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RESEARCH ARTICLE

On the licensing of complementizer agreement with nominals in the left periphery

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Abstract
This research article examines the licensing of complementizer agreement with nominals (namely thematic subjects and objects) in the left periphery, focusing on data from Jordanian Arabic (JA). It demonstrates that obligatory complementizer agreement with A-bar elements is evident in JA grammar due to the effects of the Agree Identification Condition, which enforces an agreement inflection on the probe when the goal is not phonologically overt (e.g., a pro). This enforcement also applies when the probe agrees with a chain consisting of two silent links (e.g., when the complementizer agrees with a wh- or a focused element). This finding supports the proposal that the morphological realization of Agree dependencies is ruled by interface conditions, which are also proven to be responsible for the presence of an obligatorily overt complementizer when extraction of the embedded nominal takes place.

1. Introduction

Wh-movement, focus fronting, and topicalization are posited to involve some feature-checking relation between a head, whether it be an interrogative complementizer (C_Q), a focus head, or a topic head, and an element that typically moves to the specifier (Spec) positions of the projections of such respective heads (Chomsky 1977, 1986, 1993, 1995, 2015; Cinque 1981; Cheng 1997; Ouhalla 1997; Rizzi 1997, 2001, 2004). Although relevant research has explored the syntax of constructions involving A'-movement, the incremental derivation of these constructions has received less attention (Bošković 2007; Chomsky 2000, 2001; Nunes 2021, 2022). For instance, one challenging aspect of constructions involving A'-movement relates to the restrictions that are placed on the extraction of embedded wh-subjects (Nunes 2021, 2022). For example, when the subject wh-word is extracted in English, the embedded complementizer must not be used. This particular issue can be illustrated with the following English example:

(1) Which boys did you say (*that) slept early?

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The extraction of the embedded wh-subject *which boys* in (1) is permissible when the complementizer (C^0) of the embedded clause *that* is not overt. Interestingly, in Jordanian Arabic (JA), wh-subject extraction exhibits a markedly distinct behavior in similar constructions – the complementizer (C^0) of the embedded clause (*ʔinn*) must be overt with full agreement morphology. Before presenting supporting examples, it is important to emphasize that C^0s in embedded declarative clauses may be null or overt in JA, as illustrated in (2a, b). If the C^0 is overt, however, it must show full agreement with the embedded nominal, typically the subject, as shown in (2a, c, d).[1,2]

(2) (a) gult ʔinn-**hum** li-wla:d ra:ħu ʕa-s-su:g.
said.1P.SG COMP-3P.M.PL the-boys went.3P.M.PL to-the-market
'I said that the boys went to the market.'

(b) gult li-wla:d ra:ħu ʕa-s-su:g.
said.1P.SG the-boys went.3P.M.PL to-the-market
'I said the boys went to the market.'

(c) *gult ʔinn-**uh** li-wla:d ra:ħu ʕa-s-su:g.
said.1P.SG COMP-3P.M.SG the-boys went.3P.M.PL to-the-market
Intended: 'I said that the boys went to the market.'

(d) *gult ʔinn li-wla:d ra:ħu ʕa-s-su:g.
said.1P.SG COMP the-boys went.3P.M.PL to-the-market
Intended: 'I said that the boys went to the market.'

Importantly, the lack of full agreement on the C^0 *ʔinn* in JA results in ill-formedness, as seen in (2c, d).[3] In Modern Standard Arabic, in comparison, the C^0 *ʔinna* may be null or overt but does not show any form of agreement morphology, as in (3).[4]

[1] The glossing abbreviations used in this article include the following: 2P = second person, 3P = third person, ACC = accusative, AP = applicative, AUX = auxiliary, COMP = complementizer, F = feminine, FV = final vowel, 1P = first person, FUT = future, GEN = genitive, M = masculine, NOM = nominative, PASS = passive, PAST = past, PL = plural, Q = question, SG = singular.

[2] It must be noted that this study is limited to examining instances where the embedded complementizer exhibits full agreement with the nearest embedded nominal. For some speakers, however, the suffix attached to *ʔinn*, according to Jarrah (2020), may surface in the third-person masculine singular form, which is the default agreement morphology, so (2c) is grammatical for these speakers. This variation may indicate that *ʔinn* has lost its ability to function as a probe in these cases, resulting in the default agreement form [3P.M.SG]. Ryding (2005) refers to a comparable construction in Modern Standard Arabic as a 'generic buffer pronoun', which does not reflect the features of the embedded subject. In this study, we focus on the more prevalent pattern observed in JA, particularly in the rural northern parts of Jordan, where the inflectional morphology on *ʔinn* exhibits full agreement with the closest nominal.

