Morphological case, ϕ-agreement, and overt movement interactions in the Arabic grammar

Marwan Jarrah

(The University of Jordan)

m.jarrah@ju.edu.jo

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. It argues that these three aspects of grammar serve one specific purpose, i.e., to record (i.e., express) Agree dependencies (of the Agree operation; cf. Chomsky, 2001) at the interface level of Phonetic Form (PF). To this end, constructions that include subject-verb agreement, (non-)agreeing discourse markers, and complementizer agreement in Standard Arabic and Arabic dialects (Jordanian Arabic and Najdi Arabic) are examined. The study proposes that Agree dependencies, which occur in the narrow syntax (before spellout), are recorded at PF through morphological case (assigned by the probe on the goal), 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. Such an interaction implies that morphological case bleeds ϕ-agreement

which in turn is found to bleed overt movement. Exceptions to this rule are discussed and independently motivated.

Keywords

Agree – case – interface conditions – overt movement

1. Introduction

This research investigates how Agree relations, which occur before spellout, are manifested at the interface level of Phonetic Form (PF).[1] Chomsky (2001) argues for the presence of the Agree operation that can operate in distance, in the sense that the two elements that enter the Agree operation (i.e., the *probe* that bears a feature set that initiates the Agree operation through searching for the *goal* which bears another set of the 'matching' features; see Fuß 2005, p. 25) should not be located in the same XP as in Spec-head relations. For Chomsky (2001), the Agree operation takes place within a local domain which is configurationally specified. For Agree to take place, the probe should c-command the goal that should be visible to the probe (e.g., the goal should not be located in the complement domain of a lower phase head). Consider sentence (1) which is an example of the Agree operation:

(1) There were several books on that table.

The probe *were* whose underspecified form bears an unvalued NUMBER feature agrees in number with the postverbal subject *several books*, which acts as the goal bearing a valued NUMBER feature.

A point worth noting here concerns the realization of the Agree operation at PF. Chomsky (2001), Baker (2008), among others, argue that (morphological) case and ϕ-agreement (i.e., agreement in PERSON, NUMBER, and GENDER) materialise (i.e., record) Agree operations at the PF, while others (e.g., Miyagawa, 2009) propose that overt movement sometimes takes place to materialize Agree relations at the interface level of PF.

Such explorations into the interactions of morphological case, ϕ-agreement and overt movement are an important agenda in current generative work (Baker, 2013; 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).[2] These explorations also offer insights into the semantic interpretation of syntactic dependencies at the interface (Holmberg & Hróarsdóttir, 2003; Miyagawa, 2009).

On the other hand, one look at the related literature is enough to reveal that several diverging proposals relating to the interactions of these three

aspects of grammar have been made. One obvious problem that a uniform account of these interactions encounters is the fact that 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 put aside. In the first group, researchers propose that there exists no relation between morphological case and ϕ-agreement or between ϕ-agreement and movement (Tanaka, 2005). Under this view, ϕ-agreement, for instance, takes place irrespective of the presence or absence of morphological case and movement. Although this view looks simplistic, we claim that it obscures the collective role of these aspects in natural languages. Emerging evidence coming from several languages strongly indicates that morphological case, ϕ-agreement, and overt movement may feed or even bleed each other (Béjar, 2003; Markman, 2005; Baker, 2012).

Another team of researchers propose that there exists some connection between morphological case, ϕ-agreement or overt movement. This connection, nonetheless, varies cross-linguistically and may 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 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 & Potsdam, 2001). 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 varieties (Standard Arabic (SA), Jordanian Arabic (JA), and Najdi Arabic (NA)) that morphological case, ϕ-agreement, and overt movement occur due to a strict condition on their presence in the grammar. This condition regulates their occurrence that aims to secure interface (PF) records of the Agree dependencies that operate in the narrow syntax. Our main proposal is that ϕ-inflections are found when morphological case is unable to take place, while overt movement is present when ϕ-agreement is no longer an option

(because the probe bears no unvalued ϕ-features or fails to secure the required record with all of its goals). Constructions that include subject-verb agreement, (non-)agreeing discourse markers, and complementizer agreement in SA, JA, and NA are examined to support this view of the interaction of these three aspects in the Arabic grammar. This restriction on the occurrence of these aspects with each other is taken as evidence that there does exist a strong interaction between these three aspects in the Arabic grammar. This is by itself significant as it brings empirical evidence that Agree dependencies should be recorded at PF, hence providing supporting arguments in favor of the connection between narrow syntax and interface levels. This all allows us a better understanding of the determinants of overt movement in the Arabic grammar and accounts for the observation that morphological case in Arabic is normally not accompanied by the presence of ϕ-inflections, as we show in this paper.

