

Case, agreement, and movement interactions

Morphological case, ϕ -agreement, and overt movement interactions in
Syntax

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Abstract: Following Alshamari (2017) and Jarrah (2019), this paper offers evidence in favor of systematic interactions of morphological case, ϕ -agreement and overt movement in the Arabic grammar. These three aspects of grammar are proposed to record syntactic dependencies at the interface. This recording is found to be firstly achieved by morphological case (assigned by the probe on the goal; cf. Chomsky 2000; 2001), if not, by ϕ -inflections (of the goal on the probe) or, if not, by overt movement of the goal to (Spec of XP headed by) the probe. In so doing, this paper contributes to the ongoing research on the role of the interface conditions on narrow syntax, adding credence to Chomsky's (2005) proposal that "language is an optimal solution to the interface conditions that it must satisfy" (Giorgi 2011: 392).

Keywords

Agree – case – interface conditions - overt movement.

1. Introduction

Explorations into the interactions of morphological case, ϕ -agreement and overt movement are an important agenda in current generative work (see, e.g., Bobaljik 2008, Baker 2013, Ludovico et al., 2015, Coon & Parker 2019). The significance of these explorations lies, among other things, in their theoretical implications for the position of these three aspects in the overall architecture of the grammar (narrow syntax vs. post-spellout, etc.) as well as the computational workings of C_{HL} [The Computation System of Human Language] (Sigurðsson 2017). These explorations also offer insights into the semantic interpretation of syntactic dependencies at the interface (Holmberg & Hróarsdóttir 2003, Miyagawa 2009, Jarrah 2019).

On the other hand, one look at the related literature is enough to show that several diverging proposals relating to the interactions of these three aspects of grammar have been made. One obvious problem that encounters a uniform account of these interactions is the fact the each language may treat these interactions uniquely, and hence no consensual views regarding these interactions would be drawn when cross-linguistic variation is taken into consideration. Nonetheless, investigating the interactions of these aspects in single grammars is still a promising endeavor as differences between languages in this regard might be reduced to independent factors whose morphosyntactic effects would mask the true

nature of the interactions of these three aspects. Additionally, despite the fact that it is not easy to categorize the proposed accounts of the interactions of these three aspects into homogenous groups (as each account has its own objectives and methodologies), we are still capable of grouping these accounts into two broad categories, especially when irrelevant details are skipped. In the first group, researchers propose that there exists no relation between morphological case and ϕ -agreement or between ϕ -agreement and movement (see Carstens 2001, Tanaka 2005, Al-Balushi 2011). Under this view, ϕ -agreement, for instance, takes place irrespective of the presence or absence of morphological case and movement. With this view in place, principles of one aspect are deemed irrelevant to the occurrence of other aspects (i.e., one aspect does not license another). Although this view looks simplistic, we claim that it obscures important aspects of the syntax of these aspects and their collective role in natural languages. Emerging evidence coming from several languages strongly indicates that morphological case, ϕ -agreement, and movement may feed or even bleed each other (see Béjar 2003, Markman 2005).

This discussion gives rise to the second group in which researchers propose that there exists some connection between morphological case, ϕ -agreement or overt movement. This connection varies cross-linguistically and may subject be subject to language-internal or universal principles. A

case in point is Baker (2013) who mentions that in some languages subject ϕ -agreement and object agreement are found to be sensitive to the case morphology of the noun phrase (dative vs. accusative, ergative vs. nominative). Agreement never takes place unless the relevant noun bears an appropriate case. Cross-linguistic observations that morphological case is strongly related to ϕ -agreement which in turn is systematically interacted with movement are in fact numerous (see Polinsky and Potsdam 2001, Baker 2012). However, there is still no clear patterning of the occurrence of these three aspects as existing views are still inconclusive and even, in some cases, challenged by language-internal data.

In this paper, we provide evidence from Arabic dialects that morphological case, ϕ -agreement, and movement occur due to a strict condition on their presence in the grammar. This condition is proposed to regulate their systematic occurrence and interaction which is set to secure interface (PF) records of the syntactic dependencies that are formed in the narrow syntax. ϕ -inflections are found when morphological case is unable to take place, while movement is present when ϕ -agreement is no longer an option (because the probe bears no *u(ninterpretable)* ϕ -features or fails to secure the required record with all of its goals). This restriction on the occurrence of these aspects with each other is taken as evidence that there does exist a strong interaction and hence a connection between these three aspects in the Arabic grammar. This is by itself significant as it brings

empirical evidence that syntactic dependencies should be recorded at PF, hence providing supporting arguments in favor of the connection between narrow syntax and interface levels. This connection is obtained through a systemic fashion that underlies the interaction between morphological case, ϕ -agreement, and movement in syntax.

This paper is organized as follows. In section 2, we provide the main pieces of evidence in favour of the interaction between case and ϕ -agreement as reported in Jarrah (2019) and interactions between ϕ -agreement and overt movement as reported in Alshamari (2017). Section 3 discusses the importance of these interactions which are shown to be direct effects of the so-called Agree Chain Record (i.e., an Agree chain must be recorded at PF). In section 4, we show how this view accounts for lack of A-movement in Standard Arabic, doing away with the parametric view proposed in Soltan (2007). In section 5, we defend our view against the derivation of SVO clauses in Arabic dialects that could pose a challenge towards ACR effects. Section 6 concludes the paper.