[3] The argument that the pronominal-like clitics affixed to *ʔinn* in JA as in (2a) are a manifestation of agreement inflection is already supported in the Arabic linguistics literature (see Jarrah 2019, 2020; Jarrah, Al-Deaibes & Hammouri 2024; Shlonsky 1997). One piece of evidence in favor of this argument comes from the fact that if the clitic *-hum* in (2a) is a pronoun rather than an agreement inflection, this would violate Principle C of the binding theory (Chomsky 1981, 1986, 1995), for *-hum* should be expected to bind the R(eferring) expression *li-wla:d* 'the boys', contrary to fact.

[4] It is worth noting that the default agreement on *ʔinna* is possible in Modern Standard Arabic only when the embedded clause has a verb-subject-(object) word order (for details, see Mohammad 2000).

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(3) (a) qult-u ʔinna l-ʔawla:d-a ðahab-u: ʔila: s-su:q-i.
said-1P.SG COMP the-boys-ACC went-3P.M.PL to the-market-GEN
'I said that the boys went to the market.'

(b) qult-u l-ʔawla:d-u ðahab-u: ʔila: s-su:q-i.
said-1P.SG the-boys-NOM went-3P.M.PL to the-market-GEN
'I said that the boys went to the market.'

(c) *qult-u ʔinna-hum l-ʔawla:d-a ðahab-u: ʔila: s-su:q-i.
said-1P.SG COMP–3P.M.PL the-boys-ACC went-3P.M.PL to the-market-GEN
Intended: 'I said that the boys went to the market.'

If *ʔinna* is overt, as in (3a), it assigns accusative Case to the subject, but if it is null, as in (3b), the subject receives nominative Case (for more discussion on the distinction between JA and Modern Standard Arabic in this regard, see Jarrah 2019, 2020).

As far as wh-subject extraction in JA is concerned, the C^0 of the embedded clause (*ʔinn*) must be overt and show full agreement morphology. The following JA question illustrates this point.[5]

(4) **ʔaj wla:d** fakkart/gult *(ʔinn-hum) ra:ħu ʕa-s-su:g?
which boys thought/said.2P.M.SG COMP-3P.M.PL went.3P.M.PL to-the-market
'Which boys did you think/say went to the market?'

Notice also that the embedded C^0 *ʔinn* must bear an inflectional suffix that copies the phi-features (φ-content) of the extracted subject; otherwise, the resulting sentence would be ungrammatical, whether the embedded C^0 *ʔinn* bears a suffix with a default φ-content (third-person masculine singular) or zero agreement morphology, as evidenced by the following examples:[6]

(5) (a) ***ʔaj wla:d** fakkart/gult ʔinn-**uh** ra:ħu
which boys thought/said.2P.M.SG COMP-3P.M.SG went.3P.M.PL
ʕa-s-su:g?
to-the-market
Intended: 'Which boys did you think/say went to the market?'

(b) ***ʔaj wla:d** fakkart/gult ʔinn ra:ħu ʕa-s-su:g?
which boys thought/said.2P.M.SG COMP went.3P.M.PL to-the-market
Intended: 'Which boys did you think/say went to the market?'

Therefore, subject extraction in JA is allowed when the C^0 *ʔinn* fully and overtly agrees with the extracted wh-phrase.

A similar behavior of complementizer agreement is manifested in constructions with topicalization. The C^0 *ʔinn* must be overt and fully agree with the subject of the embedded clause, as shown in the examples in (6).

[5] The data cited in this study, which are based on the authors' intuitions, were approved by 11 JA speakers, all of whom are based in the northern regions of Jordan.

[6] Note that when the subject in (5) is a third, masculine, singular entity, the respective sentence becomes grammatical.

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(6) (a) **li-wla:d** fakkart/gult *(ʔinn-**hum**) ra:ħu ʕa-s-su:g.
the-boys thought/said.1P.SG COMP-3P.M.PL went.3P.M.PL to-the-market
'The boys, I thought/said that they went to the market.'