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 (ACR) (i.e., an Agree chain must be recorded at PF). In section 4, we explore how this view

accounts for the absence of A-movement in SA, doing away with the parametric view proposed in Soltan (2007). In section 5, we investigate the constructions that apparently pose challenges to our view of the interactions of morphological case, ϕ-agreement, and overt movement in the Arabic grammar. We show that such challenges no longer hold (or at least weakened) when independently-motivated assumptions are made. Section 6 concludes the paper.

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

In this section, we discuss morphological case, ϕ-agreement and overt 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 varieties (i.e. SA, JA, and Lebanese Arabic (LA)). Emphasis is placed on complementizer (C^0) agreement and subject-verb agreement asymmetries. One main generalization of this paper is that when the probe (e.g., C^0) assigns morphological case to its goal (i.e. the subject or the object, depending essentially on their structural closeness to C^0), the probe may not bear a ϕ-affix that expresses the ϕ-content of the

goal. Consider (2) which is an example from SA, where C^0 *ʔinna* agrees with the subject assigning it accusative case.[3]

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

Sentence (1) shows that C^0 *ʔinna* in SA does not bear a ϕ-affix expressing the ϕ-content of the goal when it assigns its goal morphological case. 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.[4]

On the other hand, when the goal cannot receive a morphological case because it is an expletive pro that fulfils an EPP function in Spec,TP (as in (3a), which is another example of SA) or because the given language does not display morphological case as in Arabic dialects (consider (3b) from JA), C^0 *ʔinna* should bear a ϕ-affix that expresses the ϕ-content of the goal.

(3) a. *ʔinna**(-hu)* *qaraʔ-at* *ʔal-fatāt-u*

COMP-3SG.M pro$_{3SG.M}$ read.PST-3SG.F DEF-girl-NOM

ʔad-dars-a

DEF-lesson-ACC

'The girl read the lesson.' (Jarrah, 2019, p. 88)

b. *ʔiʃ-ʃab* *ʔiʕtaraf* *ʔinn-hum*

DEF-young man confess.PST.3SG.M COMP-3PL.M

ʔixwat-uh *ðˁarab-u* *ʔil-walad*

brothers-his hit.PST-3PL.M DEF-boy

'The young man confessed that his brothers hit the boy.'

(Jarrah, 2019, p. 89)

In (3a), *ʔinn* agrees with a pro located in Spec,TP. Because the pro does not have a phonological form and hence cannot bear morphological case, *ʔinna* bears a ϕ-affix (*-hu*) that displays the ϕ-content of the pro.[5] This affix is taken as a morphological outcome of the Agree relation between *ʔinna* and the pro. In (3b), *ʔinn* in JA agrees with the preverbal subject and hence bears a ϕ-affix that displays the ϕ-content of its goal. *ʔinn* bears this affix as JA does not make use of morphological case. The Agree relation between *ʔinn* and its goal is hence morphologically realized (i.e. recorded)

through the ϕ-affix of the subject on *ʔinn* when morphological case is no longer an option.

Jarrah (2019) argues that the complementarity between morphological case and ϕ-agreement in the complementizer phrase (CP) domains of the Arabic dialects investigated is ruled by a postulated interface condition, labelled as the Agree Chain Record (ACR) mentioned in (4):

(4) The Agree Chain Record (ACR): An Agree chain must be recorded at PF. (Jarrah, 2019, p. 111)

Assuming the ACR, Agree 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. This interaction of morphological case and ϕ-agreement implies that they are used for the same reason which is to morphologically realize Agree relations between probes and goals in the interface. As mentioned in (Miyagawa, 2009), this realization helps semantic interpretation and information structure make use of dependency relations beyond narrow syntax.

The interesting point to mention here is that this role of recording Agree dependencies is not limited to morphological case and ϕ-agreement, but it can be carried out by overt movement, as the data in Alshamari

(2017) imply. Although Alshamari (2017) does not discuss the role of movement in securing Agree records at the interface as his discussion is limited to the difference between agreeing particles vs. non-agreeing particles, this difference can be in fact exploited to supply evidence in favour of the interactions of movement and ϕ-agreement, which the current paper aims to prove. We discuss this role of overt movement in securing Agree records at the interface in the following subsection.

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 including *ʁedɪ*, *tara*, and *ʔaktɪn* can bear a ϕ-affix that expresses the ϕ-content of the element that functions as the topic of the sentence, as the following examples in (5a-c) show:[6]

(5) a. *ʁedɪ-hin* *l-banāt* *ʃaf-an*
PRT-3PL.F DEF-girls see.PST-PL.F
as-sayarah *bi-a-sāħah*
DEF-car in-DEF-yard
'The girls, they saw the car in the yard.'

