

On the morphosyntax of hybrid agreement in Jordanian Arabic

BASEM IBRAHIM MALAWI AL-RABA'A* 

KIMEP University, Republic of Kazakhstan

Received: February 3, 2021 • Revised manuscript received: June 2, 2022 • Accepted: June 9, 2022

Published online: August 10, 2022

© 2022 Akadémiai Kiadó, Budapest



ABSTRACT

This paper investigates the (hybrid) agreement patterns with collective and military rank nouns in Jordanian Arabic, both inside and outside the determiner phrase (DP). It will be argued that the number, unit (group), and feminization features are hosted on functional heads merged in various positions in the course of the syntactic derivation of the DP, and that agreement is determined on the basis of the Merge sites of those functional projections. More particularly, it will be shown that the heads Num(ber) and Unit may be situated higher or lower within the DP, and that each head controls agreement on the adnominals above it via feature sharing prior to movement, consequently producing different patterns of number agreement inside the DP, which in turn feeds DP-external agreement. The feminizing head, by comparison, is optionally merged, but when it is present, mixed gender agreement arises, depending on its Merge position. Finally, it will be shown that the above assumptions are substantiated by empirical data from Jordanian Arabic as well as from other languages.

KEYWORDS

Jordanian Arabic, mixed agreement, number, unit, gender, morphosyntactic analysis

1. INTRODUCTION

Agreement phenomena in Standard or colloquial Arabic, whether at the phrasal or sentential level, have been thoroughly investigated in the Arabic linguistics literature (see, for example, Ouhalla 1991, 2005; Fassi Fehri 1993, 1999, 2012; Aoun et al. 1994, 2010; LeTourneau 1995;

* Corresponding author. Department of English, KIMEP University, Dostyk Building 219, 4 Abai Avenue, Almaty, 050010, Republic of Kazakhstan. E-mail: balrabaa@kimep.kz

Benmamoun 2000; Mohammad 2000; Harbert & Bahloul 2002; Shlonsky 2004; Soltan 2006; Ouwayda 2014; Jarrah 2019, 2020). The above authors have focused on agreement patterns inside and outside of the determiner phrase (e.g., between nouns and adjectives, subjects and verbs, or complementizers and subjects, etc.). Nevertheless, areas concerning semantic or hybrid agreement have barely received any attention, if any. There are two phenomena of mixed agreement in Jordanian Arabic (JA), which, to the best of my knowledge, have never been previously examined in any Arabic dialects; such phenomena manifest themselves in mismatched number and gender agreements with collective and military rank nouns, respectively. Consider, for instance, the data in (1)–(2) below.¹ (The transcription of the non-English data used throughout the paper is the International Phonetic Alphabet (IPA).)

- (1) el-fariig faaz / faaz-**u** bi-l-mubaaraah. (JA)
 the-team won.SG won-PL in-the-match
 ‘The team won the match.’
- (2) el-qaʔid traffaʕ / traffaʕ-at. (JA)
 the-commander.M got.promoted.M got.promoted-F
 ‘The (male/female) commander got promoted.’

Notice that *el-fariig* ‘the team’ in (1) is morphologically singular but controls either singular or plural agreement on the predicate, and that *el-qaʔid* ‘the commander’ in (2) is masculine but triggers either masculine or feminine agreement. Furthermore, more complex hybrid agreement is also found inside the determiner phrase (DP), as we will see later. Given that the aforementioned phenomena have remained understudied in the Arabic linguistics literature, this paper, therefore, aims to explore the morphosyntactic structure of constructions involving collective and military rank nouns, and to explain the agreement patterns in such constructions on both the phrasal and sentential levels. Drawing on Landau (2016) and Fassi Fehri (2018), I will particularly argue that the Num and Unit heads host the number and unit features in DPs containing collective nouns, and that the locus of such heads within the DP governs the type of agreement in both the nominal and clausal domains. Assuming a bottom-up derivation, adnominals will only access/value the feature on the closest head in their c-command domain, whether it is Num or Unit. Regarding DPs with military rank nouns, I will also argue, following Pesetsky (2014), that when a feminizing head is merged in such DPs, the higher adnominals as well as the verb must show feminine agreement, but when that head is absent, only masculine agreement is available.

The organization of this article is as follows. Section 2 sheds light on the (complex) hybrid agreement patterns in constructions involving collective and military rank nouns in JA, drawing comparisons between JA and other languages. Sections 3 and 4 provide a syntactic analysis for both the number and gender agreement phenomena respectively inside and outside the DP, with special focus on the DP structure. Section 5 discusses how the current analysis is related to previous ones within the minimalist framework. Finally, Section 6 presents concluding remarks.

¹The abbreviations used in the glosses throughout this paper are as follows: ACC = accusative, COP = copula, F = feminine, 1 = first person, GEN = genitive, ITER = iterative, M = masculine, NEG = negation, NOM = nominative, PAR = partitive, PAST = past, PL = plural, SG = singular, 3 = third person.



2. THE AGREEMENT PATTERNS WITH COLLECTIVE AND MILITARY RANK NOUNS IN JA

To begin with, collective nouns in JA, just like in other Arabic varieties as well as in other languages, are described as nouns that are morphologically singular but semantically signify pluralities or groups of individuals, such as *fariig* ‘team’, *laḡnah* ‘committee’, *ṣiṣaabah* ‘gang’, *ḥukuumah* ‘government’, *ḡamaaṣah* ‘group of people’, etc. Such collective nouns, according to Fassi Fehri (2018), considerably differ from pluratives (nouns taking the feminine marker *-at* which denotes either pluralities or groups, such as *l-maḡuusijj-at* ‘the Magians’, *l-muṣtazil-at* ‘the Mutazilites’, *s-saḥar-at* ‘the magicians’, etc.) in terms of agreement. That is, pluratives control either plural or feminine singular agreement on the verb, as shown in (3a–b), adapted from Fassi Fehri (2018, 150), whereas collective nouns trigger only singular agreement.² Note that this behavior of collective nouns characterizes Standard Arabic, not JA.

- (3) a. *l-maḡuusijj-at-u* *qaal-uu* *haaḏaa.* (Standard Arabic)
the-Magians-F-NOM said-PL this.ACC
b. *l-maḡuusijj-at-u* *qaal-at* *haaḏaa.*
the-Magians-F-NOM said-SG this.ACC
‘The Magians said this.’

When the verb has plural agreement, as in (3a), the pluralive subject refers to individuals performing distributive actions, but when it has feminine singular agreement, as in (3b), the subject is viewed as a collective unit performing a group action. This hybrid agreement behavior observed in (3a–b), as stated by Fassi Fehri, is not available for morphologically singular collective subjects in Standard Arabic like *fariig* ‘team’, *laḡnah* ‘committee’, *ṣiṣaabah* ‘gang’, etc., since such nouns, as mentioned above, manifest only singular agreement, as demonstrated in (4).

- (4) a. *al-fariiq-u* *laṣib-a* *ḡajjid-an.* (Standard Arabic)
the-team-NOM played-SG well-ACC
‘The team played well.’
b. **al-fariiq-u* *laṣib-uu* *ḡajjid-an.*
the-team-NOM played-PL well-ACC
Intended: ‘The team played well.’

While collective nouns of this type allow only singular agreement in Standard Arabic, as in (4), or in Moroccan Arabic, as reported by Fassi Fehri (2018), they are responsible for different agreement behaviors in JA, both phrasally and sententially.³ Consider the data in (5)–(6).

²In Fassi Fehri (2018), the feminine marker *-at* attached to pluratives denotes a unit/group or plurality reading rather than a biologically feminine referent.

³Agreement with such collective nouns in other Arabic dialects, to my knowledge, has not been discussed in the literature.



- (5) a. el-fariig li-xḡar faaz bi-l-mubaaraah. (JA)
 the-team the-green.SG won.SG in-the-match
 b. el-fariig el-xuḡur faaz-u bi-l-mubaaraah.
 the-team the-green.PL won-PL in-the-match
 ‘The green team won the match.’
- (6) a. el-ṣiṣaabah el-xaṭiir-eh haddad-at Zeed.⁴ (JA)
 the-gang the-dangerous-SG threatened-SG Zeed
 b. el-ṣiṣaabah el-xaṭiir-iin haddad-u Zeed.
 the-gang the-dangerous-PL threatened-PL Zeed
 ‘The dangerous gang threatened Zeed.’

In fact, the picture becomes even more complicated when we have two modifying adjectives inside the DP. Significantly, the verb must always shows the same agreement as the outer adjective, irrespective of the agreement pattern in the DP, as illustrated in (7)–(8).

- (7) a. el-fariig li-xḡar eḡ-ḡaṭiir faaz bi-l-mubaaraah. (JA)
 the-team the-green.SG the-skilled.SG won.SG in-the-match
 b. el-fariig el-xuḡur eḡ-ḡaṭr-iin faaz-u bi-l-mubaaraah.
 the-team the-green.PL the-skilled-PL won-PL in-the-match
 c. el-fariig li-xḡar eḡ-ḡaṭr-iin faaz-u bi-l-mubaaraah.
 the-team the-green.SG the-skilled-PL won-PL in-the-match
 d. el-fariig el-xuḡur eḡ-ḡaṭiir faaz bi-l-mubaaraah.
 the-team the-green.PL the-skilled.SG won.SG in-the-match
 ‘The skilled green team won the match.’