(b) ***li-wla:d** fakkart/gult ʔinn-**uh** ra:ħu ʕa-s-su:g.
the-boys thought/said.1P.SG COMP-3P.M.SG went.3P.M.PL to-the-market
Intended: 'The boys, I thought/said that they went to the market.'

(c) ***li-wla:d** fakkart/gult ʔinn ra:ħu ʕa-s-su:g.
the-boys thought/said.1P.SG COMP went.3P.M.PL to-the-market
Intended: 'The boys, I thought/said that they went to the market.'

Interestingly, the C^0 *ʔinn* is found to agree with the closest goal that is typically the subject but can be the object if there is no intervening subject, as seen below.

(7) **ʔaj wla:d** fakkart/gult ʔinn-**hum** ʔinsaragu?
which boys thought/said.2P.M.SG COMP-3P.M.PL robbed.PASS.3P.M.PL
'Which boys did you think/say were robbed?'

This also applies to constructions with focused or topicalized dislocated objects, as we will show later.[7] In Section 3, we offer a unified account of the JA data provided above, appealing specifically to Chomsky's (1993) copy theory of movement as well as Jarrah, Al-Deaibes & Hammouri's (2024: 254) Agree Identification Condition (AIC) 'which requires a phonologically null goal to be φ-identified through a co-varying φ-inflection on its probe'. We assume that the obligatorily overt C^0 *ʔinn* establishes an Agree dependency with an unpronounced copy of the extracted element in the CP area in sentences that involve wh-movement and focus fronting and with a silent pronoun (pro) in sentences that contain topicalized dislocated elements. Moreover, we will shed light on how our findings compare to related phenomena in typologically diverse languages.

The organization of the paper proceeds as follows. Section 2 provides an overview of the literature on (long-distance) A'-movement, focusing on the derivation of this type of movement. Section 3 discusses the licensing of complementizer agreement with nominals in the left periphery in JA. We show that JA grammar exhibits obligatory complementizer agreement with A-bar elements due to the AIC (Jarrah, Al-Deaibes & Hammouri's 2024). This condition requires the probe to bear an agreement inflection when the goal is phonologically null or when the probe agrees with a chain involving two silent links, such as when the complementizer agrees with a wh-subject or focused subject. Section 4 sheds light on how our findings align with or diverge from related patterns observed across typologically diverse languages. Finally, Section 5 concludes the paper, adding support to the view that the morphological expression of Agree relations is dictated by interface conditions, which are

[7] A reviewer asked if the complementizer agreement with nominals is at all affected by the type of verbs chosen, e.g., factive versus non-factive verbs. Such agreement is indifferent to the type of selecting verbs, as demonstrated in (i).

(i) **ʔaj wla:d** eʃrift/ʃakke:t *(ʔinn-hum) ra:ħu ʕa-s-su:g?
which boys knew/suspected.2P.M.SG COMP-3P.M.PL went.3P.M.PL to-the-market
'Which boys did you know/suspect they went to the market?'

Observe that the embedded C^0 in (i) must be overt and fully agree with the extracted subject, irrespective of the type of the matrix verb.

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also shown to necessitate an overt complementizer in cases where the embedded element (typically the subject) is extracted.

2. Setting the stage

Chomsky (2000, 2001) offered an account of long-distance A'-movement within the framework of the phase theory. An interrogative C_Q head of an embedded clause, as in (8) below, cannot directly attract an object wh-phrase to its Spec position, as illustrated in (8b), due to the blocking effect triggered by the presence of the head of the lower phase, i.e., v^0, giving rise to a fatal violation of the so-called Phase Impenetrability Condition (PIC), which is provided in (9).

(8) (a) We wonder what Tom planted.

(b) We wonder [$_{CP}$ C_Q [$_{vP}$ Tom v planted what]].

***Attract**

(9) (a) [$_{ZP}$ Z … [$_{HP}$ α [H YP]]]

(b) Phase Impenetrability Condition (PIC):
The domain of H is not accessible to operations at ZP; only H and its edge (α) are accessible to such operations.
(Chomsky 2001: 14)

Therefore, the wh-phrase *what* should first move to the specifier of the verb phrase (Spec, vP), where *what* becomes accessible to C_Q, as represented in (10).

(10) We wonder [$_{CP}$ Q [$_{vP}$ Tom [$_{v'}$ what v planted ~~what~~]]].