2. Morphological case, ϕ -agreement, and movement interactions

In this section, we discuss morphological case, ϕ -agreement and movement interactions in Arabic dialects as reported in Alshamari (2017) and Jarrah (2019).

2.1. Case and ϕ -agreement interactions

Jarrah (2019) investigates morphological case and ϕ -agreement interactions in three Arabic dialects (i.e. Modern Standard Arabic, Jordanian Arabic, and Lebanese Arabic) within their complementizer system. Emphasis is placed on complementizer agreement and subject-verb agreement asymmetries. One main generalization drawn in this paper is that when the probe (i.e., C^0) assigns morphological case to its goal (i.e. the subject or the object, depending essentially on their closeness to C^0), the probe may not bear a ϕ -affix that expresses the ϕ -content of the goal. Jarrah (2019) interprets this as evidence that morphological case on the goal (assigned by the probe) blocks overt ϕ -agreement (of the goal) on the probe. This interpretation accounts for the fact that the complementizer *ʔinna/ʔanna* in Modern Standard Arabic (MSA) does not bear a ϕ -affix that expresses the ϕ -content of the goal as long as it assigns its goal morphological case. Consider (1) which is an example from MSA.

(1) ʔinna(*hu)	ʔal-walad-a	qaraʔa
COMP-3SG.M	DEF-boy-ACC	read.PAST.3SG.M
ʔad-dars-a		
DEF-lesson-ACC		
'The boy read the lesson.'		(Jarrah 2019: 110)

When the goal cannot receive a morphological case because it is a *pro* (as in (2a), which is another example of MSA) or because the given language does not obtain morphological case such as Arabic dialects (consider (2b), which is an example from Jordanian Arabic), C^0 *ʔinn* should bear a ϕ -affix that expresses the ϕ -content of the goal.

(2) a. ʔinna*(-hu)	qaraʔa	ʔal-walad-u
COMP-3SG.M <i>pro</i>	read.PAST.3SG.M	DEF-boy-NOM
ʔad-dars-a		
DEF-lesson-ACC		
'The boy read the lesson.'		(Jarrah 2019: 88)

b. ʔiʃ-fab	ʔiʃtaraf	ʔinn-hum
DEF-young man	confess.PAST.3SG.M	COMP-3PL.M
ʔiχwat-uh	ðʕarab-u	ʔil-walad
brothers-his	hit.PAST-3PL.M	DEF-boy
'The young man confessed that his brothers hit the boy.'		(Jarrah 2019: 89)

Under this proposal, *ʔinn* agrees with a *pro* that is situated in Spec,TP in (2a). Because the *pro* does not have a phonological form and hence cannot

bear morphological case, *ʔinn* bears a ϕ -affix (*-hu*) that shows the ϕ -content of the pro.¹ This affix is taken as a morphological outcome of the Agree relation between *ʔinn* and the pro. In (2b), *ʔinn* agreeing with the preverbal subject bears a ϕ -affix that displays the ϕ -content of its goal. *ʔinn* bears this affix as Jordanian Arabic does not make use of the morphological case (to record syntactic dependencies). The Agree relation between *ʔinn* and its goal is hence morphologically realized (i.e. recorded) through a ϕ -affix of the goal on the probe when morphological case is no longer an option.

The complementary distribution between morphological case and ϕ -agreement in CP domains of the Arabic dialects investigated is ruled by a postulated interface condition, namely Agree Chain Record (ACR) mentioned in (3):

(3) Agree Chain Record: An Agree chain must be recorded at PF.

(Jarrah 2019: 111)

Assuming ACR, syntactic dependencies should have a morphological realization that can be secured in Arabic through overt case markings on the goal or, if not, a ϕ -affix on the probe.² This interaction of morphological case and ϕ -agreement implies that these two aspects of grammar are used for the same reason which is to morphologically realize

Agree relations between probes and goals in the interface in Arabic grammar. This realization helps semantic interpretation and information structure make use of dependency relations beyond narrow syntax (Miyagawa 2009).

The question that arises here is whether movement can be used to record syntactic dependencies or not. The answer to this question can be found in the data discussed in Alshamari (2017) who provides illuminating facts that can be taken as evidence that movement, as a last resort, is used to record dependencies at the interface.³

2.2. ϕ -agreement and movement interactions

Alshamari (2017) offers evidence from the North Hail dialect of Najdi Arabic that there are two types of topic particles (i.e., expressions that mark the element serving as a topic in the sentence): agreeing particles and non-agreeing particles. Agreeing particles like *ƙedi*, *tara*, and *ʔaktin* can bear a ϕ -affix that expresses the ϕ -content of the element that functions as the topic of the sentence as examples (4a-c) show:⁴

(4) a. ƙedi-hin	l-banaat	ʃaf-an
PRT-3P.F	DEF-girls	see.PST-PL.F
as-sayarah	bi-a-sa:hah	
DEF-car	in-DEF-yard	

‘The girls, they saw the car in the yard.’

(Alshamari 2017: 89)

b. ʔaktin-h	omar	ʃaf	l-ħurmah.
PRT-3SM	Omar	see.PST.3S.M	DEF-woman

‘Omar, he saw the woman.’