⁴It must be noted here that in (6) although *-ah* in *ṣiṣaabah* ‘gang’ (or in similar nouns like *laḡnah* ‘committee’ and *hukuumah* ‘government’) is a singular feminine marker, it should in fact be considered only a singular marker for two reasons. First, semantically speaking, nouns, such as *ṣiṣaabah* ‘gang’, *laḡnah* ‘committee’, and *hukuumah* ‘government’, etc., are not intrinsically/inherently masculine nor feminine; it is just that inanimate nouns in Arabic (as a gendered language) are typically assigned either a masculine or feminine morphological form (e.g., *fariig* ‘team.M’ versus *ṣiṣaabah* ‘gang.F’). Second, the singular marker *-ah* is an essential part of the morphology of such nouns since its deletion results in words that do not exist in Arabic (e.g., **ṣiṣaab*, **laḡn*, **hukuum*), which differs from the singular marker in pluratives, discussed by Fassi Fehri (2018), because *-at* in pluratives is a suffix added to already existing words, as in *maḡuusijj* ‘Magian’ versus *maḡuusijj-at* ‘Magians-F’ or *muṣṭazil* ‘Mutazilite’ versus *muṣṭazil-at* ‘Mutazilites-F’. It is worth mentioning here that *-eh/-ah* in JA (the equivalent of *-at* in Standard Arabic), according to Jaradat & Jarrah (to appear), serves another function, opposite to plurative in Standard or Moroccan Arabic (Fassi Fehri 2018), in that it converts plural collective nouns into singularives, so when *-eh*, for instance, is suffixed to *tuffaah* ‘apples’, it yields the singularive form *tuffaah-eh* ‘one apple’ (see also Borer & Owayda 2010). Crucially, the collective nouns discussed by Jaradat & Jarrah are those that are plural, such as *tuffaah* ‘apples’, *baṣal* ‘onions’, *baqar* ‘cows’, etc., but refer to sums or kinds of entities as a whole (see also Harrel 1962; Erwin 1963; Ojeda 1992; Mathieu 2013), which are distinct from the collective nouns currently under investigation, since the latter are morphologically singular but semantically plural and cannot take the singularive marker in question.



- (8) a. el-*fiṣaabah* el-*xatīir-eh* el-*muḍḡrim-eh* haddad-**at** Zeed. (JA)
 the-gang the-dangerous-SG the-criminal-SG threatened-SG Zeed
- b. el-*fiṣaabah* el-*xatīir-iin* el-*muḍḡrim-iin* haddad-**u** Zeed.
 the-gang the-dangerous-PL the-criminal-PL threatened-PL Zeed
- c. el-*fiṣaabah* el-*xatīir-eh* el-*muḍḡrim-iin* haddad-**u** Zeed.
 the-gang the-dangerous-SG the-criminal-PL threatened-PL Zeed
- d. el-*fiṣaabah* el-*xatīir-iin* el-*muḍḡrim-eh* haddad-**at** Zeed.
 the-gang the-dangerous-PL the-criminal-SG threatened-SG Zeed
 ‘The dangerous criminal gang threatened Zeed.’

Note that both adjectives can be singular, as in (7a)/(8a), triggering singular agreement on the verb, but if the adjectives are plural, as in (7b)/(8b), then the verb takes the plural form. Nonetheless, if the adjective closer to the noun is singular but the farther one is plural, as in (7c)/(8c), then the verb must exhibit plural agreement, but when the singular/plural forms of the adjectives are reversed, as in (7d)/(8d), the verb must receive singular agreement. Any agreement mismatches between the verb and the outer adjective induces ungrammaticality, as evidenced by the following examples.

- (9) a. *el-*fariig* li-*xḡar* eḡ-*faatir-iin* faaz bi-l-*mubaaraah*. (JA)
 the-team the-green.SG the-skilled-PL won.SG in-the-match
- b. *el-*fariig* el-*xuḡur* eḡ-*faatir* faaz-**u** bi-l-*mubaaraah*.
 the-team the-green.PL the-skilled.SG won-PL in-the-match
 Intended: ‘The skilled green team won the match.’
- (10) a. *el-*fiṣaabah* el-*xatīir-eh* el-*muḍḡrim-iin* haddad-**at** Zeed. (JA)
 the-gang the-dangerous-SG the-criminal-PL threatened-SG Zeed
- b. *el-*fiṣaabah* el-*xatīir-iin* el-*muḍḡrim-eh* haddad-**u** Zeed.
 the-gang the-dangerous-PL the-criminal-SG threatened-PL Zeed
 Intended: ‘The dangerous criminal gang threatened Zeed.’

Similarly, the agreement behavior of adjectives is also manifested in demonstratives, as shown below.

- (11) a. *haaḡ* el-*fariig* faaz bi-l-*mubaaraah*. (JA)
 this.M.SG the-team won.SG in-the-match
- b. *haḡol* el-*fariig* faaz-**u** bi-l-*mubaaraah*.
 those.PL the-team won-PL in-the-match
 ‘This team won the match.’
- (12) a. *haaj* el-*fiṣaabah* haddad-**at** Zeed. (JA)
 this.F.SG the-gang threatened-SG Zeed



- b. haḏol el-ḡiṣaabah haddad-**u** Zeed.
 those.PL the-gang threatened-PL Zeed
 ‘This gang threatened Zeed.’

Notably, whichever agreement the demonstrative exhibits must match the agreement on the verb; otherwise, ill-formedness arises, as in (13).

- (13) a. *haaḏ el-fariig faaz-**u** bi-l-mubaaraah. (JA)
 this.M.SG the-team won-PL in-the-match
 b. *haḏol el-fariig faaz bi-l-mubaaraah.
 those.PL the-team won.SG in-the-match
 Intended: ‘This team won the match.’

Finally yet importantly, the collective nouns at hand can also bind both singular and plural anaphors, as in (14)–(15), and felicitously combine with predicates that can only take plural subjects, as in (16).

- (14) el-fariig ṭawwar nafs-**uh** / ṭawwar-**u** nafs-**hum**. (JA)
 the-team improved.SG self-it.M improved-PL self-**them.M**
 ‘The team improved itself/themselves.’
 (15) el-ḡiṣaabah sallam-**at** nafs-**ha** / sallam-**u** nafs-**hum**. (JA)
 the-gang turned.in-SG self-it.F turned.in-PL self-**them.M**
 ‘The gang turned itself/themselves in.’
 (16) el-fariig / el-ḡiṣaabah **ṭḡammaḡ-u** bi-n-naadi. (JA)
 the-team the-gang gathered-PL in-the-gym
 ‘The team/gang gathered in the gym.’

While such hybrid agreement with collective nouns has not been attested in any other Arabic dialects, it is found in several dialects of English, but to a lesser degree (see Quirk et al. 1985; Levin 2001; Huddleston & Pullum 2002; Hristov 2013; Landau 2016; Smith 2017, among others). This is so because English does not permit all the types of agreement observed in (5)–(15) above, particularly when it comes to demonstratives. Consider the data below, adapted from Smith (2017, 824, 826, 834).

- (17) a. **This/*These** committee **are** deciding on a solution. (English)
 b. The **international** committee **are** deciding on a solution.
 (18) a. The government **has/have** approved the measure. (English)
 b. The government **decides/decide** who is hired.



- (19) a. The government gave **itself** a deadline. (English)
 b. The government have offered **themselves** up for criticism.
- (20) The committee/government **is gathering** now. (English)

Observe that in English, unlike in JA, only singular demonstratives can merge with collective nouns, as shown in (17a) versus (11)/(12). Additionally, noun-adjective agreement is visible in JA, as in (5)–(8), but invisible in English, as in (17b). The other agreement patterns of collective nouns in English are similar to those in JA; that is, such nouns in both languages trigger singular or plural agreement on the verb (e.g., see (5) and (18)), and can antecede singular and plural anaphors as well as combine with collective predicates (e.g., compare (14)/(16) with (19)/(20)).⁵

Another mixed agreement phenomenon within DP that is somewhat similar to the one in JA is observed in Hebrew. The Hebrew lexical item *beʔal-im* ‘owner’ morphologically has a plural marker but can signify both singular and plural referents, resulting in different patterns of agreement inside as well as outside its maximal projection, as shown in the following examples, adapted from Landau (2016, 984).

- (21) a. ha-beʔal-im ha-kodem maxar et ha-makom. (Hebrew)
 the-owner-PL the-previous.SG sold.3SG ACC the-place
 ‘The previous owner sold the place.’
- b. ha-beʔal-im ha-kodm-im maxru et ha-makom.
 the-owner-PL the-previous-PL sold.3PL ACC the-place
 ‘The previous owners sold the place.’

The adjectival agreement in (21) is in principle parallel to that of JA given in (5)–(6) above. Moreover, mixed agreement inside DPs containing *beʔal-im* ‘owner-PL’ is also possible in Hebrew but restricted to one direction, unlike the situation in JA (more details on this will follow later).

⁵A reviewer asked if collective predicates like *has/consist of eleven players* have an effect on the agreement patterns in JA. While such predicates are unambiguously collective, namely, should have a singular form in English as in (i) (see de Vries 2021), they can take either the singular or plural form in JA as in (ii).

- (i) a. The team has/*have eleven players. (English)
 b. The team consists/*consist of eleven players.
- (ii) a. el-fariig fii-**h** / fii-**hum** ʔihdaʕʕar laaʕib. (JA)
 the-team has-SG has-PL eleven players
 ‘The team has eleven players.’
- b. el-fariig bitkawwan / bitkawwan-**u** min ʔihdaʕʕar laaʕib.
 the-team consist.SG consist-PL of eleven players
 ‘The team consists of eleven players.’

It must be noted, however, that although such predicates may appear in the singular or plural form in JA, the former is by far the commonly used one, whereas the latter is marked and much less common. This type of markedness-based variation lies beyond the scope of this study, so I will not pursue it further here.



As far as gender agreement is concerned, military rank nouns in JA trigger either masculine or feminine agreement on the targets. Compare the sentences in (22) to those in (23).

- (22) a. el-qaʔid el-ɕadiid traffaʃ. (JA)
the-commander.M the-new.M got.promoted.M
‘The new (male) commander got promoted.’
- b. el-qaʔid el-ʔaʃla el-ɕadiid traffaʃ.
the-commander.M the-high.M the-new.M got.promoted.M
‘The new (male) high commander got promoted.’
- (23) a. el-qaʔid el-ɕadiid-eh traffaʃ-at. (JA)
the-commander.M the-new-F got.promoted-F
‘The new (female) commander got promoted.’
- b. el-qaʔid el-ʔaʃla el-ɕadiid-eh traffaʃ-at.
the-commander.M the-high.M the-new-F got.promoted-F
‘The new (female) high commander got promoted.’