(Alshamari, 2017, p. 89)

b. *ʔaktɪn-h* *omar* *ʃaf* *l-ħurmah*

PRT-3SG.M Omar see.PST.3SG.M DEF-woman

'Omar, he saw the woman.' (Alshamari, 2017, p. 28)

c. *tara-ah* *ʃaf-ah* *l-ħurmah* *Omar*

PRT-3SG.F see.PST.3SG.M-her DEF-woman Omar

'The woman, Omar saw her.' (Alshamari, 2017, p. 146)

According to Alshamari (2017), the preverbal element *lbanāt* 'the girls' and *Omar* 'Omar' in (5a) and (5b), respectively, serves as a topic of the sentence (i.e., the element that expresses accessible information) which is morphologically marked by *ʁedɪ* and *ʔaktɪn*, respectively. This marking is manifested through the ϕ-affix that appears on the topic particles and displays the ϕ-content of the relevant topic. In (5c), the object *lħurmah* 'the woman' is interpreted as a topic, marked by the topic particle *tara*. Under the analysis developed in Alshamari (2017), topic particles head Topic Phrase, which is a distinct layer within the articulate CP system (à la Rizzi, 1997). Being heads and endowed with *u*ϕ-content, topic particles agree with the element bearing a [*i*TOP] feature while the latter remains in situ (or at least not in Spec,Topic Phrase). This is clear in examples (5)

where the topical element occurs to the right of the particle. Note that the verb can intervene between the particle itself and the topical element as clearly shown in (5c). The agreement between agreeing particles and the subject or the object does not affect subject-verb agreement and any other Agree dependency in the clause.

On the other hand, non-agreeing particles including *ʕad* and *tigil* do not bear such a ϕ-affix; see (6a-b).

(6) a. *al-hazi:mah* *ʕad* *ʔal-laʕibi:n* *lazim*
DEF-defeat PRT DEF-players must
jidʒtahdūn *l-taʕwēðˁ-ah*
work.hard to-compensate-it
'As for the defeat, the players must work harder to compensate for it.' (Alshamari, 2017, p. 147)

b. *Omar* *tigil* *ʃaf* *l-ħurmah*
Omar PRT see.PST.3S.M DEF-woman
'Omar saw the woman.' (Alshamari, 2017, p. 28)

In (6a) and (6b), the topicalized elements, *alhazi:mah* 'the defeat' and *Omar* move to Spec, Topic Phrase headed by *ʕad* and *tigil*, respectively. For Alshamari, this movement is enforced because non-agreeing particles

bear an [EPP] feature enforcing the element that carries [*i*TOP] feature to move to Spec, Topic Phrase headed by the relevant discourse particle. The main difference between agreeing and non-agreeing particles is that the former bear *u*ϕ-features but not [EPP] feature, while the latter bears [EPP] but not *u*ϕ-features.

Although [EPP]/[TOP]-based account of the difference between agreeing and non-agreeing discourse particles account for the behaviour of the topical element in each case, 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 in favour of the ACR effects in such cases 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 in case of agreeing particle, as shown in the following example.

(7) *ʔal-ʔiʕjāl as-sayarah ʁedɪ-hum rkub-u-ah*
DEF-boys DEF-car PRT-3PL.M drive.PST-3PM-it
'The boys, the car, they drove it.'

(Alshamari, 2017, p. 107)

Although *ʁedɪ* agrees with the topical subject, the latter moves to the left periphery as the topical object does. For this, Alshamari argues that

because *ʁedɪ* has one subset of *u*ϕ-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 minimality effect invoked by the subject against the movement of the object to the left periphery).[7] Whether this analysis is right or not, 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 Agree dependencies between *ʁedɪ* and the two topics.

The next section provides more discussion on 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 argued to be similar, namely to secure a record of Agree dependencies at the interface. The presence of morphological case can be a true sign that there exists a relation between the probe and its goal before spellout. Likewise, the presence of a ϕ-affix on one head 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. Furthermore, 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 (Chomsky, 2001). 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 Agree dependencies fail to be recorded using morphological case or ϕ-agreement (i.e., morphological case > overt ϕ-agreement > overt movement).