(Alshamari 2017: 28)

c. tara-ah	ʃaf-ah	l-ħurmah
PRT-3SF	see.PST.3S.M-her	DEF-woman
Omar.		
Omar		

‘The woman, Omar saw her.’

(Alshamari 2017: 146)

According to Alshamari (2017), the preverbal element *lbanaat* ‘the girls’ and *Omar* ‘Omar’ in (4a and 4b), respectively, serves as a topic of the sentence (i.e., the element that expresses accessible information) which is morphologically marked by *ʔaktin* and *ʔaktin*, respectively. *ʔaktin* and *ʔaktin* bears a ϕ -affix that displays the ϕ -content of the relevant topic. In (4c), the direct object *lħurmah* ‘the woman’ is interpreted as a topic, marked by the topic particle *tara*. These three particles function as topicalizers heading Topic Phrase (à la Rizzi 1997) which is a distinct layer within the articulate CP system. Being heads and endowed with $u\phi$ -content, these

topic particles agree with the element bearing a [*i*TOP] feature while the latter is in situ (or at least not in Spec,Topic Phrase).

On the other hand, non-agreeing particles like *šad* and *tiḡil* do not bear such a ϕ -affix; see (5a-b).

- | | | | |
|--------------------|-----|------------------|-------|
| (5) a. al-hazi:mah | ʕad | ʔal-laʕibi:n | lazim |
| DEF-defeat | PRT | DEF-players | must |
| jidʒtahdu:n | | l-taweeṭ-ah | |
| work harder | | to-compensate-it | |

‘As for the defeat, the players must work harder to compensate for it.’ (Alshamari 2017: 147)

- | | | | |
|-----------------------|-------|--------------|-----------|
| b. Omar | tigil | ɟaf | l-ħurmah. |
| Omar | PRT | see.PST.3S.M | DEF-woman |
| ‘Omar saw the woman.’ | | | |

(Alshamari 2017: 28)

In (5a and 5b), the topicalized elements, *alhazi:mah* 'the defeat' and *Omar* move to Spec, Topic Phrase which is headed by the non-agreeing particle, *ʕad* and *tigil*, respectively. This movement is enforced because non-agreeing particles bear an [EPP] feature that enforces the element that carries [*i*TOP] feature to move to Spec, Topic Phrase headed by the

relevant discourse particle. Under the developed analysis of Alshamari (2017), the main difference between agreeing and non-agreeing particles is that the former bear $u\phi$ -features but not [EPP] feature, while the latter bears [EPP] but not $u\phi$ -features.

Although [EPP]/[TOP]-based account of the difference between agreeing and non-agreeing discourse particles explains why topics do not move to Spec,Topic Phrase when an agreeing particle is used, we propose that the behaviour of topics in either case comes down to a general condition in the grammar that regulates the interaction between ϕ -agreement and overt movement. This condition is the ACR. One piece of evidence for the effect of ACR comes from the fact that when there are two topics in North Hail Arabic, they should appear to the left of the discourse particle even if the discourse particle is agreeing, as mentioned in Alshamari (2017).

- | | | |
|-------------------------------------|------------|----------|
| (6) ʔal-ʔiʕjaal | as-sayarah | ʔedi-hum |
| DEF-boys | DEF-car | PRT-3P.M |
| rkub-u-ah. | | |
| drive.PST-3PM-it | | |
| ‘The boys, the car, they drove it.’ | | |

(Alshamari 2017: 107)

Although *kedl* agrees with the topical subject, the latter moves to the left periphery as the topical object does. Alshamari argues that because *kedl* has one subset of $u\phi$ -features, it cannot mark the two topics; hence the topical object should move upstairs. However, this movement would not be licensed unless the subject moves first (given the intervention effect invoked by the subject against the movement of the object to the left periphery). Away from the theoretical controversies of the mechanisms of movement in such cases (whether movement could occur in order to license the movement of other elements), we propose that the movement of the two topics to the left periphery takes place when ϕ -agreement fails to secure a record of the syntactic dependencies between the head of Topic Phrase which is here *kedl* and the two topics.

In the next section, we elaborate on the how movement and ϕ -agreement is interacted in the Arabic grammar, taking into consideration the interaction between morphological case and ϕ -agreement, as well.

3. Recording syntactic dependencies at the interface

The interactions of morphological case, ϕ -agreement and movement discussed in the previous section are better captured when the role of the three aspects is similar, which is to secure a record of syntactic dependencies at the interface. Morphological case assigned by one element on another is a true sign that there exists a relation between these

two elements (a probe and a goal) in the narrow syntax. Additionally, the presence of a ϕ -affix on an element that expresses the ϕ -content of another element is another true sign that the two elements enter into an Agree relation in the narrow syntax. Finally, the movement of some element from its base-generated position into another place is widely deemed not arbitrary but follows from an Agree relation taking place between the moved element and some c-commanding head (cf. Chomsky 2000). On combining the results of Jarrah (2019) and Alshamari (2017), we reach the following situation. Morphological case blocks an overt ϕ -agreement, which in turn blocks overt movement which is only triggered when syntactic dependencies fail to be recorded using morphological case or ϕ -agreement (morphological case > overt ϕ -agreement > overt movement).

