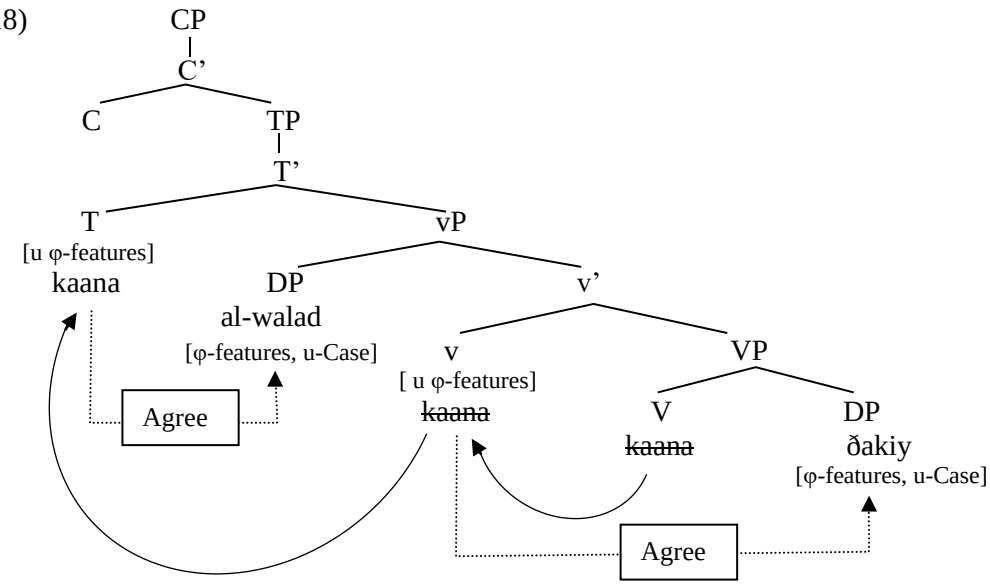
4.2. Analysis of predicative adjectives

Building on the discussion presented in 4.1 above, I assume that agreement in φ-features with the modified noun shown by the predicative adjective does not pose a challenge to the feature-based Agree model. Typically, Agree is a relationship between a functional head, *a probe* with unvalued φ-features, and a lexical item in its c-commanding domain. The lexical item which has valued φ-features is an active goal by virtue of having unvalued Case feature. Once the valued features are matched with their unvalued counterparts, the unvalued features on the probe and the goal are valued and deleted. In fact, the derivation of the predicative adjective under the assumptions of Agree Theory is straightforward, as the adjective originates as a DP complement which is probed by a c-commanding functional head. To put things into perspective, let us consider how the derivation of the copular sentence (8a) above, repeated here as (17) for convenience, proceeds.

(17) kaana al-walad-u ðakiyy-an
was.3ms the-boy-nom clever.3ms-acc.indef.
'The boy was clever.'

The derivation of the copular sentence in (17) above, which is a CP, starts with merging the adjective as a DP complement of the copular verb that undergoes V to v (the head of the vP phase) movement. The modified noun appears as a DP subject in the specifier position of the vP phase. Then vP is selected by T, the head of TP, which inherits its features from the C, the head of the CP phase, as assumed by Chomsky (2008). The adjective is merged with its valued interpretable φ-features and unvalued Case feature which renders it an active goal. The head v, on the other hand, has unvalued φ-features that should be valued. Therefore, it initiates Agree with the adjective and this Agree relation results in valuation and deletion of the unvalued φ-features of v and Case feature on the adjective which is valued as accusative. Then, the verb moves to T to lexically support it. T in turn, by virtue of having unvalued φ-features, initiates Agree with the DP subject in the specifier of vP; Agree between T and the DP subject value and deletes T's φ-features and results in agreement shown by the verb and nominative Case on the latter. Consider the structure (18) blow which schematizes this range of derivational relations.

(18)



The derivation of the copular sentence in (18) above shows clearly that Case values on the predicative adjective and the modified noun result from two different Agree relations in two different phases; The former is valued under Agree with v, the head of the vP phase while the latter is valued under Agree with T which inherits its features from C, the head of the CP phase. However, the zero-copula sentences seem to pose a challenge to this conclusion. Consider (19) below, in addition to those in (7) above.