✓Attract

The intermediate derivation in (10) is possible, under Chomsky's (2001) view, because the phase head (v^0) can be optionally assigned an EPP-type feature that allows *what* to move to its outer Spec position (Spec,vP), leaving a copy behind in its thematic position (Chomsky 1993). Such an EPP-feature assignment is permitted only when it is necessary for producing the optimal outcome, as schematized in (11).

(11) We wonder [$_{CP}$ **what** $Q_{✓EPP}$ [$_{vP}$ Tom [$_{v'}$ ~~**what**~~ $v_{✓EPP}$ planted ~~**what**~~]]].

Once *what* lands in Spec,CP of the embedded clause through successive-cyclic A'--movement, and the EPP-feature on the phase heads (C^0 and v^0) is checked, as in (11), the computation converges at the interface levels of the Phonological Form (PF) and Logical Form (LF).

Although Chomsky's model provides an invaluable insight into the intermediate steps of A'-movement, it invokes lookahead computations (Bošković 2007, Nunes 2021). To clarify

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this point, consider the following data and representations in (12) and (13), both from Nunes (2021: 4).

(12) (a) **What** did John say that Peter thinks that Mary bought?
(b) *Who said that Peter thinks that Mary **what** bought?
(c) Who said that Peter thinks that Mary bought **what**?

(13) (a) [$_{vP}$Mary v_{EPP} bought what]
(b) K = [$_{vP}$ v say [$_{CP}$ that … [$_{vP}$ v think [$_{CP}$ that … [$_{vP}$ what [… v_{EPP} bought ~~what~~]]]]]]

According to Nunes, the EPP-assignment of the lowest v^0, as in (13a), leads to convergence in instances like (12a) but not in instances like (12c), for this causes the derivation to crash at both PF and LF, as indicated in (12b). Nonetheless, the necessity of the EPP-assignment in (13a) may be determined only upon the merger of the heads of higher phases, namely, after the structure of (13b) has been constructed. In other words, the EPP-assignment in (13a) produces a convergent structure if the configuration of K in (13b) merges with elements like *John* as in (12a), but not with ones like *who* as in (12b). This goes against the tenets of the PIC and, also, violates Chomsky's (1995: 225) Inclusiveness Condition, which necessitates that the output must not contain anything that is not part of its input, i.e., the properties of the lexical items.

Bošković (2007) attempted to overcome this issue in Chomsky's (2001) analysis, proposing that in languages that involve wh-movement it is the wh-element, rather than the phase head, that hosts a probing uninterpretable feature [*u*F]. As a result, the wh-element must move successive-cyclically to Spec,CP, so its [*u*F] feature is checked against the [*u*F] of the interrogative C_Q. This way, there exists no violation of the Inclusiveness Condition because the [*u*F] is technically a part of the lexical properties of the wh-word. Additionally, instances with partial movement of wh-elements, as in (12b), can be safely eliminated on the ground that the [*u*F] on *what* is not checked, a matter that causes the derivation to crash.

Although Bošković's (2007) approach to wh-movement is more compatible with the effects of the PIC, it, according to Nunes (2021, 2022), appears to fall short of explaining *that*-trace effects involved in constructions like (14).

(14) Who did Tom believe (*that) robbed the store?

Under Bošković's (2007) view, the structure in (14), drawing on Chomsky (2000), should converge if *who* is specified for [*u*F], irrespective of whether the embedded C^0 head *that* is present or absent, contrary to fact.

Nunes (2021, 2022), drawing on Bošković's (2007) and Chomsky's (2001) models as well as his earlier work (Nunes 2014, 2016), adopts a middle-ground approach, allowing an edge feature (EF = an alternative of EPP) to be optionally encoded on either the phase head or the moving wh-element, which is subject to parametric variation. On the one hand, the EF is optionally part of the lexical specification of wh-words in languages permitting wh-in-situ questions, such as Brazilian Portuguese, where the wh-element bearing the EF must successive-cyclically move to its targeted Spec,CP position but remains in situ otherwise. On the other hand, the EF is optionally encoded on strong phase heads in English-type languages that do not permit wh-words to remain in situ except for constructions with

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multiple or echo wh-questions. Centering on English-type languages, Nunes argues that a phase head, entering the computation with a lexically specified EF, assigns that EF to a wh-element, as represented in (15) from Nunes (2021: 8).