We propose that this recording is imposed by the effects of ACR which is an interface condition that requires a record of the dependencies relation beyond narrow syntax. Miyagawa (2009) discusses the importance of such a record as semantic interpretation and information structure can make use of it when processing the relevant derivation (p. 33). However, Miyagawa (2009) limits this recording to movement. Given that movement takes place when morphological case or ϕ -agreement fail to secure a PF record, we propose that this recording is achieved in the Arabic grammar through movement as a last resort. This implies that Move may not occur at PF as long as Agree relations between the probe

and the goal are secured through morphological case on the goal or an overt ϕ -affix on the probe.

This discussion indicates that morphological case, ϕ -agreement and overt movement occur in the grammar because of the effects of interface conditions. The question that arises here is how these effects are read off in the narrow syntax, given that the effects of these conditions take place at the interface, i.e. after the spell-out point. In order to answer this question, we need to propose that the effects of various syntactic features should not occur in the narrow syntax. This has been recently assumed by Sigurdsson (2017) following Heck and Müller (2007) and Müller (2010). Sigurdsson argues that sentence derivation is achieved through derivational features, which come in two types: structure-building features (Merge) and probe features (Agree). Sigurdsson (2017) proposes that feature values assigned by Merge take effect immediately (in the narrow syntax), whilst feature values that are assigned via Agree take effect at Spell-Out (at the interface). Given that morphological case, ϕ -agreement and overt movement are outcomes of the Agree relation, we propose the translation of the Agree effects occur at the interface, regulated by interface conditions.

Additionally, this role of interface conditions on sentence derivation is consistent with the so-called 'strong minimalist thesis' which views language as a generative process. This process is optimal in the

sense that 'the principles of language are determined by efficient computation and [...] Merge, designed to satisfy interface conditions in accord with independent principles of efficient computation' (Berwick and Chomsky 2011: 30). The interactions of morphological case, ϕ -agreement and overt movement in the Arabic syntax hence offers empirical evidence in favour of the effect of interface conditions on language processing and interpretation. Keeping morphological records of syntactic dependencies contributes to the efficient computation as it facilitates the interpretation of such dependencies at the interface (see Miyagawa 2009 on the interface roles of PF records).

In the following section, we investigate one important phenomenon in the Arabic syntax, i.e., the lack of A-movement in Standard Arabic (Soltan 2007), that can be captured through ACR effects that allow for a straightforward account of this phenomenon.

4. No A-movement

Soltan (2007) provides several pieces of empirical evidence that Standard Arabic (and possibly Arabic dialects) exhibits no A-movement altogether. He discusses the derivation of passive constructions, arguing that the object (upon the demotion of the subject) must not move to Spec,TP, unlike the situation we find in languages with A-movement including

English and French. For instance, a verb like *kataba* becomes *kutiba*, when passivized. This is shown in the pair in (7):

- (7) a. *kataba* *Zayd-un* *ʔal-risaalat-a*
wrote.3SG.MAS *Zayd-NOM* the-letter-ACC
“Zayd wrote the letter.”
- b. *kutiba-t* *ʔal-risaalat-u*
wrote.PASS.SG.FEM the-letter-NOM
“The letter was written.” (Soltan 2007: 96)

Soltan notices that there is no required displacement of the object to Spec,TP in passive structures in Standard Arabic. The object (which is the grammatical subject in such cases) bears nominative case and shows ϕ -agreement with the verb. Nominative case and ϕ -agreement are by-products of the Agree relation between T^0 (the probe) and the object (the goal).

Adopting Uriagereka's (2006) parameterization of A-movement, Soltan proposes that Standard Arabic does not allow A-movement because it sets the OFF-value of the A-movement parameter. This off-setting accounts for the absence of A-movement operations in the language altogether. The question that arises here concerns the plausibility of this

parameter in the first place. Uriagereka (2006) does not provide a formulation of this parameter whose postulation is linked to null Case assignment, i.e., whether it is subject to variation or not. Nonetheless, null case is highly debatable in the literature as several scholars even doubt its entire presence in the first place (see Cecchetto & Oniga 2004, among others). In view of this, parameterization of A-movement should be doubted as its main component (i.e., null case assignment) is challenged by cross-linguistic data (see also Landau 2006).

Under our proposal, the lack of A-movement in Standard Arabic is straightforwardly accounted for assuming the effects of the ACR. A-movement (as a sub-type of movement) only takes place when morphological case or ϕ -agreement fails to secure a record of the syntactic dependencies at the interface. In case of passive, this record is obtained through case assignment. The object is assigned Nominative case which is morphological in Standard Arabic, hence no need for the displacement of the object to Spec,TP.⁵

Furthermore, Soltan shows that Standard Arabic does not have raising constructions, i.e. the subject of the embedded clause cannot raise to Spec,TP of the upper clause (i.e., no parallel structure corresponding to the English sentence *John seems to have come* is found in Arabic):

- (8) *yabduu* *ʔanna l-ʔawlaad-a* *qad* *ħaDar-uu*
 seem.3SG.MAS C the-boys-ACC PCL came-3PL.MAS
 “It seems that the boys have come.” (Soltan 2007: 102)