While the targets (adjectives, verbs) in (22) bear only masculine agreement, we see that there is mixed agreement in (23). Similarly, demonstratives and anaphors are also potential targets, as exemplified in (24)–(25).

- (24) haaʔ el-mulaazim bihibb haal-uh. (JA)
this.M.SG the-lieutenant.M like.M self-**him**
‘This (male) lieutenant likes himself.’
- (25) haaj el-mulaazim bithibb haal-ha. (JA)
this.F.SG the-lieutenant.M like.F self-**her**
‘This (female) lieutenant likes herself.’

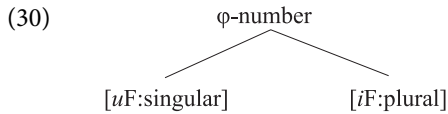
Crucially, the verb and the anaphor must show the same agreement as the demonstrative because any agreement mismatches lead to ungrammaticality, as, for example, seen below.

- (26) *haaʔ el-mulaazim bithibb haal-ha. (JA)
this.M.SG the-lieutenant.M like.F self-**her**
Intended: ‘This (female) lieutenant likes herself.’
- (27) *haaj el-mulaazim bihibb haal-uh. (JA)
this.F.SG the-lieutenant.M like.M self-**him**
Intended: ‘This (male) lieutenant likes himself.’

Whereas such agreement patterns are only possible with nouns denoting military ranks in JA, as in (24)–(25), they occur with a wider range of profession nouns in Russian, such as *vratč*



As I will show, none of the available analyses can account for such agreement sequences. To start with, Smith (2017, 836), taking the two types of agreement features (CONCORD and INDEX) introduced by Wechsler & Zlatić (2000, 2003) as a point of departure, argues that the number phi-feature (φ) of collective nouns is split between singular and plural properties, as represented in (30), with uF reflecting the morphological value and iF the semantic value. This φ -number feature, according to Smith, seems to be placed on the noun (N) itself rather than on the head Num.



Smith adds that when an agreement relation is established between a controller (a collective noun) and a target (tense = T, for example), it is the c-command relation, described in terms of LF-Visibility in (31) below (from Smith 2017, 827), which decides whether the target gets singular or plural agreement.

- (31) LF-Visibility
 With [collective nouns], plural agreement requires the controller to c-command the target at LF, but singular agreement does not.

Consequently, LF-Visibility, for instance, accounts for the presence versus absence of semantic agreement in (32)–(33), respectively. (The data below are adapted from Smith (2017, 827–828); see also Elbourne (1999, 81).)

(32) A northern team **is/are** likely to be in the final. (English)

(33) There **is/*are** a committee deciding the budget for next year. (English)

Plural agreement is permitted in (32) because the subject (*a northern team*) c-commands T when situated in the specifier position of tense phrase (Spec-TP), but prohibited in (33) since no such c-command relation is available between the controller and the target. Although Smith's approach nicely explains hybrid agreement in English, it falls short of accounting for the JA facts. This is evidenced by the fact that plural agreement is operative in JA, regardless of whether surface c-command is at play or not, as demonstrated by the following data.

- (34) a. el-fariig faaz-**u** bi-l-mubaaraah. (JA)
 the-team won-**PL** in-the-match
- b. faaz-**u** el-fariig bi-l-mubaaraah.
 won-**PL** the-team in-the-match
 'The team won the match.'

Note that *faaz-u* 'won' shows plural agreement in both (34a–b). In Arabic, unlike in English, the subject can remain in its base-generated position (the specifier of the verb phrase, Spec-vP), with the verb moving to T, as in (34b), suggesting that c-command does not play a crucial role in



governing plural agreement in such JA constructions. Moreover, Smith’s analysis cannot explain adjectival agreement mismatches inside the DP either, as in (7c–d) and (8c–d) respectively, repeated below as (35a–b) and (36a–b).

- (35) a. el-fariig li-xḏar ef-jaaṭr-**iin** faaz-**u** bi-l-mubaaraah. (JA)
 the-team the-green.SG the-skilled-PL won-PL in-the-match
- b. el-fariig el-xuḏur ef-jaaṭir faaz bi-l-mubaaraah.
 the-team the-green.PL the-skilled.SG won.SG in-the-match
 ‘The skilled green team won the match.’
- (36) a. el-ṡiṡaabah el-xaṡiir-**eh** el-muḏgrim-**iin** haddad-**u** Zeed. (JA)
 the-gang the-dangerous-SG the-criminal-PL threatened-PL Zeed
- b. el-ṡiṡaabah el-xaṡiir-**iin** el-muḏgrim-**eh** haddad-**at** Zeed.
 the-gang the-dangerous-PL the-criminal-SG threatened-SG Zeed
 ‘The dangerous criminal gang threatened Zeed.’

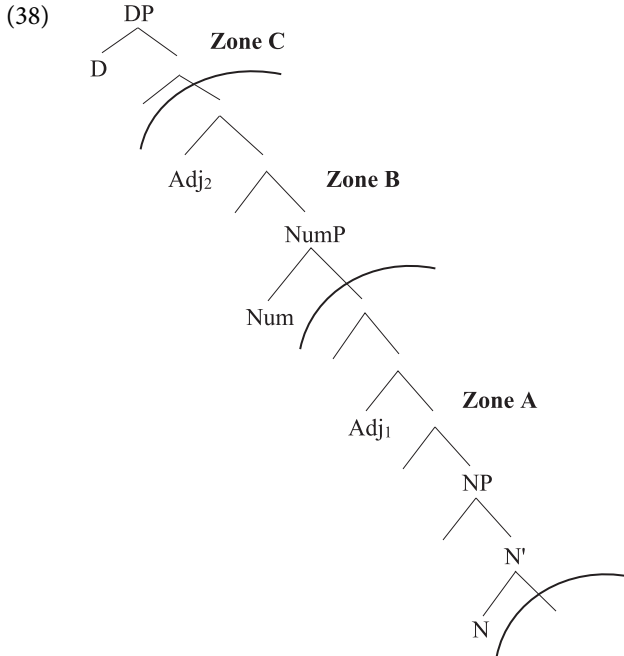
In his account of mixed agreement patterns in Hebrew constructions involving the noun *beʔalim* ‘owner’, Landau (2016), unlike Smith (2017), argues that CONCORD is placed on N but INDEX on Num, bearing on the proposal that number phrase (NumP) is a functional projection located between DP and NP, which was first posited by Ritter (1987, 1988, 1991, 1995) and further defended in subsequent works (see Delfitto & Schroter 1991; Siloni 1991, 1996, 1997; Fassi Fehri 1993, 2012, 2018; Koopman 1999; Benmamoun 2000; Munn & Schmitt 2005). To clarify Landau’s line of reasoning, consider (37a–b), adapted from Landau (2016, 1005).

- (37) a. ha-beʔalim ha-pratij-im ha-axaron sel ha-tmuna haja
 the-owner the-private-PL the-last.SG of the-painting was.3SG
 ha-psixoʔanalitikaʔi Jacques Lacan. (Hebrew)
 the-psychoanalyst Jacques Lacan
- b. *ha-beʔalim ha-prati ha-axron-im sel ha-tmuna haja/haju
 the-owner the-private.SG the-last-PL of the-painting was.3SG/PL
 ha-psixoʔanalitikaʔi Jacques Lacan.
 the-psychoanalyst Jacques Lacan
 ‘The last private owner of the painting was the psychoanalyst Jacques Lacan.’

To begin with, Hebrew only allows adjectival mixed agreement in one direction, from plural to singular, as indicated in (37a) versus (37b) above. Another essential point here is that *ha-beʔalim* ‘the owner’ in (37), as stated by Landau, semantically denotes a single referent, in which case the singular morphological form of the farther adjective in (37a) represents INDEX agreement but the plural morphology of the closer adjective CONCORD agreement. The reason why (37a) is grammatical, as explained by Landau, is that the inner adjective *ha-pratij-im* ‘the-private-PL’ is merged above the NP and below NumP, thus the only option it has is to value its ϕ -number feature by probing the head N; and since N bears CONCORD plural morphology, the adjective must carry the same plural marker. The outer adjective *ha-axaron* ‘the-last.SG’, by comparison, is merged above NumP whose head is specified as singular, and thus probes Num, consequently



receiving a singular form. Subsequently, the D head also acquires the INDEX feature by probing Num, ultimately triggering singular agreement on the verb once T values its φ -number by agreeing with D. The sketch below, from Landau (2016, 996), illustrates:



The DP is divided into 3 zones, as seen above, with Zone A encompassing the CONCORD agreement of the lower adjective (Adj_1) in (37a), Zone B the INDEX agreement of the higher adjective (Adj_2), and finally Zone C the INDEX agreement of the verb. The hierarchical structure in (38) explains the unacceptability of the Hebrew sentence in (37b). Crucially, Landau's model, described above, cannot capture the JA facts either. This is so because the mismatched adjectival agreements within the DP are not unidirectional (as in Hebrew) but rather bidirectional, as exemplified in (39a–b) repeated from (29a–b).