We propose that this recording is imposed by the ACR which is an interface condition that requires a record of the Agree 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 our evidence 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 spellout 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 Sigurðsson (2017) following Heck & Müller (2007) and Müller (2010). Sigurðsson argues that sentence derivation is achieved through derivational features, which come in two types: structure-building features (Merge) and probe features (Agree). Sigurðsson (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 spellout (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 & Chomsky, 2011, p. 30). The interactions of morphological case, ϕ-

agreement and overt movement in the Arabic syntax hence offer empirical evidence in favour of the effect of interface conditions on language processing and interpretation. Keeping morphological records of Agree dependencies contributes to the efficient computation as it facilitates the interpretation of such dependencies at the interface (see Miyagawa, 2009).

In the following section, we investigate one important phenomenon in the Arabic syntax, i.e., the lack of A-movement in SA (Soltan, 2007). We show that this phenomenon can be captured through the ACR effects that allow for a straightforward account of this phenomenon. Therefore, this adds credence to our analysis for the effect of the interface conditions on how Agree relations are manifested at PF, and it does away with the parametric approach adopted in Soltan (2007) to account for this phenomenon.

4. No A-movement

Soltan (2007) provides several pieces of empirical evidence that SA 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-risālat-a*

wrote.3SG.MAS Zayd-NOM the-letter-ACC

'Zayd wrote the letter.'

b. *kutiba-t* *ʔal-risālat-u*

wrote.PASS.SG.FEM the-letter-NOM

'The letter was written.' (Soltan, 2007, p. 96)

Soltan notices that there is no required displacement of the object to Spec,TP in passive structures in SA. 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 outcomes 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 SA 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. Null case is, nonetheless, highly debatable in the literature as several scholars even doubt its entire

presence in the first place (Cecchetto & Oniga, 2004). 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 (Landau, 2006).

Under our proposal, the lack of A-movement altogether in SA can be accounted for in terms of the ACR. According to 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 Agree dependencies at the interface level of PF. However, all Agree dependencies between A-heads and their goals in SA can be all recorded through morphological case or ϕ-agreement, a matter that bleeds A-movement in the grammar.

In case of passive, the Agree dependency between T^0 and the object is recorded through ϕ-agreement as the verb bears an ϕ-affix (GENDER and PERSON in this case) that copies the ϕ-content of the object, hence no need for the displacement of the object to Spec,TP. Note that we rely on our record the Agree relation between in passive constructions on ϕ-agreement rather than Nominative case which is morphological in SA. We follow here Jarrah (2019)'s assumption that Nominative case in SA is not enough alone to qualify as a record because it is also the default case in Arabic (Mohammad, 1988; Ouhalla, 1994); Nominative case is read at the interface 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 out on the probe.

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

(8)	*yabdū*	*ʔanna*	*l-ʔawlād-a*	*qad*	*ħaDar-ū*
	seem.3SG.MAS	C	the-boys-ACC	PCL	came-3PL.MAS
	'It seems that the boys have come.'				(Soltan, 2007, p. 102)

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

(9)	*ʔal-ʔawlād-u*	*yabdū*	*ʔanna-hum*	
	the-boys-NOM	seem.3SG.MAS	C-they	
	qad	*ħaDar-ū*		
	PCL	come/PERF-3PL.MAS		
	'The boys, it seems that they have come.'			(Soltan, 2007, p. 102)

As noted in Soltan (2007, p. 102-103), the preverbal subject in (9) is in fact a topic base-generated in the left periphery. It cannot appear as an

indefinite entity, and the verb does not express agreement with it. In (9), the verb is [3SG.M], while the preverbal subject is [3PL.M]. This implies that T^0 does not enter into an Agree relation with the pre-*yabdū* element. This makes Soltan argue that sentences (8) and (9) 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; rather it is directly merged as a topical element in the CP zone of the matrix clause.

Under the proposal developed in this paper, no raising is obtained as there is no Agree dependency between upper T^0 (realized as *yabdū* given the movement of the verb to T^0) and the subject of the embedded clause. As such, the ACR effects do not arise in such cases. In (8) the upper T^0 (the verb of the matrix clause) agrees with an expletive pro situated in Spec,TP (of the upper clause), resulting in the [3SG.M] form of the verb (Soltan, 2007).[8]

In the following section, we discuss some apparent challenges facing the effects of the ACR in the Arabic grammar. These challenges include the position of the subject in SVO clauses in Arabic dialects and the lack of ACR effects in V-object agreement and in prepositional phrases.

5. Challenging phenomena

In order to support the presence of the ACR effects in the Arabic grammar as well as the ensuing interactions of morphological case, ϕ-agreement and overt movement, we should discuss and resolve the challenges that present clear problems to such effects; otherwise the validity of the entire analysis is undermined.