(15) (a) $[Ph_{[EF]} \ldots wh] \rightarrow$ EF assignment
(b) $[Ph \ldots wh_{[EF]}]$

When a wh-word is assigned an EF by a phase head, as in (15), it inherits that feature. The lexical features of the assigner and the assignee undergo some sort of a rearrangement, which in turn should feed the computation without violating the Inclusiveness Condition. After the wh-word gets the EF, it is then required to move to a position, where it can license its EF, the *u*F in the sense of Bošković (2007); otherwise, the derivation is doomed to crash. Additionally, Nunes' proposal that strong phase heads are only optionally specified for an EF can account for the (un-)grammaticality of constructions with either a covert or an overt C^0 head such as (14) above. Under this view, the EF is not specified on the overt *that* in wh-constructions involving wh-subject extraction, as shown in (16).

(16) *Who did Tom believe $that_{[NO\ EF]}$ robbed the store?

Since *that* lacks the EF to begin with, it does not assign it to *who*, and therefore bans *who* from moving to its edge, which explains the crashing fate of (16). As Nunes points out, this is based on the reasoning that a strong phase head allows a wh-word to move through its edge only if the head assigns an EF to the wh-word. By contrast, the EF is optionally specified on null Cs (∅), and consequently wh-questions, such as (17) converge at the PF-LF interface because the wh-subject after receiving the EF from the embedded null C^0 must move up crossing the edge of that C^0.

(17) Who did Tom believe $C_{\varnothing[EF]}$ robbed the store?

Nunes (2021) has also extended his approach to account for A'-movement in Irish. Consider the following examples.

(18) an t-ainm a hinnseadh dúinn a bhí ar an áit
the name aL was.told to.us aL was on the place
'the name that we were told was on the place.'
(McCloskey 2002: 190; Nunes 2021: 23)

(19) rud a gheall tú a dhéanfá
thing aL promised you aL do
'something that you promised you would do'
(McCloskey 2001: 68; Nunes 2021: 24)

Nunes argues that the lower C^0 *aL* in (18) carries a valued EF [EF:val] but the higher C^0 in (18) and both C^0 heads in (19) bear an uninterpretable EF [EF:u]. In any case, for the C^0 to be able to lexically license A'-movement via its edge, it must overtly appear as *aL* and be specified for an EF whether inherently valued or not. It is reported that *aL* bears [EF:val] in unmarked situations but [EF:u] in marked situations. To justify the licensing of A'--movement via the edge of a phase head with [EF:u] like $aL_{[EF:u]}$, Nunes (2021: 23) proposes

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that 'a language will only formally specify that a phase head permits movement through its Spec if other phase heads of the same type do not'. In other words, a language resorts to this strategy only when other options are unavailable.

Although this approach advanced by Nunes (2021, 2022) circumvents some issues of A'-movement in languages like English and Irish, it falls short of explaining relevant JA data presented in the previous subsection for two major reasons. Firstly, a wh-element, according to Nunes, is assigned an EF only once by the closest strong phase head, in accordance with the PIC, which in turn gives it a passing ticket to successive-cyclically move up crossing the edges of higher phase heads. This approach works well for English, as we can see in (20) from Nunes (2021: 11).

(20) Who do you think **$C_{\varnothing}$/that** Peter said **$C_{\varnothing}$/*that** saw Mary?

Given that null Cs, under Nunes' view, bear an EF but the overt *that* does not, once the extracted *who* in (20) receives an EF from the lower $C_{\varnothing}$, it becomes indifferent to the type of C^0 it passes across because it already has the license to move to the matrix Spec,CP. Such a line of reasoning, nonetheless, fails to apply to JA data; see (21).

(21) (a) ʔaj bana:t_1 fakkart ʔinn-hin$_1$ ga:lin ʔinn-hin$_1$
which girls thought.2P.M.SG COMP-3P.F.PL said.3P.F.SG COMP-3P.F.PL
ra:ħen ʕa-s-su:gʔ
went.3P.F.PL to-the-market
'Which girls$_1$ did you think that they$_1$ said that they$_1$ went to the market?'

(b) *ʔaj bana:t_1 fakkart ʔinn-uh ga:lin ʔinn-hin$_1$
which girls thought.2P.M.SG COMP-3P.M.SG said.3P.F.SG COMP-3P.F.PL
ra:ħen ʕa-s-su:gʔ
went.3P.F.PL to-the-market
Intended: 'Which girls$_1$ did you think that they$_1$ said that they$_1$ went to the market?'