On the other hand, what appears as the subject of the embedded clause can occur sentence initially, as shown in (9):

- (9) *ʔal-ʔawlaad-u* *yabduu* *ʔanna-hum*
 the-boys-NOM seem.3SG.MAS C-they
 qad *ħaDar-uu*
 PCL come/PERF-3PL.MAS
 “The boys, it seems that they have come.” (Soltan 2007: 102)

In such cases, what appears as a preverbal subject is in fact a topic base-generated in the left periphery. As noted in Soltan (2007), it cannot appear as a definite entity and the the verb does not express agreement with it (note the verb is [3SG.M], while the preverbal subject is [3PL.M]) (Soltan 2007: 102-103). This implies that T does not enter into an Agree relation with the pre-*yabduu* element. This makes Soltan argue that sentences (7) and (8) are not 'transformationally related', in the sense that what appears as a preverbal subject is not base-generated as a subject of the lower

clause but rather it is directly merged as a topical element in the CP zone of the matrix clause.

Under the proposed developed in this paper, no raising is obtained as there is no syntactic dependency (an Agree relation) between upper T^0 (realized as *yabduu* given the movement of the verb to T^0) and the subject of the embedded clause. Hence recording is not demanded as no ACR effects could arise in such cases.⁶ It might be that upper T^0 agrees with an expletive *pro* situated in the upper clause, resulting in the [3SG.M] form of the verb (see Mohammad 2000, Soltan 2007).⁷

In the following section, we discuss one apparent challenge against the effects of ACR in grammar. This challenge is imposed due to the movement of the thematic subject to Spec,TP in SVO clauses in several Arabic dialects. We show that this challenge can be resolved when the Criterial Freezing to movement and chain formation (Rizzi 2005, 2006, Rizzi and Shlonsky 2007) is adopted.

5. Challenging phenomena

In order to validate the effects of ACR as well as the ensuing interactions of morphological case, ϕ -agreement and overt movement, we should discuss the challenging phenomena that may undermine the entire analysis. One problem that arises in the face of the analysis proposed in this paper is the movement of the thematic subject to Spec, TP in Arabic

dialects. As mentioned in several papers (Parkinson 1981, Fassi Fehri 1993, Aoun *at al.* 1994, Shlonsky 1997, and Mohammad 2000, Benmamoun 2000, Jarrah and Abu Salem 2020) Arabic dialects, including Moroccan Arabic, Egyptian Arabic, and Jordanian Arabic, are different from Standard Arabic in that the former includes the movement of the thematic subject to Spec,TP, whereas the latter does not (the subject remains in Spec,vP). This ultimately leads to the fact that Standard Arabic is a VSO language, whereas Arabic dialects are predominately SVO languages.

The problem that arises here against ACR effects is that although T^0 agrees with the thematic subject (while the latter is in situ), resulting in a ϕ -affix of the subject on the verb (T^0) (so the ACR is satisfied), the subject still moves to Spec,TP. As we mentioned above, the presence of a ϕ -affix of the goal on the probe makes the movement of the goal to Spec position of the phrase headed by the probe unnecessary as the syntactic dependency between the probe and goal is recorded through overt ϕ -agreement.

On the other hand, the movement of the subject from its thematic position no longer poses a problem if we adopt the recent approach of the Criterial Freezing to movement and chain formation (Rizzi 2005, 2006, Rizzi and Shlonsky 2007). According to Rizzi (2006), criteria are configurations where a head shares an interpretable feature (including [Q],

[TOP], [FOC], and [R] for questions, topics, foci, and relatives, respectively with its specifier. Once a criterion is satisfied (having its Spec filled with a phrase bearing a corresponding interpretable feature), the relevant phrase is frozen in place, according to Criterial Freezing, mentioned in (10):

- (10) Criterial Freezing: A phrase meeting a criterion is frozen in place (Rizzi 2010: 149).

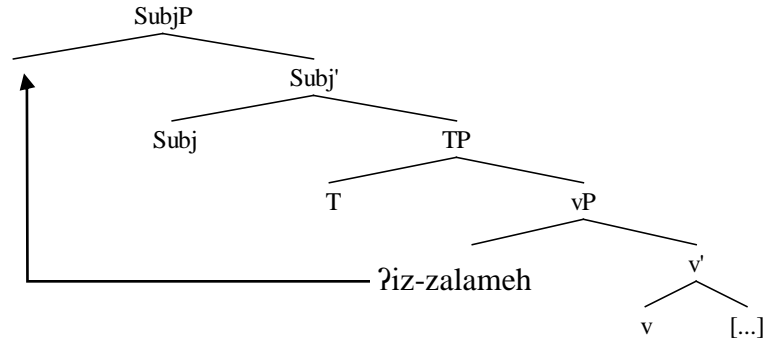
The most relevant here is the Subject Criterion stated in (11).

- (11) Subject Criterion: The functional head Subj attracts a nominal to its specifier and determines the subject-predicate articulation (Rizzi and Shlonsky 2007: 149)

The Subject Criterion is normally satisfied with the thematic subject moving from its base-position to Spec,Subj(ect) Phrase, which is a distinct layer c-commanding TP). Let us suppose that the thematic subject in SVO clauses in Arabic dialects does not move to Spec,TP but to Spec, SubjPhrase attracted by Subj⁰ which is a criterial head. Following this analysis, sentence (12) has the derivation in (13) (irrelevant details are skipped).