- (39)
- | | | | | |
|----|--------------------------|--------------|-----------------------|------|
| a. | el-fariig | li-xǝḏar | eʃ-ʃaatir- iin | (JA) |
| | the-team | the-green.SG | the-skilled-PL | |
| b. | el-fariig | el-xuḏur | eʃ-ʃaatir | |
| | the-team | the-green.PL | the-skilled.SG | |
| | 'the skilled green team' | | | |

Notice that the inner adjective in (39a) has CONCORD agreement, but the outer one shows INDEX agreement; in contrast, the reverse agreement behaviour is observed in (39b). The question arising here is how such mismatched agreements can be accounted for. In response to this inquiry, the agreement patterns in (39a–b) can be captured by appealing to Fassi Fehri's (2018) postulation of unit phrase (UnitP) in DPs with pluratives, which is another functional projection between the DP



The above DP structure is based on Fassi Fehri's (1999, 2018). Presented strictly in a bottom-up fashion, the maximal projection NP is first merged with Num, creating NumP, which is in turn merged with Unit, yielding UnitP. The XP layers dominated by the DP are functional projections used to accommodate adjectives as well as other adnominals (Fassi Fehri 1999; Cinque 2005); more precisely, in Fassi Fehri's approach XP₁ and XP₂, which are higher than NP, are functional projections represented as nP₁ and nP₂, to which the adjectives adjoin before movement takes place, whereas XP₃ and XP₄ are functional projections represented as segments of D, namely, dP₁ and dP₂, to whose Specs the adjectives move in order to check their features (e.g., definiteness, Case) against those of the higher head.⁸ Given that collective nouns are semantically plural, I am assuming here that the plural feature ([PL]) is specified on Num (see Ritter 1991; Landau 2016; Fassi Fehri 2018, among many others); [+UNIT] (= the unitizing feature, on the other hand, is

⁸I am opting for Fassi Fehri's (1999) approach rather than for Cinque's (2005) phrasal (NP) movement for the following reasons. First, head movement of N to D does exist inside Arabic synthetic DPs, which is robustly acknowledged in the literature (see Ritter 1991, 1995; Siloni 1996, 1997; Fassi Fehri 1993, 2012, 2018; Koopman 1999; Benmamoun 2000; Munn & Schmitt 2005; to mention but a few). Second, Fassi Fehri indicates that Arabic complex DPs provide strong evidence against NP raising. See the following example from Fassi Fehri (1999, 120).

- (i) *muhaarabat-u l-hukuumat-i l-muntaḏarat-i li-l-ḡirtifaaʔ-i* (Standard Arabic)
 fighting-NOM the-government-GEN the-expected-GEN of-the-corruption-GEN
 'the expected fighting of the corruption by the government'

According to Fassi Fehri, the NP raising approach, as in Cinque (2005), cannot produce the correct order of the adjective *l-muntaḏarat-i* 'the expected' in (i) because it wrongly predicts that the complement *li-l-ḡirtifaaʔ-i* 'of the corruption' should be dragged along (pied-piped) together with the raised NP (the possessor *l-hukuumat-i* 'the government') and thus positioned higher than the adjective *l-muntaḏarat-i* 'the expected'. Third, in Fassi Fehri's analysis there is empirical evidence corroborating the movement of Arabic attributive adjectives to higher positions independently of the N/NP. This is illustrated by (ii) from Fassi Fehri (1999, 121).

- (ii) *l-xabar-u l-muḏaaʕ-u muʔaxxar-an* (Standard Arabic)
 the-news-NOM the-broadcast-NOM late-ACC
 'the lately broadcast news'

Observe that the adjective *l-muḏaaʕ-u* 'the broadcast' precedes its modifying adverbial *muʔaxxar-an* 'late'. With this in mind, if the adverbial is originally adjoined to Spec-AP (the specifier position of the adjective phrase), as pointed out by Fassi Fehri, then the fact that the adjective appears in a pre-adverbial position suggests that it has independently moved up to the left of the AP (for more details, see Fassi Fehri 1999). The aforementioned discussion explains the motivation for the movement of both adjectives in structures like (41b). One last remark, raised by an anonymous reviewer, is whether *li-xḏar* 'the-green.sg' in (41b) involves focus since it (as a color adjective) should typically follow *ef-faaṭir* 'the-skilled.sg'. According to Fassi Fehri (1999), in Standard Arabic constructions equivalent to (41b) the color adjective also receives focus (see also Cinque 2005), but the focus feature is not the only motivation for it to move under Fassi Fehri's view. However, consultation with five native speakers of JA shows that (41a) and (iii) both exhibit the neutral surface string of the adjectives within the DP, namely that neither adjective is focused in both DPs.

- (iii) *el-fariig ef-ḡaaṭir li-xḏar* (JA)
 the-team the-skilled.sg the-green.sg
 'the skilled green team'

Although (iii) requires reordering of the adjectives also in their original positions, this does not have any effect on but rather supports the current analysis, because both orders induce the predicted hybrid agreement patterns in JA.



specified on Unit.⁹ Regarding the adjectives, *li-xḍar* ‘the-green.SG’ and *ef-faatir* ‘the-skilled.SG’, they start out prenominal in Spec-XP₁ and Spec-XP₂ and then move in a nesting fashion to Spec-XP₃ and Spec-XP₄, respectively, a process immediately followed by the movement of the head N *el-fariig* ‘the team’ to D, which explicates why the adjectives surface post-nominally (Fassi Fehri 1999, 124, 137; for a similar view, see also Cinque 2005, 2010). Since the adjectives are situated above UnitP, they probe the Unit head to value their [+UNIT] feature, rendering the adjectives singular as a result of feature sharing (see Frampton & Gutmann 2006; Pesetsky & Torrego 2007). The D head also probes down and values [+UNIT] from the closest goal, the head Unit, which ultimately results in singular agreement on the predicate after T probes D and values its features. The crucial point here is that [PL] is not probed by D or by the adjectives since [+UNIT] is the first feature accessible by those probes. If, on the contrary, plural agreement shows up on all targets, as in (42a), repeated from (7b), then NumP must presumably be projected above UnitP, as sketched in (42b).¹⁰

- (42) a. el-fariig el-xuḍur ef-faatir-iin faaz-u bi-l-mubaaraah. (JA)
 the-team the-green.PL the-skilled-PL won-PL in-the-match
 ‘The skilled green team won the match.’

⁹In essence, [PL] on Num and [+UNIT] on Unit respectively correspond to the INDEX and CONCORD features adopted in Smith’s (2017) and Landau’s (2016) analyses discussed above.

¹⁰A reviewer raised a question about the position of NumP vis-à-vis adjectives in the DP structures in (41b) and (42b), especially that Num is generally taken to be higher than the adjective (A) as in the Num > A > N order (e.g., see Cinque 2005). Fassi Fehri (1999), however, argues that there are two orderings within DP in Arabic, as shown in (ia–b) adapted from Fassi Fehri (1999, 113–114).

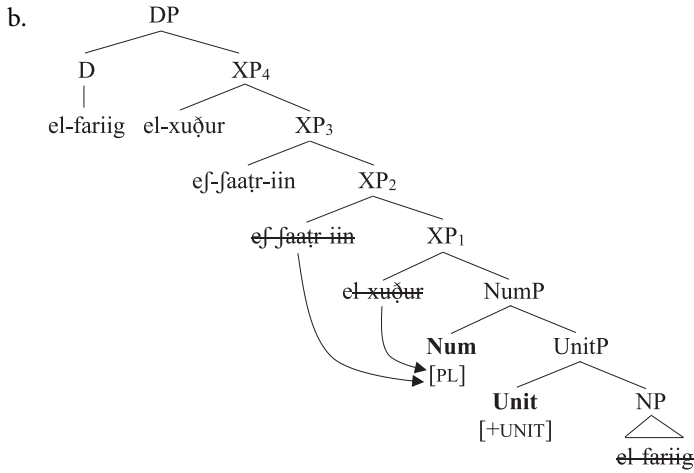
- (i) a. Dem > Num > A > N
 b. N > A > Num > Dem

According to Fassi Fehri, (ia) represents the canonical ordering of prenominal modifiers, whereas (ib) the ordering of postnominal modifiers. Additionally, from the perspective of the current approach, there is empirical evidence from JA showing the free reordering of Num and adjectives. See (ii).

- (ii) a. es-sajaaraat el-ḡadiideh el-xamseh (JA)
 the-cars the-new the-five
 ‘the five new cars’
 b. es-sajaaraat el-xamseh el-ḡadiideh
 the-cars the-five the-new
 ‘the new five cars’

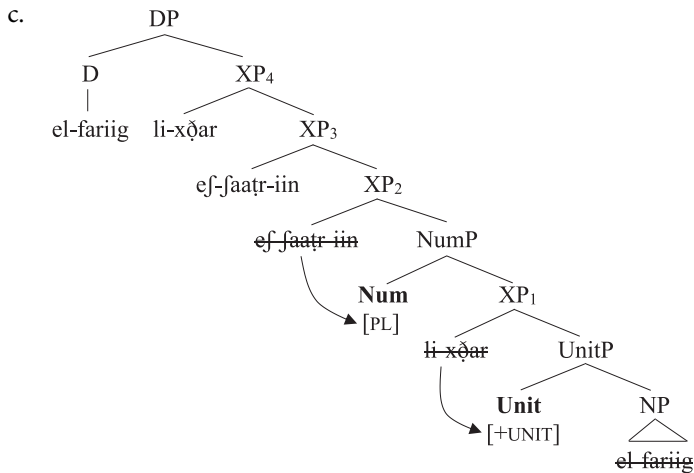
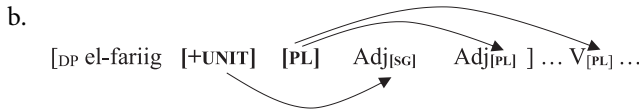
Owing to the independent movement of adjectives adopted in this study, the inner adjectives in (iia–b) are closer to the noun in both the underlying and surface strings, indicating that the quality adjective *el-ḡadiideh* ‘the new’ is merged lower than the numeral adjective *el-xamseh* ‘the five’ prior to movement in (iia), but that the reverse order holds in (iib). Observe that the numeral adjective, according to Fassi Fehri (1999), also receives focus in Standard Arabic constructions equivalent to (iib). By comparison, I conducted a small-scale test by asking five native speakers of JA about potential differences in interpretations between (iia) and (iib); all the informants reported that (iia) and (iib) are parallel in meaning with no focus distinctions. This test shows that A > Num > N and Num > A > N are both neutral orderings in JA, supporting the current approach. Moreover, Landau (2016) contends that attributive adjectives in Hebrew DPs may potentially merge in a position higher or lower than NumP, as was illustrated in (38) above. The very same idea has also been proposed for adjectives in Lebanese Arabic by Ouwayda (2014), to be discussed later. Drawing on the data in (ii), and following Fassi Fehri, Landau, and Ouwayda, I submit that adjectives might be merged above or below NumP.