One problem that arises in the face of the analysis advanced in this paper is the proposed movement of the thematic subject to Spec,TP in Arabic dialects. As mentioned in several papers (Parkinson, 1981; Fassi Fehri, 1993; Benmamoun, 2000; Jarrah & Abu Salem, 2020), Arabic dialects, including Moroccan Arabic, Egyptian Arabic, and Jordanian Arabic, are different from SA in that the former includes the movement of the thematic subject to Spec,TP, whereas the latter does not (i.e., the subject remains in Spec,vP). This difference between Arabic dialects and SA underlies the situation that SA is predominately a VSO language (because the subject does not move to Spec,TP in discourse-neutral contexts), whereas Arabic dialects are predominately SVO languages, given the movement of the subject to Spec,TP.[9]

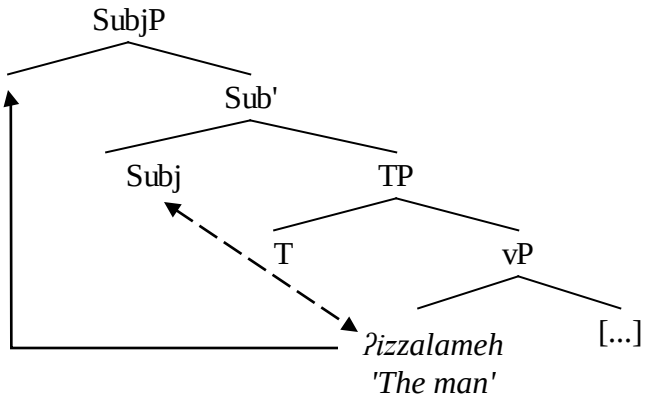
The problem that arises here against the ACR effects with respect to Arabic dialects is that although T^0 agrees with the thematic subject while the latter is in Spec,vP (resulting in a ϕ-affix of the subject on the verb (T^0)), the subject still moves to Spec,TP although the ACR is, following our analysis, already satisfied by the presence of the subject ϕ-

affix on the verb. 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 Agree dependency between the probe and goal in such cases is recorded through overt ϕ-agreement.

On the other hand, the position of the subject to the left of the verb in SVO clauses in Arabic dialects no longer poses a problem to the ACR if we suggest that the subject in SVO clauses is attracted by a higher functional head above TP. In other words, the preverbal subject in SVO clauses in Arabic dialects is not located in Spec,TP, but in a higher position. Following Rizzi & Shlonsky's (2007) account of the subject criterion, let us suppose that the subject in SVO clauses is located in Spec,Subject Position attracted by Subj^0 which does not bear a bundle of *u*ϕ-features. Following this analysis, sentence (10) has the derivation in (11) (the dotted line indicates Agree, whereas the solid line indicates movement).

(10)	*ʔiz-zalameh*	*bāʕ*	*ʔis-sijjārah*
	DEF-man	buy.PERF.3SG.M	DEF-car
	'The man bought the car.'		

(11)



After T^0 enters into an Agree relation with the subject which consequently values its *u*ϕ-features, the subject bearing [SUBJ] feature (which is responsible for establishing a subject-predicate relation; Rizzi & Shlonsky, 2007) enters another Agree relation with $Subj^0$ upon the merger of the latter. The subject consequently moves to Spec,Subject Phrase. The movement of the thematic subject to Spec,SubjP takes place because $Subj^0$ does not bear a bundle of *u*ϕ-features, and Arabic dialects do not have morphological case.[10]

Another challenge that faces our account as pointed out by an anonymous reviewer comes from the fact that the verb does not bear an ϕ-affix of the object although they enter into an Agree relation. This challenges concerns the verb-object Agree in Arabic dialects not in SA. That is because in SA the object bears a morphological case (i.e. accusative case) that records this Agree, as shown in the following example:

(12)	*kataba*	*Zayd-un*	*ʔal-risālat-a*
	wrote.3SG.MAS	Zayd-NOM	the-letter-ACC
	'Zayd wrote the letter.'		

On the other hand, it is expected that the verb bears a ϕ-affix of the object in Arabic dialects. This expectation is in fact borne out in some dialects where the verb always bears a ϕ-affix that displays the ϕ-content of the object, as in the following example from Omani Arabic (Al-Balushi, 2018):

(13)	*katb-in-ha*	*l-banāt*	*r-rəsālah*
	write.PST-3.PL.F-3.SG.F	DEF-girls.NOM	DEF-letter.F
	'The girls wrote the letter.'		

Under our proposal, the ϕ-affix on the verb records the Agree relation between the verb and object in Omani Arabic. However this is manifested in most other dialects such as JA, as shown in the following example:

(14)	*zēd*	*katab(*-ha)*	*ʔil-risāle*
	Zayd	wrote.3SG.MAS-3SG.FM	the-letter
	'Zayd wrote the letter.'		