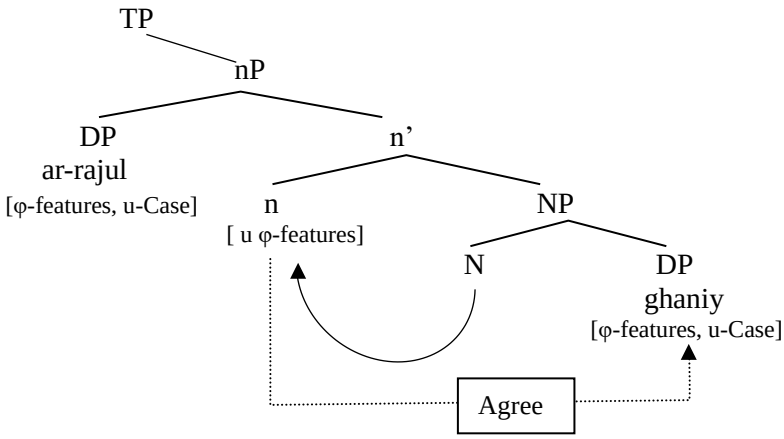
(19) ar-rajul-u ghaniyy-un
the-man-nom rich.3ms-nom.indef
"The man is rich."

In this verbless sentence both the predicative adjective and the modified noun are nominative. At first glance, this seems to suggest that the same nominative Case value on the noun and adjective is the product of Agree relation of some sort between the two lexical items. However, a closer look at the structure of the zero-copula sentence when it is introduced by an overt complementizer, as (20) below, reveals that Case values on both the noun and the adjective result from Agree relations with different heads (see also the discussion of the examples in (7) and (10) in section 2 above). Consider the following sentence where the modified noun and the adjective show accusative and nominative Case values respectively.

(20) inna ar-rajul-a ghaniyy-un
Comp the-man-acc rich.3ms-nom.indef
"Indeed, the man is rich."

The complementizer that introduces the clause is the source of tense and φ-feature as argued in Chomsky (2008). The overt complementizer, as the phase head, is responsible for accusative Case on the modified noun; this predicts that in (19) above nominative Case is also the outcome of Agree initiated by the phonologically null complementizer. In both sentences, Case on the predicative adjective is nominative; if Case on the predicative adjective is valued under Agree with the modified noun or with the complementizer, we would expect that the adjective in (20) bears accusative Case. To capture the structure of this sentence, I extend the analysis introduced in Alenazy (2009) which represents the copular sentence as CP similar to (18) above. To show that the zero-copula sentence has a clausal structure, the vP phase is replaced by an nP phase with a null n head, as (21) below shows. This head has unvalued φ-features that are valued under Agree with the predicative complement. However, being nominal, the head of nP values Case feature on the predicate as nominative.

(21)

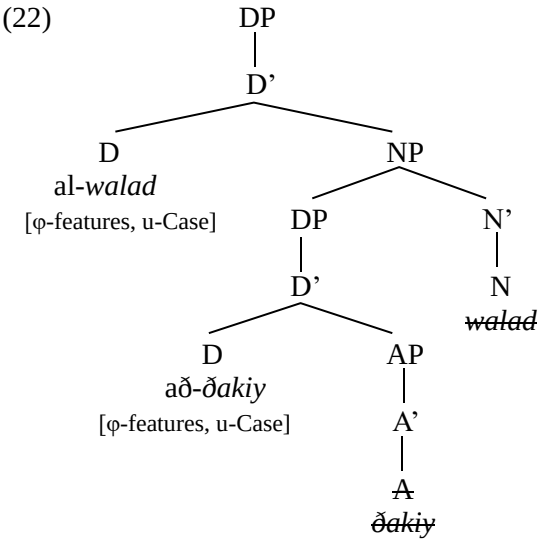


The phasal status of nP is confirmed by the behavior (20) above where an overt complementizer is used. The nominative predicate within the domain of the nP phase is not accessible to the accusative Case assigner C head (Alenazy 2009). To conclude, there is no direct Agree relation between the noun and the predicative adjective because each one of them exists in a domain that excludes the other; the adjective receives its Case feature value under Agree with the head of the vP phase (or the head of nP phase in zero copula sentences), whereas the modified noun receives its the Case value under Agree with T head. It is worth mentioning at this juncture that assuming the analysis proposed here excludes default nominative Case assignment to the predicative adjective in the zero-copula sentences. Fassi Fehri (1993) argues that default nominative Case is a last-resort Case that is assigned when no overt Case assigners are present in the structure. This view is inconsistent with the latest assumptions within the MP where Case as a derivative informal feature is undergoes valuation under Agree.