- (12) *ʔiz-zalameh* *baaʕ* *ʔis-sijjaarah*
 DEF-man buy.PERF.3SG.M DEF-car
 'The man bought the car.'

(13)



The subject *ʔiz-zalameh* 'the man' does not move to Spec,TP but to Spec,SubjP attracted by Subj⁰.

In order to account for the form of the verb which expresses the ϕ -content of the thematic subject, we assume following the standard assumptions that T⁰ enters into an Agree relation with the subject which consequently values its $u\phi$ -features. Accordingly, there is no need for the subject to move to Spec,TP under our account, as the syntactic dependency between T⁰ and the subject is recorded through ϕ -agreement. On the other hand, given that the subject carries [SUBJ] feature which is responsible for establishing a subject-predicate relation, Subj⁰ enters into an Agree relation with the subject which is consequently attracted by Subj⁰ to fill its Spec. Under our proposal, the movement of the thematic

subject to Spec,SubjP is executed because the probe (i.e., Subj^0) does not bear a bundle of $u\phi$ -features, and Arabic dialects do not have morphological case. This makes no option but the movement of the subject to Spec,Subj in order to record the syntactic dependency between the two.⁸

6. Conclusion

In this paper, we have discussed some interactions of morphological case, ϕ -agreement and overt movement in the Arabic clause structure. We essentially extended the effects of ACR to overt movement, proposing that the latter takes place in syntax when morphological case or ϕ -agreement fails to record syntactic dependencies at the interface. This systematic interaction is taken as evidence for the interface effects on syntactic derivations and outputs of the grammar. Additionally, we have discussed how these interactions help us provide a non-parametric account of the lack of A-movement, especially with respect to the lack of the movement of the object to Spec,TP in passive constructions and the lack of raising constructions in the language altogether. Furthermore, we have proposed that the thematic subject in SVO clauses in Arabic dialects does not move to Spec,TP but to Spec,SubjP, attracted by Subj^0 , due to the criterial freezing effects. This attraction is enforced because Subj^0 does not bear a

bundle of $u\phi$ -features nor assign morphological case, hence movement is triggered as a last resort.

Although this paper provides evidence, as we claim, in favor of systemic interactions of three aspects of grammar (morphological case, ϕ -agreement and overt movement), more research should be conducted in order to verify (or even dismiss) these interactions. As we mentioned in the introduction, the overall characterization of these interactions in the current generative work is still incomplete due to a large range of variation cross-linguistically. Research is needed to provide a much finer-grained picture of these interactions. This also gives rise to explore how different languages secure the effects of ACR, if any.

Acknowledgements:

I am grateful for the audience of the 34th Annual Symposium on Arabic Linguistics, for their significant input that considerably helped to enhance the quality of the paper. Any errors remain mine.

References

- Al-Balushi, R. (2018). The Relationship between Agreement and Morphological Case: Evidence from Arabic. *Concentric: Studies in Linguistics*, 44, 69-109.
- Al-Balushi, R. (2011). *Case in Standard Arabic: The Untraveled Paths*. Doctoral dissertation, University of Toronto, Toronto.
- Alshamari, M. R. D. (2017). *Topic particles in the North Hail dialect of Najdi Arabic* (Doctoral dissertation, Newcastle University).
- Aoun, J., E. Benmamoun and L. Choueiri. (2010). *The syntax of Arabic*. Cambridge: Cambridge University Press
- Aoun, J. Benmamoun, E., and Sportiche, D. (1994). Agreement, word order and conjunction in some varieties of Arabic. *Linguistic Inquiry* 25: 195–220.
- Baker, M., (2012). On the relationship of object agreement and accusative case: evidence from Amharic. *Linguistic Inquiry* 43, 255-274
- Baker, M. C. (2013). On agreement and its relationship to case: Some generative ideas and results. *Lingua*, 130, 14-32.
- Béjar, S. (2003). *Phi-syntax: A theory of agreement*. Toronto, ON: University of Toronto.
- Benmamoun, E. (2000). *The feature structure of functional categories: a comparative study of Arabic dialects*. Oxford: Oxford University Press.

- Berwick, R. C., & Chomsky, N. (2011). The biolinguistic program: The current state of its development. *The biolinguistic enterprise: New perspectives on the evolution and nature of the human language faculty*, 19-41.
- Bobaljik, J. D. (2008). Where's Phi? Agreement as a post-syntactic operation. In D. Harbour, D. Adger, & S. Béjar (Eds.), *Phi Theory: Phi-features across interfaces and modules* (pp. 295–328). Oxford, U.K.: Oxford University Press.
- Carstens, V. (2001). Multiple agreement and case deletion: Against phi-(in)completeness. *Syntax* 4.3:147–163.
- Cecchetto, C., & Oniga, R. (2004). A challenge to null case theory. *Linguistic Inquiry*, 35(1), 141-149.
- Chomsky, N. (2000). 'Minimalist Inquiries: The Framework'. In H. Lasnik, R. Martin, D. Michaels and J. Uriagereka (eds.) *Step by step. essays on minimalist syntax in honor of Howard Lasnik*. Cambridge: MIT Press.
- Chomsky, N. (2001). 'Derivation by phase'. In M. Kenstowicz (ed.) *Ken Hale. A Life in Language*. Cambridge: MIT Press. 1-52.
- Chomsky, N. (2005). 'Three factors in language design'. *Linguistic Inquiry* 36: 1-22.
- Coon, J., & Parker, C. (2019). Case interactions in syntax. In *Oxford Research Encyclopedia of Linguistics*.