Although this poses a complication against our theory, one way to go around this complication is to suggest that the Agree relation between the verb and the object in JA is recorded through the movement of the object to Spec,VP. This movement is adopted in Chomsky (2007, p. 21). Such a movement is nonetheless masked by the movement of V^0 to v^0 in the narrow syntax, a matter that yields the position of the object to the right of the verb. One prediction of this analysis is that V^0 in JA, unlike the case in Omani Arabic, does not bear *u*ϕ-features, hence the movement of the object to Spec,VP in JA. In order to attest this movement, there should be some evidence that the object in JA occupies a higher structural position than that in OA and SA, a task we leave it open for further research. Note that our account of JA in such cases does not demand that the pronominal clitics on the verb are regarded as ϕ-affixes; they can be bound pronouns that are attached to the verb when linearization takes place.

Another challenge pointed to us by an anonymous reviewer is the fact that in PPs and possessors in nominals in dialects, the preposition nor the possessor bears a ϕ-affix of the object or the possessum although dialects do not make use of morphological case (and in fact there is no evidence for the movement of the goal in such structures). The following examples are from JA:

(15) a. *ʕala* *ʔil-kursi*
on DEF-chair
'On the chair'

b. *qalam* *ʔil-binit*
pen DEF-girl
'The girl's pen'

The presence of the Agree relations in such constructions is supported by the fact that the object of the preposition or the possessum are case-marked when they occur as bound pronouns, as shown in the following examples:

(16) a.*ʕalē-h*
on-it
'On it'

b. *qalam-ha*
pen-her
'Her pen'

Any suggestion that there is no Agree relation in such constructions, as an anonymous reviewer reports, raises problems given the presence of case-marked pronouns on the position of the object and the possessum.

Our proposal in such cases is that the ACR is not operating in such constructions because of the presence of Genitive case. In other words, Genitive cases bleeds the effects of the ACR. The reason for this bleeding is that the Genitive case assignment requires strict adjacency. The goal and probe should be adjacent, something that can be interpreted at PF as the two elements enter strong Agree relation (i.e., head-complement) that requires strict adjacency. In all cases of Agree discussed in this paper, the probe and goal should not be adjacent unless movement option is triggered. As we have shown above, movement is triggered when morphological case and ϕ-agreement fail to record the Agree dependency. Recourse is made then to movement that creates a very local relation between the probe and the goal. When Genitive case is assigned, such a local relation is obtained and never broken; hence there exists no need to activate the ACR.[11]

6. Conclusion

In this paper, we have discussed some interactions of morphological case, ϕ-agreement and overt movement in the Arabic clause structure. We have essentially argued that the presence of morphological case bleeds the presence of ϕ-agreement on the surface. Likewise, the presence of ϕ-agreement is found to block overt movement from taking place. Morphological case, ϕ-agreement, and overt movement serve to carry out

the same function, i.e., to record Agree dependencies at the interface of the PF. 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 in the SA grammar, 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 $Subj^0$. This attraction is enforced because $Subj^0$ does not bear a bundle of *u*ϕ-features nor can it assign morphological case, hence movement is triggered as a last resort.

Although this paper provides evidence, as we claim, in favor of systematic 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 ACR effects, if any.

Acknowledgements:

I am very grateful to the audience of the 34rd Annual Symposium on Arabic Linguistics that was held at University of Arizona, for their significant input. Additionally, I am extremely grateful to two anonymous reviewers for their invaluable extensive comments and remarks that considerably enhanced the overall quality of the paper. All remaining errors and shortcomings are mine.

References

Al-Balushi, R. (2018). The Relationship between Agreement and Morphological Case: Evidence from Arabic. *Concentric: Studies in Linguistics*, 44, 69–109.

Alshamari, M. (2017). *Topic particles in the North Hail dialect of Najdi Arabic.* Diss. Newcastle University.

Ahmed, H. (2015). *Verbal complementizers in Arabic*. Diss. The University of Utah.

Aoun, J., Benmamoun, E., & Choueiri, L. (2010). *The syntax of Arabic*. Cambridge: Cambridge University Press.

Baker, M. (2008). *The syntax of agreement and concord*. Cambridge University Press.

Baker, M. (2012). On the relationship of object agreement and accusative case: evidence from Amharic. *Linguistic Inquiry*, 43, 255–274.

Baker, M. (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*. Diss. University of Toronto.

Benmamoun, E. (2000). *The feature structure of functional categories: a comparative study of Arabic dialects*. Oxford: Oxford University Press.