4.3. Analysis of attributive adjectives

The attributive adjective is internal to the DP structure of the modified noun which has the structure, as mentioned earlier (see the structure (14) above). Let us consider here how the DP structure of *al-walad-u að-ðakiyy-u* 'the clever boy' is built. The adjective appears as a DP left adjoined to the modified noun that undergoes N to D movement. The head N moves to D and, within the adjectival DP structure, the adjective moves from A to D. Both items (i.e. the adjective and the modified noun) are introduced with their φ-features that have been associated in the numeration valued. Definite D, the head of the maximal DP, overrides indefinite D, the head of the adjectival DP. Case feature on the adjective and the modified noun is introduced unvalued. This level of DP derivation is schematized as follows:

(22)

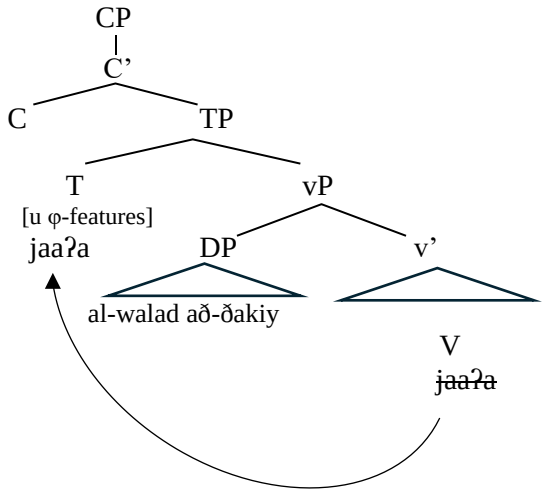


In this structure, the adjective and the modified noun are potential DP goals because they have unvalued Case features; they both are active and available for Agree with a higher matching probe to value their Case features. When the DP in (22) is used as a subject, as in (23), below it is probed by T (with its unvalued φ-features inherited from C, the head of the CP phase).

(23) jaaʔa al-walad-u að-ðakiyy-u
came.3ms the-boy-nom the-clever.3ms-nom
'The clever boy came.'

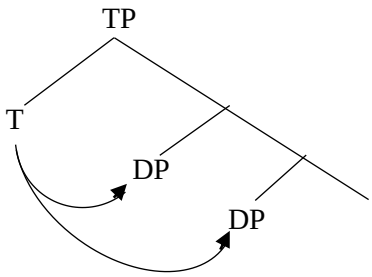
Following the standard assumptions of MP, the configurational relationship between the probe T and the DP subject in (23) above is schematized as follows (irrelevant detail omitted):

(24)



After the probe T locates the DP subject as an active goal in its searching domain, Agree applies and, as a result, the unvalued features are valued and deleted including Case feature on the noun and the adjective which is valued as nominative. However, the question that arises at this juncture is whether nominative Case occurrences on the noun and the adjective result from a Multiple Agree operation between T and these two lexical items in the sense of Hiraiwa (2001). Hiraiwa argues that a probe, such as T, is capable of initiating a simultaneous Agree relation with more than one goal in its domain providing that these goals are active and none of them is probed by another head. Compare Hiraiwa's model of Multiple Agree in (25) below with the configurational relationship between T and the DP that contains the attributive adjective in (24) above.