- Fassi Fehri, A. (1993). *Issues in the Structure of Arabic Clauses and Words*. Kluwer, Dordrecht.
- Frascarelli, M. and Hinterhölzl, R. (2007). 'Types of Topics in German and Italian'. In S. Winkler and K. Schwabe (eds.) *On Information Structure, Meaning and Form*. Amsterdam: John Benjamins. 87-116.
- Giorgi, A. (2011). Reflections on the Optimal Solution: On the Syntactic Representation of Indexicality. AM-Di Sciullo and C. Boeckx (Eds.) *The Biolinguistic Enterprise*, Oxford University Press, Oxford.
- Heck, F. and Müller, M. (2007). Extremely local optimization. In *Proceedings of WECOL*, volume 26, 170–183.
- Holmberg, A., & Hróarsdóttir, T. (2003). Agreement and movement in Icelandic raising constructions. *Lingua*, 113(10), 997-1019.
- Jarrah, M. (2019). Record your agree: A case study of the Arabic complementizer ?inn. *Journal of Linguistics*, 55(1), 83-122.
- Jarrah, M., & Abusalim, N. (2020). In favour of the low IP area in the Arabic clause structure. *Natural Language & Linguistic Theory*.
- Landau, I. (2006). Severing the distribution of PRO from case. *Syntax*, 9(2), 153-170.
- Ludovico, F., Manzini, M. R., & Savoia, L. M. (2015). Linkers and agreement. *The Linguistic Review*, 32(2), 277-332.

- Markman, V. (2005). *The syntax of case and agreement: its relationship to morphology and argument structure* (Doctoral dissertation, Ph. D. Dissertation Rutgers University).
- Miyagawa, S. (2009). *Why agree? Why move?: Unifying agreement-based and discourse-configurational languages* (Vol. 54). MIT Press.
- Mohammad, M. (1988). Nominative Case, I-subjects and Subject-verb Agreement. *Proceedings of CLS Parasession on Agreement and Grammatical Theory* ed. by Diane Brentari, Gary Larson, and Lynn MacLeod, 223–235. Chicago: CLS.
- Mohammad, M. (1990). ‘The problem of subject-verb agreement in Arabic: Toward a solution’. In M. Eid (ed.). *Perspectives on Arabic Linguistics I: Papers from the First Annual Symposium on Arabic Linguistics*, Amsterdam: John Benjamins. 95-125.
- Mohammad, M. (2000). *Word order, agreement, and pronominalization in Standard and Palestinian Arabic* (Vol. 181). Amsterdam: John Benjamins
- Musabhien, M. (2009). *Case, agreement and movement in Arabic: a Minimalist approach*. PhD dissertation. Newcastle University
- Müller, G. (2010). On deriving CED effects from the PIC. *Linguistic Inquiry* 41:35–82

- Ouhalla, J. (1994). "Verb Movement and Word Order in Arabic" *Verb Movement*. ed. by David Lightfoot and Norbert Hornstein, 41–72. Cambridge: Cambridge University Press.
- Ouhalla, J. (1997). 'Remarks on focus in Standard Arabic'. In M. Eid and R. R. Ratcliffe (eds.) *Perspectives on Arabic linguistics X: papers from the Tenth Annual Symposium on Arabic Linguistics*. Amsterdam: John Benjamins. 9-45.
- Parkinson, D. (1981). VSO to SVO in Modern Standard Arabic: A study in diglossia syntax. *al-'Arabiyya* 14: 24–37.
- Polinsky, M., Potsdam, E., (2001). Long distance agreement and topic in Tsez. *Natural Language and Linguistic Theory* 19, 583--646
- Rizzi, L. (1997). 'The fine structure of the left periphery'. In L. Haegeman (ed.). *Elements of Grammar*. Dordrecht: Kluwer Academic Publishers. 281-337
- Rizzi, L. (2005). 'On some properties of subjects and topics'. In Bruge, L., Giusti, G., Munaro, N., Schweikert, W., Turano, G., *Contributions to the XXX Incontro di Grammatica Generativa*. Venice: Cafoscarina. 203-224
- Rizzi, L. (2006). 'On the Form of Chains: Criterial positions and ECP effects', in L. Cheng and N. Corver (eds.) *Wh Movement: moving on*. Cambridge: MIT Press. 97-133.