Berwick, R., & Chomsky, N. (2011). The biolinguistic program: The current state of its development. In D. Sciullo, A., & C. Boeckx (eds.), *The Biolinguistic Enterprise: New Perspectives on the Evolution and Nature of the Human Language Faculty* (pp. 19–41). Oxford University Press.

Cecchetto, C., & Oniga, R. (2004). A challenge to null case theory. *Linguistic Inquiry*, 351, 141–149.

Chomsky, N. (2001). Derivation by phase. In M. Kenstowicz (ed.), *Ken Hale. A Life in Language* (pp. 1–52). Cambridge: MIT Press.

Chomsky, N. (2007). Approaching UG from below. In M. Gärtner, & U. Sauerland (eds.), *Interfaces+ recursion= language? Chomsky's minimalism and the view from syntax-semantics* (pp. 1–29). De Gruyter Mouton.

Coon, J., & Parker, C. (2019). Case interactions in syntax. In *Oxford research encyclopedia of linguistics*. Oxford University Press. https://doi.org/10.1093/acrefore/9780199384655.013.315.

Davies, W. (2005). Madurese Prolepsis and Its Implications for a Typology of Raising. *Language*, 81, 645–665.

Fassi Fehri, A. (1993). *Issues in the Structure of Arabic Clauses and Words*. Kluwer, Dordrecht.

Frascarelli, M., & Hinterhölzl. R. (2007). Types of Topics in German and Italian. In S. Winkler, & K. Schwabe (eds.), *On Information Structure, Meaning and Form*. (pp. 87-116). Amsterdam: John Benjamins.

Fuß, E. (2005). *The rise of agreement: A formal approach to the syntax and grammaticalization of verbal inflection*. Amsterdam: John Benjamins.

Heck, F., & Müller, M. (2007). Extremely local optimization. In *Proceedings of WECOL*, 26, 170–183.

Holmberg, A., & Hróarsdóttir, T. (2003). Agreement and movement in Icelandic raising constructions. *Lingua*, 113, 997–1019.

Jarrah, M. (2019). Record your Agree: A case study of the Arabic complementizer *ʔinn*. *Journal of Linguistics*, 55, 83–122.

Jarrah, M., & Abusalim, N. (2020). In favour of the low IP area in the Arabic clause structure. *Natural Language & Linguistic Theory*. [FIRST VIEW]

Landau, I. (2006). Severing the distribution of PRO from case. *Syntax*, 9, 153–170.

Markman, V. (2005). *The syntax of case and agreement: its relationship to morphology and argument structure*. Diss. Rutgers University.

Miyagawa, S. (2009). *Why agree? Why move?: Unifying agreement-based and discourse-configurational languages*. MIT Press.

Mohammad, M. (1988). Nominative Case, I-subjects and Subject-verb Agreement. In D. Brentari, G. Larson, & L. MacLeod (eds.), *Proceedings of CLS Parasession on Agreement and Grammatical Theory* (pp. 223–235). Chicago: CLS.

Mohammad, M. (2000). *Word order, agreement, and pronominalization in Standard and Palestinian Arabic* (Vol. 181). Amsterdam: John Benjamins.

Müller, G. (2010). On deriving CED effects from the PIC. *Linguistic Inquiry*, 41, 35–82.

Mukherji, N. (2003). Is C HL linguistically specific? *Philosophical Psychology*, 16, 289–308.

Ouhalla, J. (1994). Verb Movement and Word Order in Arabic. In D. Lightfoot, & N. Hornstein (eds.), *Verb Movement* (pp. 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* (pp. 9–45). Amsterdam: John Benjamins.

Owens, J., & Elgibali, A. (eds.) (2013). *Information structure in spoken Arabic*. Routledge.

Parkinson, D. (1981). VSO to SVO in Modern Standard Arabic: A study in diglossia syntax. *al-'Arabiyya*, 14, 24–37.

Peled, Y. (2008). *Sentence types and word-order patterns in written Arabic: Medieval and modern perspectives*. Brill.

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* (pp. 281–337). Dordrecht: Kluwer Academic Publishers.

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* (pp. 115–160). Berlin: Mouton de Gruyter.

Ryding, K. C. (2005). *A reference grammar of modern standard Arabic*. Cambridge University Press.

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*. Diss. University of Pennsylvania.

Soltan, U. (2007). *On Formal Feature Licensing in Minimalism: Aspects of Standard Arabic Morphosyntax*. Diss. 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. In C. Boeckx (ed.), *Agreement systems* (pp. 267–298). John Benjamins Publishing.

[1] I use the following abbreviations: 1, 2, 3 = first, second, third person; ACC = accusative; C/COMP = complementizer; DEF = definite; DUAL = dual; F/FM/FEM = feminine; GEN = genitive; PERF = perfective; M/MAS = masculine; NOM = nominative; PASS = passive; PL = plural; PRT/PCL= particle; PST = past; SG = singular.