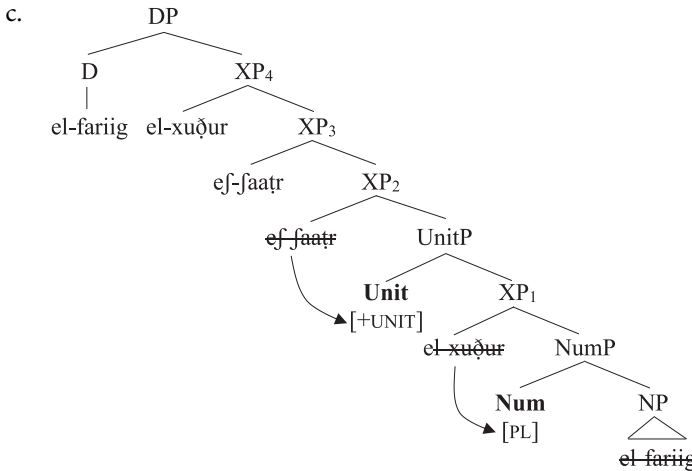
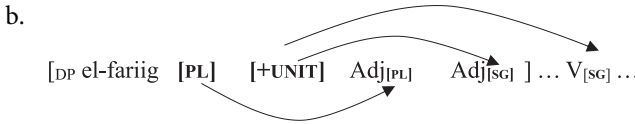
Unlike (41) above, only plural agreement is realized on the adjectives and the predicate in (42), owing to the assumption that [PL] is the first accessible feature, which blocks any valuation operation between the adjectives/D and Unit. Let us now move to more complex cases manifesting agreement mismatches. This is schematically represented in (43). ((7c) is repeated as (43a).)

- (43) a. el-fariig li-xḍar ef-jaatr-iin faaz-u bi-l-mubaaraah. (JA)
 the-team the-green.SG the-skilled-PL won-PL in-the-match
 ‘The skilled green team won the match.’



The mixed agreement in (43a–b) is assumed to result from the hierarchical order of the UnitP, NumP, and the adjectives. The adjective *li-xḍar* ‘the-green.SG’ is generated in Spec-XP₁, but *ef-faaṭr-iin* ‘the-skilled-PL’ in Spec-XP₂, before both undergo internal merge/movement to XP₄ and XP₃, respectively. Importantly, the two adjectives are assumed to value their features ([+UNIT] or [PL]) in their base positions prior to movement, as indicated by the arrows in (43c). Assuming that syntactic derivations proceed in a strict bottom-to-top fashion, *li-xḍar* ‘the-green.SG’, for instance, values its [+UNIT] feature even before Num is merged (see Landau 2016). Lastly, the verb picks out plural agreement since it is the only feature available on D. Adopting this line of reasoning, it can also be argued that the opposite mixed agreement can be achieved if the locations of UnitP and NumP are reversed, as illustrated in (44).

- (44) a. el-fariig el-xuḍur ef-faaṭir faaz bi-l-mubaaraah. (JA)
 the-team the-green.PL the-skilled.SG won.SG in-the-match
 ‘The skilled green team won the match.’



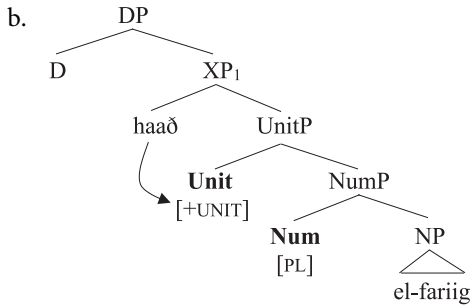
Again, the singular/plural agreement in (44) depends on where the elements are merged; *el-xuḍur* ‘the-green.PL’, for example, is directly merged above Num and thus gets plural marking, whereas *ef-faaṭr* ‘the-skilled.SG’ is merged above Unit and therefore takes singular marking, which in turn is realized on the verb after the probe-goal relation between T and D takes place.

Finally yet importantly, the current analysis also correctly accounts for the agreement behavior of demonstratives. Consider the following data. ((45a) and (46a) are repeated from (11a–b), respectively.)¹¹

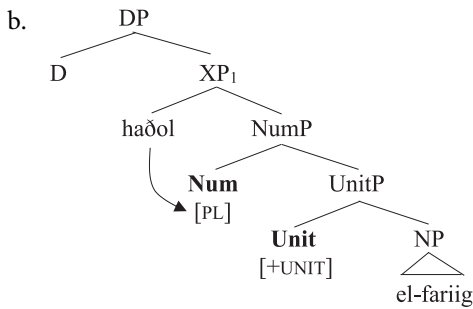
¹¹In Arabic DPs containing a demonstrative and a noun, the noun may move to D leaving the demonstrative surface post-nominally, or it may remain in situ with the demonstrative surfacing pre-nominally (see Fassi Fehri 1999).



- (45) a. haað el-fariig faaz bi-l-mubaaraah. (JA)
 this.M.SG the-team won.SG in-the-match
 ‘This team won the match.’



- (46) a. haðol el-fariig faaz-u bi-l-mubaaraah. (JA)
 those.PL the-team won-PL in-the-match
 ‘This team won the match.’



Following Shlonsky (2004, 2012), I submit that demonstratives too are merged as specifiers on a par with adjectives.¹² Importantly, the only distinction between (45b) and (46b) is presumably where UnitP is projected in relation to NumP, which in turn brings about the different patterns of agreement on the demonstrative as well as the verb in both constructions.¹³

¹²In fact, demonstratives may also surface post-nominally in Arabic due to internal merge, as exemplified in (i).

- (i) a. el-fariig haað faaz bi-l-mubaaraah. (JA)
 the-team this.M.SG won.SG in-the-match
 b. el-fariig haðol faaz-u bi-l-mubaaraah.
 the-team those.PL won-PL in-the-match
 ‘This team won the match.’

¹³A reviewer asked why merging Num in a higher position than Unit in (46b) does not, for example, result in a ‘plurality of collections’ interpretation, something like *el-firag* ‘the teams’. Although the noun *el-fariig* ‘the team’ lands in Unit and Num on its journey to D, I am assuming that it does not pick up/acquire any additional features since nouns already have inherently valued features before entering the computational component (see Danon 2011).



This analysis can also account for the (mixed) agreement patterns of constructions with DPs containing both a demonstrative and an adjective, something which a reviewer inquired about. Let us consider some examples below.

- (47) a. el-fariig ef-jaatir haað faaz bi-l-mubaaraah. (JA)
 the-team the-green.SG this.M.SG won.SG in-the-match
- b. el-fariig ef-jaatr-iin haðol faaz-u bi-l-mubaaraah.
 the-team the-skilled-PL those.PL won-PL in-the-match
- c. fariig ef-jaatir haðol faaz-u bi-l-mubaaraah.
 the-team the-green.SG those.PL won-PL in-the-match
- d. l-fariig ef-jaatr-iin haað faaz bi-l-mubaaraah.
 the-team the-skilled-PL this.M.SG won.SG in-the-match
 ‘This skilled team won the match.’

Concerning (47a), both the demonstrative and adjective are merged higher than UnitP, which in turn is higher than NumP. The relevant DP structure of (47a) is sketched below.

- (48) [_{DP} el-fariig [_{XP3} ef-jaatir [_{XP2} haað [_{XP1} ~~ef-jaatr~~ [_{UnitP} [_{NumP} [_{NP} el-fariig]]]]]]]]]

In (48), D, the demonstrative, and the adjective probe Unit, ultimately triggering singular agreement on the verb, which is followed by the movement of the adjective and noun. On the contrary, plural agreement on all targets is obtained in (47b) when NumP is projected above UnitP, as in (49).

- (49) [_{DP} el-fariig [_{XP3} ef-jaatr-iin [_{XP2} haðol [_{XP1} ~~ef-jaatrin~~ [_{NumP} [_{UnitP} [_{NP} el-fariig]]]]]]]]]

In comparison, for (47c) to yield the correct agreement patterns, the demonstrative should merge above NumP, whereas the adjective should merge below NumP but above UnitP, as represented in (50).

- (50) [_{DP} el-fariig [_{XP3} ef-jaatir [_{XP2} haðol [_{NumP} [_{XP1} ~~ef-jaatir~~ [_{UnitP} [_{NP} el-fariig]]]]]]]]]

Since NumP is higher than UnitP, the verb should also take the plural suffix. Lastly, the resulting agreement in (47d) arises because the demonstrative is located above UnitP, which is in turn higher than the adjective and NumP, as schematized below.

- (51) [_{DP} el-fariig [_{XP3} ef-jaatrin [_{XP2} haað [_{UnitP} [_{XP1} ~~ef-jaatrin~~ [_{NumP} [_{NP} el-fariig]]]]]]]]]

Crucially, the general agreement paradigm we see in (47a–d) demands that the verb show the same agreement as the demonstrative. If this does not hold, then the derivation crashes, as in (52).



- (52) a. *el-fariig ef-faatir haðol faaz bi-l-mubaaraah.
 the-team the-green.SG those.PL won.SG in-the-match
- b. *el-fariig ef-faatir-iin haað faaz-u bi-l-mubaaraah.
 the-team the-skilled-PL this.M.SG won-PL in-the-match
 Intended: ‘This skilled team won the match.’

Overall, the current approach appears to be on the right track for two reasons: first, it captures all the JA facts at hand, including agreement on various targets (demonstratives, adjectives, verbs), and second, it also rules out ill-formed structures like those given in (53a–b) repeated from (9a–b).