- Rizzi, L. (2010). 'On some properties of criterial freezing'. In E. Phoevos Panagiotidis (ed.) *The complementizer phase: Subjects and operators*, vol. 1, Oxford: Oxford University Press. 17-32
- Rizzi, L. and Shlonsky, U. (2007). 'Strategies of subject extraction'. In H. Gartner and U. Sauerland (eds.) *Interfaces + recursion = language? Chomsky's minimalism and the view from syntax-semantics*. Berlin: Mouton de Gruyter. 115-160
- Shlonsky, U. (1997). *Clause structure and word order in Hebrew and Arabic: An essay in comparative Semitic syntax*. Oxford: Oxford University Press
- Sigurðsson, E. (2017). *Deriving case, agreement and voice phenomena in syntax*. Doctoral Dissertation, University of Pennsylvania.
- Soltan, U. (2007). *On Formal Feature Licensing in Minimalism: Aspects of Standard Arabic Morphosyntax*. Ph.D. dissertation: University of Maryland
- Tanaka, T. (2005). C, T, and case/agreement: A unified analysis of finite and nonfinite clauses. *Journal of the School of Letters* 1:91–105.
- Uriagereka, J. (2006). Complete and partial Infl. *Agreement systems*, 267-298.

¹ Following Shlonsky (1997), Jarrah (2019) treats the bound forms on C⁰ as agreement inflections rather than morphological realizations of the pro itself, as proposed in traditional Arabic grammar (see Mohammad 2000, who revitalizes and formalizes this view in modern syntactic terms). Note here that Mohammad (2000) claims that the bound forms on C⁰ are weak pronouns as pros in Arabic do not tolerate accusative case assignment. Mohammad's (2000) view is however severely challenged by cross-linguistic evidence which shows that realization of pros is insensitive to case assignment.

² Jarrah (2019) makes use of ACR to account for the subject–verb agreement asymmetries in MSA. As is widely known, the verb in this language shows partial agreement with the subject in VSO clauses, while it shows full agreement in SVO clauses (see Mohammad 1990; Fassi Fehri 1993; Benmamoun 2000; Aoun et al. 2010). These asymmetries are exemplified in the following examples (Musabhien 2009: 23):

- (i) wasʕala ʔal-ʔawlaad-u
 arrived.3SM DEF-boys-NOM
 ‘The boys arrived.’
- (ii) ʔal-ʔawlaad-u wasʕalu
 DEF-boys-NOM arrived.3PM
 ‘The boys arrived.’

Jarrah (2019) assumes that these asymmetries arise due to the effects of ACR. The pre-verbal subject in SVO clauses being a topic is base-generated in its surface position rather than a product of movement (cf. Soltan 2007). Spec,vP is filled with a pro. In such cases, the Agree relation is held between T⁰ and the pro, enforcing a ϕ -inflection of the pro on T⁰. On the other hand, in VSO clauses, T⁰ agrees with the DP subject in which case the Agree relation is recorded through the overt nominative case assigned on the subject by

T⁰. There is no need for T⁰ to have a full PF reflex of valuation of its $u\phi$ -features by the subject. This results in the impoverished agreement between the verb and the subject.

³ It bears mentioning that Alshamari (2017) does not discuss the role of movement in securing such records, but he limits the discussion to the difference between what he calls agreeing particles vs. non-agreeing particles. This difference can be exploited to show the interactions of movement and ϕ -agreement, something the current paper aims to prove.

⁴ As proposed in Alshamari, topic particles can also be distinguished among each other with respect to the type of the topic they mark. For instance, *tara* marks contrastive topics, while *tigil* marks familiar topics, assuming topics typology advanced in Frascarelli and Hinterhölzl (2007). This functional typology of topic particles is irrelevant to the ϕ -agreement and movement interactions discussed in this paper.

⁵ A question that arises here is that Gender feature of the object still appears on T⁰ in passive constructions although T⁰ assigns the object nominative case. We follow here Jarrah (2019)'s assumption that Nominative case is not enough alone to qualify as a record because it is the default case in Arabic (Mohammad 1988 and Ouhalla 1994), i.e. it can be a sign that the goal has not entered into an Agree relation with other elements. For this reason, nominative case can be qualified as a record when some other features such as gender are spelled on the probe.

⁶ Soltan (2007) shows, following empirical evidence, that Standard Arabic does not obtain Object Shift, which has been assumed to be an instance of A-movement in other languages.

⁷ Ouhalla (1997) provides evidence that when the head of Focus Phrase is realized in Standard Arabic, the focused expression may not move to Spec,Focus Phrase but remains in situ. He calls this as 'morphological identification'. According to the analysis developed in this paper, morphological identification can be viewed as an effect of ACR as the Agree relation between the head of Focus Phrase and the focused XP can be

morphologically identified by virtue of the presence of the former and the presence of a specialized intonational contour on the latter. If this is right, ACR can be satisfied by other PF effects including intonation and pitch accents. We leave this for further research.

⁸ Another possible challenge against ACR effects comes from the derivation of ECM constructions in Standard Arabic where the subject of the embedded clause is assigned case by the matrix verb after the movement of the former to Spec,TP of the lower clause. The movement of thematic subject to Spec,TP of the lower clause (or even to a higher position) is not triggered by ACR effects as the matrix clause assigns morphological case to the latter. However this challenge no longer holds if we adopt the prolepsis approach (Davies 2005) to such constructions, a task already undertaken in Soltan (2007) who brings several pieces of evidence that what appears as an ECM subject is in fact a result of "base-generating a lexical DP, either in the matrix clause, or in the left periphery of the embedded clause" (Soltan 2007: 137).