[2] C_{HL} is part of the faculty of language which integrates "lexical information to form linguistic expressions at the interfaces where language interacts with other cognitive systems" (Mukherji, 2003, p. 298).

[3] The notion that *ʔinna* (and *ʔanna*) are complementizers is widely adopted in the Arabic generative literature (Ryding, 2005; Soltan, 2007; Aoun et al., 2010, Ch. 2). The complementizer *ʔinna* marks the accompanying clause as indicative. It cannot mark interrogative or imperative clauses. Hence, it identifies the force of its accompanying clause, meeting Rizzi's (1997) definition of force complementizers. Additionally, *ʔinna* in SA can start a main clause under the same conditions (it cannot start a question or an imperative clause) (see Ahmed, 2015 for discussion).

[4] As mentioned in several reference books on Arabic (e.g., Ryding, 2005), the complementizer *ʔinna (*and *ʔanna)* can be attached to the so-called *dˤamiiru ʔaʃ-ʃaʔin* translated as 'the pronoun of the fact' (Ryding, 2005, p. 424). This pronoun is used as a generic buffer pronoun that appears between the complementizer and the following clause, as shown in the following SA example:

(i) *ʔakkada* *ʔal-waziir-u* *ʔanna-hu* *lā*
confirm.PST.3SG.M DEF-minister-NOM COMP-3SG.M not
tudʒadu *xilafāt-un* *bajna* *ʔad-dawlat-ajn*
exist.3SG.F disagreements-NOM between DEF-two.country-DUAL.GEN
'The minister confirmed that there are no disagreements between the two countries.'

The presence of this pronoun on *ʔanna* alleviates the restriction on the occurrence of a DP after the complementizer which can be followed by a verbal element as shown in (i). This pronoun appears to absorb the accusative case of *ʔanna*.

[5] Following Shlonsky (1997), Jarrah (2019) treats the bound forms on C^0 as agreement inflections not as morphological realizations of the pro itself, as proposed in traditional Arabic grammar (see Mohammad 2000). It is worth noting that Mohammad (2000) claims that the bound forms on C^0 are weak pronouns given that pros in Arabic do not tolerate accusative case assignment. However, such a claim is challenged by cross-

linguistic evidence which shows that accusative case does not demand the realization of pros.

[6] 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, the agreeing particle *tara* marks the so-called contrastive topics, while *tigil* marks familiar topics, assuming topics typology of Frascarelli and Hinterhölzl (2007). This functional typology of topic particles is irrelevant to the ϕ-agreement and movement interactions discussed in this paper.

[7] An anonymous reviewer wonders why *ʁedi* agrees with the subject if the ACR is met through movement. This looks like a case where a subject is marked by both agreement and movement. Note here that the movement of the subject to Spec,Topic Phrase headed by *ʁedi* is triggered to resolve the minimality problem that faces the movement of the object to Spec,Topic Phrase headed by *ʁedi* not because of Agree; therefore, we propose that the ACR does not demand the deletion of the ϕ-affix of the subject on *ʁedi*.

[8] The ACR effects can also account for other phenomena in SA including the lack of the movement of contrastively focused elements when in *ʔinna*-clauses. Ouhalla (1997) provides evidence that when the head of Focus Phrase is realized in SA, 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 ACR effect 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, the ACR can be satisfied by other PF effects including intonation and pitch accents. We leave this for further research.

[9] Our statement that SA is predominately a VSO languages does not presuppose that other word order patterns (e.g., SVO, VSO, VOS, etc.) are not possible. Related literature shows that these word order patterns are used but to a lower extent with a distinct

pragmatic and informational value for each (see Mohammad, 2000; Peled, 2008). The same applies to Arabic dialects (see the papers in Owens & Elgibali, 2013; see also Jarrah & Abusalim, 2020 for corpus-based study of word order patterns in JA).

[10] Another suggestion to account for the position of the subject in SVO clauses in Arabic dialects is that the subject is base-generated in the CP-domain as a topic while Spec,vP is filled with a pro. Although this suggestion resolves the problems facing the ACR, it runs counter to many studies (Parkinson, 1981; Fassi Fehri, 1993; Mohammad, 2000; Benmamoun, 2000; Jarrah & Abu Salem, 2020) that have proposed that the position of the subject in SVO clauses is derived in the sense that the subject is located is Spec,vP and then moves upstairs.

[11] Another possible challenge against ACR effects comes from the derivation of ECM constructions in SA 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, p. 137).