- (53) a. *el-fariig li-xðar ef-faatir-iin faaz bi-l-mubaaraah. (JA)
 the-team the-green.SG the-skilled-PL won.SG in-the-match
- b. *el-fariig el-xuður ef-faatir faaz-u bi-l-mubaaraah.
 the-team the-green.PL the-skilled.SG won-PL in-the-match
 Intended: ‘The skilled green team won the match.’

The unacceptability of (53a–b) stems from the fact that the outer adjective and the verb exhibit mismatched agreements. This is indeed predicted by the syntactic derivation of the DP adopted in this study. More particularly, NumP is projected higher than UnitP in (53a), making [PL] the only accessible feature by D as well as by the outer adjective. Since D bears [PL], the verb too must carry this feature through T, and since the feature of D contradicts that of V, the derivation consequently crashes at the interfaces, violating Chomsky’s (1995) Principle of Full Interpretation. Similarly, (53b) also suffers the same crashing fate, which is why it is eliminated as well. Also note that (52a) and (52b) are too ruled out on identical grounds, as they involve syntactic configurations equivalent to (53a) and (53b), respectively.

Another advantage of this approach is that the postulation of UnitP along with NumP is substantiated by the semantic interpretations of the sentences under investigation. To clarify this point, let us look at the following data.

- (54) a. el-fariig tdarrab kwajjis, (#kull laaʕib b-madiint-uh). (JA)
 the-team trained.SG well each player in-town-his
- b. el-fariig tdarrab-u kwajjis, (kull laaʕib b-madiint-uh).
 the-team trained-PL well each player in-town-his
 ‘The team trained well (each player (training separately) in his own town).’
- (55) a. el-ʕiṣaabah harb-at, (#kull waaḥad ʕa-balad). (JA)
 the-gang fled-SG each one to-country
- b. el-ʕiṣaabah harab-u, (kull waaḥad ʕa-balad).
 the-gang fled-PL each one to-country
 ‘The gang fled (each one of its members to a (different) country).’



Semantically, (54a) and (55a) allow only the collective reading, such as *all the team players collectively trained well* or *all the gang members fled together*, respectively; distributive readings like *the players each trained separately in their own town* or *the gang members each fled to a different country* are simply unavailable for such sentences, which is evidenced by the fact that both (54a) and (55a) are incompatible with the distributive adjuncts given in parentheses, as indicated above by the symbol # denoting semantic anomaly. Conversely, (54b) and (55b) are compatible with those distributive adjuncts, since they are subject to both the distributive and collective interpretations, such as *the team players (each) trained well* or *the gang members (each) fled (to a different country)*. Based on the current analysis, UnitP is merged higher than NumP within the DP in (54a) and (55a); thus, it is reasonable to assume that UnitP is not only the trigger of singular agreement on the predicate but also the source of the collective reading in such sentences, namely that *the team/gang collectively trained well/fled (as one unit)*, respectively. On the contrary, NumP is projected above UnitP in the DP structure of (54b) and (55b), and since Num is specified as [PL], ultimately rendering the predicate plural, the collective reading is optional rather than obligatory in such constructions. This means that from the semantic perspective NumP and UnitP are meaningful in the sense that the former has a pluralizing effect but the latter a unitizing effect, which may yield differently nuanced interpretations, as we also see in sentences like (56a–b) below.

- (56) a. el-ʕiʕaabah el-ʔurdinijj-iin txabb-u. (JA)
 the-gang the-Jordanian-PL hid-PL
- b. el-ʕiʕaabah el-ʔurdinijj-eh txabb-at.
 the-gang the-Jordanian-SG hid-SG
 ‘The Jordanian gang hid (itself/themselves).’

The pluralizing effect of NumP in (56a) induces either the distributive or collective interpretation. That is, according to the distributive reading, each of the gang members is Jordanian and each one of them hid himself separately from others. If, on the other hand, the collective reading holds, then it must be the case that the gang as a single entity is Jordanian or affiliates itself with Jordan (though a few or some of its members may be from other countries) and that all its members hid together in one place. The unitizing effect of UnitP in (56b), in comparison, yields only the collective reading (just mentioned above), so (56b) is incompatible with the distributive reading (also described above). Once again, such subtle distinctions of the derived meanings, on this view, are achieved by the pluralizing and unitizing semantic effects of NumP and UnitP, respectively. Notably, the above nuanced meanings arise because of the complex nature of the collective noun *el-ʕiʕaabah* ‘the gang’ which does not only represent a collection of members but also a single entity (see [de Vries 2021](#)), with the meanings of plurality and single entity syntactically encoded by NumP and UnitP respectively under the current approach.

The notion that Unit is viewed as the head of its own maximal projection on a par with Num ([Fassi Fehri 2018](#)) gains further support from the existence of nominal collective morphemes in languages like Sierra Popoluca and Yana ([Corbett 2004](#)). Sierra Popoluca (a Mixe-Zoquean language spoken in Mexico), for example, contains a separate collective suffix *áhoh*, which refers to the entities denoted by the nouns to which it is attached as one unit, as shown in (57) ([Elson 1960](#), 219, cited in [Corbett 2004](#), 118).



- (57) a. tʌg-áɲhoh ‘many houses together, a village’ (Sierra Popoluca)
 b. ca-áɲhoh ‘many rocks, a rocky place’

By the same token, Yana (a language which was spoken by the Yana people in the north central region of California) also has a collective morpheme *-wi* that may even cooccur with number marking, as demonstrated below (Sapir 1917, 22–23, Sapir & Swadesh 1960, 173, cited in Corbett 2004, 118).

- (58) a. ʔi- ‘tree, stick’ → ’i-wi ‘firewood, wood’ (Yana)
 b. dal ‘hand’ → dal-uu-wi ‘two hands’
 c. lal ‘foot’ → lal-uu-wi ‘two feet’

Significantly, both the collective *-wi* and the number marker *-uu-* are affixes attached to the nouns in (58b–c), which is clear evidence that such “collectives are a separate category, since they can cooccur with number markers” (Corbett 2004, 118).¹⁴ The fact that the collective suffixes in Sierra Popoluca and Yana are attached to the noun, as in (57)–(58) above, suggests that these collectives should perhaps be treated as functional heads (e.g., Unit), just like Num, since they express a “unit/collective” idea. This hypothesis, if correct, lends further support to the current assumption that in DPs involving collective nouns in JA the head Unit is syntactically present with semantic specifications but phonetically null. This appears to be a reasonable conclusion, especially that the “unit” concept is an essential component of the meaning of such collective nouns, as is also the case with the plural number.

As far as adnominals are concerned, the claim that their Merge position inside the DP determines their agreement status, as proposed for (41)–(44) above, is also corroborated by the behavior of adjectives in Finnish and Lebanese Arabic. To start with, attributive adjectives in Finnish, according to Brattico (2010, 2011), exhibit different agreements as a result of merging below or above the numeral. Consider (59), from Brattico (2010, 60–61).

¹⁴A reviewer asked if the collective and number suffixes are freely reordered with the respect to one another, which, if possible, should provide further evidence for the current analysis. Unfortunately, the answer for this inquiry will perhaps remain a mystery since Yana is a dead language. Moreover, Corbett (2004) has not addressed this issue either. Nonetheless, empirical evidence from JA shows that it is possible for UnitP and NumP to be freely reordered. The free reordering of such functional projections also gains further evidence from the hierarchical positions of tense phrase (TP) and negation phrase (NegP) in Arabic. Aoun, Benmamoun & Choueiri (2010) and Alqassas (2021) have convincingly showed that NegP may be projected higher or lower than TP in Arabic. This is demonstrated by the following data from Alqassas (2021, 29). (See also Aoun et al. (2010, 99, 101).)

- (i) a. **kunt** **miʃ** zaʕlaan. (JA)
 COP.PAST.ISG NEG upset
 b. **maa** **Kunt** zaʕlaan.
 NEG COP.PAST.ISG upset
 ‘I was not upset.’

Given the standard assumption that in Arabic grammar past copulas like *kunt* in (i) overtly adjoin to T (Fassi Fehri 1993, 2012; Baker 2003; Benmamoun 2008; Aoun et al. 2010), we can clearly see how the projections TP and NegP are freely reordered with respect to one another in (ia–b).



- (59) a. ne kaksi pilaantunut-ta leipä-ä (Finnish)
 those.PL two.SG rotten-PAR.SG bread-SG
- b. ne pilaantune-et kaksi leipä-ä
 those.PL rotten-ACC.PL two.SG bread-SG
 ‘those two rotten breads’

Crucially, adjectives occurring below the numeral show singular agreement, as in (59a), but those above the numeral bear plural agreement, as in (59b). Once the numeral is merged, every adnominal above it, including demonstratives, must take plural agreement. Brattico has not examined the alternation of agreement patterns in DPs like (59) per se as he has primarily focused on the syntax of Case assignment in such Finnish structures, but his data suggest that agreement on adnominals is an outcome of the alternating Merge sites within the DP. That is, if we consider that UnitP immediately dominates the NP in (59), then the adjective *pilaantunut-ta* ‘rotten-PAR.SG’ in (59a) above UnitP has no other option but to agree with Unit and carry singular marking; *pilaantune-et* ‘rotten-ACC.PL’ in (59b), in comparison, values its [PL] feature through the head Num located below the adjective and above UnitP.

Analogously, attributive adjectives in DPs containing transdecimal numerals in Lebanese Arabic may receive singular or plural agreement, depending on their Merge site, as exemplified below (adapted from [Ouwayda 2014](#), 152–153).

- (60) a. tleetiin walad mnazzam (Lebanese Arabic)
 thirty child.SG organized.SG
 ‘thirty organized children’
- b. [_D tleetiin walad [mnazzam [_{NumP} [~~walad mnazzam~~ ...
- (61) a. tleetiin walad mnazzm-iin (Lebanese Arabic)
 thirty child.SG organized-PL
 ‘thirty organized children’
- b. [_D tleetiin walad [mnazzm-iin [_{NumP} [~~walad~~ ...