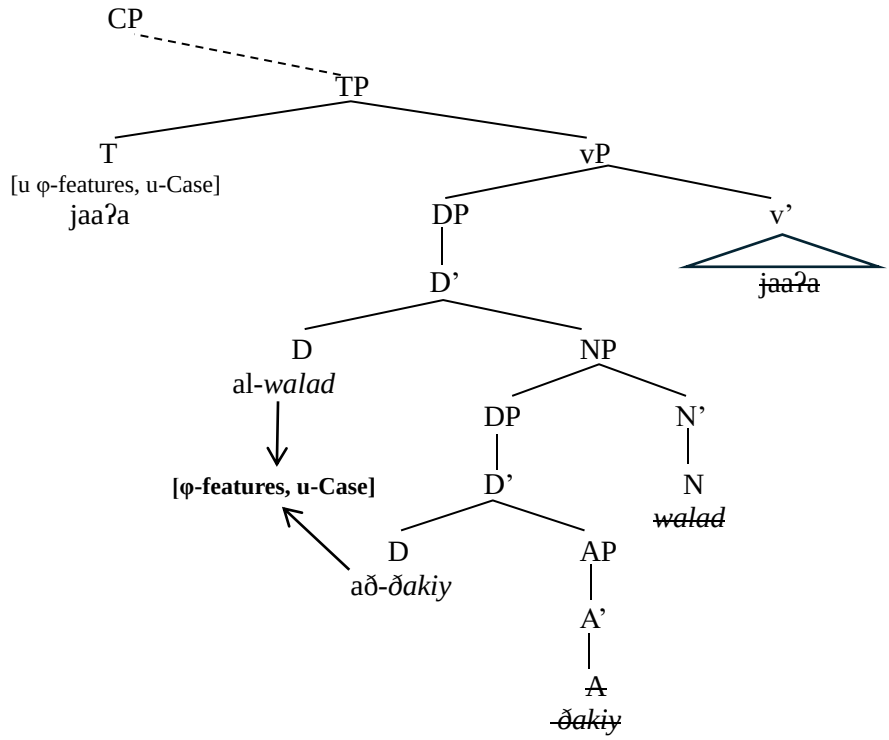
(25)



Apparently, the adjectival DP is not a separate goal that exists in its own. Rather, it is internal to the DP structure that has the modified noun as its lexical core; this means that it is in the protected domain of the DP phase which is not accessible to the external probe in conformity with PIC. In fact, the DP subject in (24) above serves as one single goal. To avoid the problems encountered in the previous analyses as outlined in section 3 above, I argue building on the discussion presented at the beginning of this section that the identical features of the noun and the adjective are grouped at the level of the DP before it becomes part of Agree with the external head. Put differently, the valued interpretable φ-features are united in

one group and the unvalued Case features on both items are united in another group, as the following structure illustrates:

(25)



The head T locates the DP subject as an active goal with valued φ-features and unvalued Case feature (those grouped features of the noun and the adjective). Under this configuration Agree applies and results in valuation of T's φ-feature and the DP's Case feature; the valued φ-features on T are realized as verbal agreement while the value of Case feature on the noun and the adjective is realized as nominative. It should be stressed here that this line of analysis is different from *feature sharing* (Frampton and Gutmann 2006; Pesetsky and Torrego 2007) which is adopted in Fakih (2017) who assumes that all the features of the modified noun including Case and definiteness are spread in the DP and then shared by the adjective.

5. Conclusion

The paper has presented an analysis of adjectival agreement displayed by attributive and predicative adjectives in MSA. It has shown that adjectival agreement has different sources. Agreement in φ-features between the noun and the modifying adjective is determined in the numeration, whereas agreement in Case is determined in the derivation. Agreement in definiteness between the noun and the attributive adjective is the outcome of override that takes place at the DP level. The thrust of this paper has been to argue that the feature-based Agree model as discussed in Chomsky (2001; 2008) accounts straightforwardly for the adjectival agreement

without the need for unnecessary multiple projections assumed in some previous analyses that complicate derivation and posit challenges to the principles of computational economy that underlie the MP. Because the adjectives are nominal in character, they are introduced as indefinite DPs. The adjective, like the noun, has valued φ-features and unvalued Case feature; the φ-features on the adjective are associated with their counterparts on the modified noun in the numeration before the two lexical items are merged. The predicative adjective appears as an indefinite DP complement of a copula which initiates Agree relation that results in valuation of Case feature. By contrast, the attributive adjective appears internal to the structure of the DP that contains the modified noun. Upon Merge, the definiteness of the modified noun overrides the indefiniteness of the adjective. Afterwards, the valued φ-features and the unvalued Case feature on both the modified noun and the modifying adjective are grouped together. The DP with these united features serves as an active goal that enters Agree with an external functional head; this Agree results in valuation of the probe's features as well as Case feature on the noun and the attributive adjective. In sum, we hope that this proposal has provided a useful contribution to the ongoing discussion of adjectival agreement. As such, I would speculate that further research is obviously needed to address numeration-based φ-feature agreement.

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