In cases like (60), the adjective *mnazzam* ‘organized.SG’, as reported by [Ouwayda](#), is merged below Num before movement, and hence the singular form, but when the very same adjective is merged above Num after the noun undergoes movement to D, it gets plural marking as in *mnazzm-iin* ‘organized-PL’ in (61).¹⁵ Although such DP structures, according to [Ouwayda](#), involve no UnitP, which can be ascribed to the fact that *walad* ‘boy’ is not a collective noun, the structure in (60) gets the distributive interpretation, while the one in (61) the collective interpretation. What is crucial to us here is that the adjective can merge below or above Num.

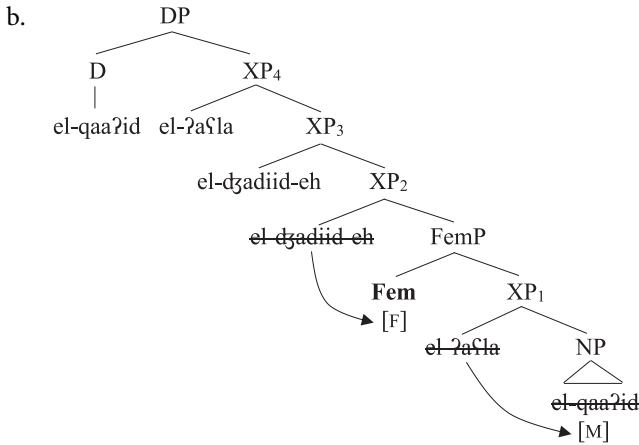
Finally, the notion that agreement-triggering heads can also merge in different positions inside the DP, as previously argued for Num and Unit, is substantiated by gender agreement in Russian. In the next section below, I will discuss [Pesetsky’s \(2014\)](#) proposal for Russian, and then extend it to JA.

¹⁵Note that on [Ouwayda’s \(2014, 158\)](#) view the transdecimal numeral in (60)–(61), unlike numbers 3 to 10, is not under Num but rather under D to which N moves.



Fem in (63b) stands for the feminizing head instead of the Cyrillic feminine marker (ж) used by Pesetsky, and FemP for Feminization Phrase. Notably, the adjective and D both probe Fem and value the feminization feature, after which T values its feature through D, and hence the feminine agreement on the verb. Needless to say that the noun undergoes internal merge, rendering the adjective post-nominal.¹⁶ If we compare (63) to (64), we find that Fem is merged higher in the latter structure, giving rise to a more complex agreement pattern. ((64a) is repeated from (23b).)

- (64) a. el-qaaʔid el-ʔaʕla el-ɖadiid-eh traffaʕ-at. (JA)
 the-commander.M the-high.M the-new-F got.promoted-F
 ‘The new (female) high commander got promoted.’



Considering that the masculine feature [M] is registered on the military rank nouns at hand, as assumed for Russian profession nouns (Pesetsky 2014), *el-ʔaʕla* ‘the-high.M’ in (64) agrees with *el-qaaʔid* ‘the-commander.M’ since [M] is the only feature in its c-command domain. Contrastingly, the outer adjective *el-ɖadiid-eh* ‘the-new-F’ takes feminine agreement because it is merged above the head Fem. Regarding the predicate, it receives feminine marking as well but through D. The above mechanism also applies to DPs involving demonstratives. If FemP is projected in the syntactic derivation, then the demonstrative above it must also carry a feminine marker; otherwise, only masculine agreement is available. This is schematized below.

- (65) a. [DP [XP1 haaj [FemP [NP el-mulaazim]]]] bithibb ʕaal-ha. (JA)
 this.F.SG the-lieutenant.M like.F self-her
 ‘This (female) lieutenant likes herself.’

¹⁶A reviewer asked why the N head in (63b) does not pick up the feminization feature when moving to D through Fem. I am assuming here, as I mentioned earlier, that nouns, unlike other heads (e.g., verbs), enter the derivation already with inherently valued features like number and gender, and thus do not acquire any additional features in the course of the derivation (see Danon 2011).



1005), obtain the optimal outcome of hybrid agreement by postulating NumP (Landau 2016), to the exclusion of UnitP.

- (67) a. ha-beʔalim ha-pratij-im ha-axaron jel ha-tmuna haja
 the-owner the-private-PL the-last.SG of the-painting was.3SG
 ha-psixoʔanalitikaʔi Jacques Lacan. (Hebrew)
 the-psychoanalyst Jacques Lacan
- b. *ha-beʔalim ha-prati ha-axron-im jel ha-tmuna haja/haju
 the-owner the-private.SG the-last-PL of the-painting was.3SG/PL
 ha-psixoʔanalitikaʔi Jacques Lacan.
 the-psychoanalyst Jacques Lacan
 ‘The last private owner of the painting was the psychoanalyst Jacques Lacan.’

In other words, Hebrew selects NumP but no UnitP from the inventory into its lexicon. JA, in contrast, picks both NumP and UnitP. Put differently, the availability of UnitP in JA or its lack thereof in English and Hebrew is responsible for producing optimal converging structures in these languages. This means that the three analyses presented above are not at odds with, but rather complement, each other in the sense that each of them involves efficient computational modeling necessary for each language, which lies at the heart of the minimalist enterprise.

As far as the mixed gender agreement is concerned, I am assuming, following Pesetsky (2014), that the FemP is optionally projected only in certain syntactic locations. For instance, merging the Fem higher than the noun and lower than the demonstrative with both the demonstrative and the verb displaying matching agreement as in (68a), repeated from (65a), is possible.

- (68) [DP [XP₁ haaj [_{FemP} [NP el-mulaazim]]]] bithibb haal-ha. (JA)
 this.F.SG the-lieutenant.M like.F self-her
 ‘This (female) lieutenant likes herself.’

Nevertheless, a masculine demonstrative with a feminine verb, as in (69), is rather ruled out because FemP cannot be merged so high in the DP that it precedes demonstratives.

- (69) *[DP [_{FemP} [XP₁ haaʔ [NP el-mulaazim]]]] bithibb haal-ha. (JA)
 this.M.SG the-lieutenant.M like.F self-her
 ‘This (female) lieutenant likes herself.’

Additionally, the structure in (69) disrespects Grimshaw’s (1993, 2) Minimal Projection presented below:

Min-Proj [Minimal Projection] requires that a functional projection make a contribution to the functional representation of the extended projection that it is part of; it is a relative of the principle of “Full Interpretation”. It is violated by empty projections, by projections which contain only functionally unspecified material and by projections which contain redundant functional information.

This means that any functional projection less or more than what is absolutely necessary to arrive at the optimal linguistic expression, as is the case with FemP in (69), violates the Minimal Projection, causing the derivation to crash.



The above discussion points to the idea that languages are subject to parametric variation with respect to the availability of UnitP or FemP within DP. Such reasoning is fundamentally similar to other minimalist principles such as the concept of economy. In more concrete terms, the Last Resort principle (Chomsky 1993, 32), for instance, necessitates that “a step in a derivation is legitimate only if it is necessary for convergence—had that step not been taken, the derivation would not have converged”. This principle is responsible for the movement mechanisms in natural languages. For example, some languages (e.g., English, Arabic) require *wh*-movement in interrogatives, and hence Last Resort applies, but in other languages (e.g., Chinese, Japanese) *wh*-in-situ forms are more economical than movement of *wh*-words, and therefore Last Resort does not apply at all.

6. CONCLUSION

This study has explored the hybrid agreement phenomena triggered by collective and military rank nouns in JA, both in the phrasal and clausal domains. Drawing on Fassi Fehri (2018), I have argued that in DPs with collective nouns Num and Unit are heads of two distinct functional projections, and each of which may be merged either higher or lower than the other, resulting in different agreement paradigms inside and outside DP. The same line of reasoning also applies to Fem in constructions containing military rank nouns, except that the merger of Fem is optional (see Pesetsky 2014). Strictly speaking, agreement on adnominals inside the DP is presumed to take place once elements are merged, even before the merger of other higher heads, in the sense of Landau (2016). This way, each adnominal (e.g., adjective, demonstrative) must agree solely with the closest head underneath by means of feature sharing. Crucially, once the last agreement-triggering head is merged, it produces an irreversible effect in that all elements above it must follow the very same agreement pattern, which is supported by empirical data from JA as well as from other languages like Hebrew, Finnish, and Russian. Under this view, agreement is purely an outcome of morphosyntactic derivations built into the DP structure. This of course contrasts with any descriptive lexicalist approaches claiming that the nouns under study are lexically underspecified for number/gender, and hence the agreement mismatches. In fact, any lexicalist claim cannot at all explain why hybrid agreement follows certain directions rather than others.

ACKNOWLEDGMENTS

I am profoundly thankful to the two anonymous reviewers and the editors of Acta Linguistica Academica for their insightful comments, which significantly improved this paper.

REFERENCES

- Alqassas, Ahmad. 2021. A unified theory of polarity sensitivity: Comparative syntax of Arabic. Oxford: Oxford University Press.
- Aoun, Joseph E., Elabbas Benmamoun and Lina Choueiri. 2010. The syntax of Arabic. Cambridge: Cambridge University Press.



- Aoun, Joseph E., Elabbas Benmamoun and Dominique Sportiche. 1994. Agreement, word order, and conjunction in some varieties of Arabic. *Linguistic Inquiry* 25. 195–220.
- Baker, Mark C. 2003. *Lexical categories: Verbs, nouns, and adjectives*. Cambridge: Cambridge University Press.
- Benmamoun, Elabbas. 2000. *The feature structure of functional categories: A comparative study of Arabic dialects*. Oxford: Oxford University Press.
- Benmamoun, Elabbas. 2008. Clause structure and the syntax of verbless sentences. In R. Freidin, C. P. Otero and M. Luisa Zubizarreta (eds.) *Foundational issues in linguistic theory: Essays in honor of Jean-Roger Vergnaud*. Cambridge, MA: The MIT Press. 105–131.
- Borer, Hagit and Sarah Ouwayda. 2010. Men and their apples: Dividing plural and agreement plural. Paper presented at GLOW in Asia VIII, Beijing, August 12–16, 2010. 1–19.
- Bošković, Željko. 2014. Phases beyond clauses. In L. Schürcks, A. Giannakidou and U. Etxeberria (eds.) *The nominal structure in Slavic and beyond*. Berlin: De Gruyter Mouton. 75–128.
- Brattico, Pauli. 2010. One-part and two-part models of nominal case: Evidence from case distribution. *Journal of Linguistics* 46. 47–81.
- Brattico, Pauli. 2011. Case assignment, case concord, and the quantificational case construction. *Lingua* 121. 1042–1066.
- Chomsky, Noam. 1993. A minimalist program for linguistic theory. In K. Hale and S. Jay Keyser (eds.) *The view from building 20: Essays in linguistics in honor of Sylvain Bromberger*. Cambridge, MA: The MIT Press. 1–52.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: The MIT Press.
- Cinque, Guglielmo. 2005. Deriving Greenberg's universal 20 and its exceptions. *Linguistic Inquiry* 36(3). 315–332.
- Cinque, Guglielmo. 2010. *The syntax of adjectives: A comparative study*. Cambridge, MA: The MIT Press.
- Coppock, Elizabeth and Stephen Wechsler. 2012. The objective conjugation in Hungarian: Agreement without phi-features. *Natural Language & Linguistic Theory* 30(3). 699–740.
- Corbett, Greville G. 2004. *Number*. Cambridge: Cambridge University Press.
- Corbett, Greville G. 2006. *Agreement*. Cambridge: Cambridge University Press.
- Danon, Gabi. 2011. Agreement and DP-internal feature distribution. *Syntax* 14(4). 297–317.
- de Vries, Hanna. 2021. Collective nouns. In P. C. Hofherr and J. Doetjes (eds.) *The Oxford handbook of grammatical number*. Oxford: Oxford University Press.
- Delfitto, Denis and Jan Schroter. 1991. Bare plurals and the number affix in DP. *Probus* 3. 155–185.
- Elbourne, Paul. 1999. Some correlations between semantic plurality and quantifier scope. In P. Tamanji, M. Hirotani and N. Hall (eds.) *Proceedings of North East Linguistics Society 29*. Amherst, MA: Graduate Linguistic Student Association. 81–92.
- Elson, Ben. 1960. Sierra Popoluca morphology. *International Journal of American Linguistics* 26. 206–223.
- Erwin, Wallace M. 1963. *A short reference grammar of Iraqi Arabic*. Washington, D.C.: Georgetown University Press.
- Fassi Fehri, Abdelkader. 1993. *Issues in the structure of Arabic clauses and words*. Dordrecht: Kluwer Academic Publishers.
- Fassi Fehri, Abdelkader. 1999. Arabic modifying adjectives and DP structures. *Studia Linguistica* 53(2). 105–154.
- Fassi Fehri, Abdelkader. 2012. *Key features and parameters in Arabic grammar*. Amsterdam: John Benjamins.



- Fassi Fehri, Abdelkader. 2018. Constructing feminine to mean gender, number, numeral, and quantifier extensions in Arabic. Lanham, MD: Lexington Books.
- Frampton, John and Sam Gutmann. 2006. How sentences grow in the mind: Agreement and selection in efficient minimalist syntax. In C. Boeckx (ed.) *Agreement systems*. Amsterdam: John Benjamins. 121–157.
- Grimshaw, Jane. 1993. Minimal projection, heads, and optimality. Technical Report #4 of the Rutgers University Center for Cognitive Science, Piscataway, NJ.
- Harbert, Wayne and Maher Bahloul. 2002. Postverbal subjects in Arabic and the theory of agreement. In J. Ouhalla and U. Shlonsky (eds.) *Themes in Arabic and Hebrew Syntax*. Dordrecht: Kluwer. 45–70.
- Harrel, Richard. 1962. *A short reference grammar of Moroccan Arabic*. Washington, D.C.: Georgetown University Press.
- Hristov, Bozhil. 2013. Defacing agreement. In M. Butt and T. H. King (eds.) *LFG 13*. Stanford, CA: CSLI Publications. 335–355.
- Huddleston, Rodney and Geoffrey K. Pullum. 2002. *The Cambridge grammar of the English language*. Cambridge: Cambridge University Press.
- Jaradat, Abdelazeez and Marwan Jarrah. To appear. The syntax of plurals of collective and mass nouns: Views from Jordanian Arabic. *Poznan Studies in Contemporary Linguistics*.
- Jarrah, Marwan. 2019. Record your agree: A case study of the Arabic complementizer ?inn. *Journal of Linguistics* 55. 83–122.
- Jarrah, Marwan. 2020. Complementizer agreement and the T^0 - Φ parameter in Jordanian Arabic. *Studia Linguistica* 74(1). 139–164.
- Koopman, Hilda. 1999. The internal and external distribution of pronominal DPs. In K. Johnson and I. Roberts (eds.) *Beyond principles and parameters*. Dordrecht: Kluwer Academic Publishers. 91–132.
- Landau, Idan. 2016. DP-internal semantic agreement: A configurational analysis. *Natural Language & Linguistic Theory* 34. 975–1020.
- LeTourneau, Mark S. 1995. Internal and external agreement in quantified construct states. In M. Eid (ed.) *Perspectives on Arabic Linguistics VII*. Amsterdam: John Benjamins. 29–57.
- Levin, Magnus. 2001. *Agreement with collective nouns in English (Lund Studies in English)*. Lund: Lund University Press.
- Mathieu, Éric. 2013. On the plural of the singulative. *McGill Working Papers in Linguistics* 23(1). 1–12.
- Mohammad, Mohammad. 2000. *Word order, agreement and pronominalization in Standard and Palestinian Arabic*. Amsterdam: John Benjamins.
- Munn, Alan and Cristina Schmitt. 2005. Number and indefinites. *Lingua* 115. 821–855.
- Ojeda, Almerindo E. 1992. The semantics of number in Arabic. *Semantics and Linguistic Theory* 2. 303–326.
- Ouhalla, Jamal. 1991. *Functional categories and parametric variation*. London: Routledge.
- Ouhalla, Jamal. 2005. Agreement features, agreement and antiagreement. *Natural Language & Linguistic Theory* 23. 655–686.
- Ouwayda, Sarah. 2014. *Where number lies: Plural marking, numerals, and the collective-distributive distinction*. Doctoral dissertation. University of Southern California, Los Angeles, CA.
- Pesetsky, David. 2014. *Russian case morphology and the syntactic categories*. Cambridge, MA: The MIT Press.
- Pesetsky, David and Esther Torrego. 2007. The syntax of valuation and the interpretability of features. In S. Karimi, V. Samiiian and W. K. Wilkins (eds.) *Clausal and Phrasal Architecture: Syntactic derivation and interpretation*. Amsterdam: John Benjamins. 262–294.



- Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech and Svartvik Svartvik. 1985. A comprehensive grammar of the English language. London: Longman.
- Ritter, Elizabeth. 1987. NSO noun phrases in Modern Hebrew. In J. McDonough and B. Plunkett (eds.) *Proceedings of North East Linguistics Society 17*. Amherst, MA: Graduate Student Linguistics Association, University of Massachusetts. 521–537.
- Ritter, Elizabeth. 1988. A head-movement approach to construct-state noun phrases. *Linguistics* 26(6). 909–930.
- Ritter, Elizabeth. 1991. Two functional categories in noun phrases: Evidence from Modern Hebrew. In S. Rothstein (ed.) *Syntax and semantics 25: Perspectives on phrase structure*. New York, NY: Academic Press. 37–62.
- Ritter, Elizabeth. 1995. On the syntactic category of pronouns and agreement. *Natural Language & Linguistic Theory* 13(3). 405–443.
- Sapir, Edward. 1917. The position of Yana in the Hokan stock (University of California Publications in American Archaeology and Ethnology 13.1). Berkeley, CA: University of California.
- Sapir, Edward and Morris Swadesh. 1960. Yana dictionary (University of California Publications in Linguistics 22). Berkeley, CA: University of California Press.
- Shlonsky, Ur. 2004. The form of Semitic noun phrases. *Lingua* 114: 1465–1526.
- Shlonsky, Ur. 2012. On some properties of nominals in Hebrew and Arabic, the construct state and the mechanisms of AGREE and MOVE. *Italian Journal of Linguistics* 24(2). 267–286.
- Siloni, Tal. 1991. Noun raising and the structure of noun phrases. In J. Bobaljik and T. Bures (eds.) *MIT Working Papers in Linguistics 14*. Cambridge, MA: The MIT Press. 255–270.
- Siloni, Tal. 1996. Hebrew noun phrases: Generalized noun raising. In A. Belletti and L. Rizzi (eds.) *Parameters and functional heads: Essays in comparative syntax*. Oxford: Oxford University Press. 239–267.
- Siloni, Tal. 1997. *Noun phrases and nominalizations: The syntax of DPs*. Dordrecht: Kluwer Academic Publishers.
- Smith, Peter W. 2017. The syntax of semantic agreement in English. *Journal of Linguistics* 53. 823–863.
- Soltan, Usama. 2006. Standard Arabic subject-verb agreement asymmetry revisited in an Agree-based minimalist syntax. In C. Boeckx (ed.) *Agreement systems*. Amsterdam: John Benjamins. 239–265.
- Sudo, Yasutada and Giorgos Spathas. 2020. Gender and interpretation in Greek: Comments on Merchant (2014). *Glossa: A Journal of General Linguistics* 5(1). 129. 1–42.
- Wechsler, Stephen and Larisa Zlatić. 2000. A theory of agreement and its application to Serbo-Croatian. *Language* 76(4). 799–832.
- Wechsler, Stephen and Larisa Zlatić. 2003. *The many faces of agreement*. Stanford, CA: CSLI Publications.