(c) *ʔaj bana:t_1 fakkart ʔinn-hin$_1$ ga:lin ʔinn-uh
which girls thought.2P.M.SG COMP-3P.F.PL said.3P.F.SG COMP-3P.M.SG
ra:ħen ʕa-s-su:gʔ
went.3P.F.PL to-the-market
Intended: 'Which girls$_1$ did you think that they$_1$ said that they$_1$ went to the market?'

(d) *ʔaj bana:t fakkart ga:lin ra:ħen ʕa-s-su:gʔ
which girls thought.2P.M.SG said.3P.F.SG went.3P.F.PL to-the-market
Intended: 'Which girls$_1$ did you think they$_1$ said they$_1$ went to the market?'

The examples in (21) show that in wh-questions containing two embedded clauses the C^0 head in all of the embedded clauses must be overt and carry φ-features agreeing with the extracted subject, as substantiated by the well-formedness of (21a) versus the ill-formedness of (21b–d). In other words, in JA the extracted wh-phrase seems to be always sensitive to the type of C^0 it crosses in higher phases, unlike what we saw in the English example in (20). A reviewer suggested that the description of JA – namely, that all crossed complementizers

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must bear agreement – closely resembles Nunes' account of Irish complementizer agreement, where C^0 bears an unvalued EF. The overarching idea behind the licensing of A'-movement in JA indeed aligns with that proposed for Irish. The two languages, however, employ different mechanisms to accomplish this task. For instance, JA manifests C^0 agreement with extracted subjects and objects, albeit under distinct conditions, as will be shown later.

Secondly, Nunes' approach primarily focuses on cases involving A'-movement. In JA, however, the appearance of agreeing φ-features on the C^0 *ʔinn* is triggered not only by wh-movement (21) or focus fronting (22) but also by topicalization (23). (Note that focused elements are indicated by capital letters.)

(22) (a) **BANA:T** fakkart ʔinn-**hin** ra:ħen ʕa-s-su:g.
girls thought.1P.SG COMP-3P.F.PL went.3P.F.PL to-the-market
'GIRLS I thought that they went to the market.'[8]

(b) ***BANA:T** fakkart ʔinn-**uh** ra:ħen ʕa-s-su:g.
girls thought.1P.SG COMP-3P.M.SG went.3P.F.PL to-the-market
Intended: 'GIRLS I thought that they went to the market.'

(c) ***BANA:T** fakkart ra:ħen ʕa-s-su:g.
girls thought.1P.SG went.3P.F.PL to-the-market
Intended: 'GIRLS I thought went to the market.'

(23) (a) **el-bana:t** fakkart ʔinn-**hin** ra:ħen ʕa-s-su:g.
the-girls thought.1P.SG COMP-3P.F.PL went.3P.F.PL to-the-market
'The girls, I thought that they went to the market.'

(b) ***el-bana:t** fakkart ʔinn-**uh** ra:ħen ʕa-s-su:g.
the-girls thought.1P.SG COMP-3P.M.SG went.3P.F.PL to-the-market
Intended: 'The girls, I thought that they went to the market.'

(c) ***el-bana:t** fakkart ra:ħen ʕa-s-su:g.
the-girls thought.1P.SG went.3P.F.PL to-the-market
Intended: 'The girls, I thought, went to the market.'

The agreement between the C^0 and the focused element is also borne out in multiple embedded sentences, as illustrated in (24).

(24) (a) **BANA:T$_1$** fakkart ʔinn-**hin$_1$** ga:len
girls thought.1P.SG COMP-3P.F.PL said.3P.F.PL
ʔinn-**hin$_1$** ra:ħen ʕa-s-su:g.
COMP-3P.F.PL went.3P.F.PL to-the-market
'GIRLS$_1$ I thought that they$_1$ said that they$_1$ went to the market.'

(b) ***BANA:T$_1$** fakkart ʔinn-**hin$_1$** ga:len
girls thought.1P.SG COMP-3P.F.PL said.3P.F.PL

[8] We do not assign grammaticality judgments to the English translations.

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ʔinn-**uh** ra:ħen ʕa-s-su:g.
COMP-3P.M.SG went.3P.F.PL to-the-market
Intended: 'GIRLS$_1$ I thought that they$_1$ said that they$_1$ went to the market.'

(c) ***BANA:T$_1$** fakkart ʔinn-**uh** ga:len
girls thought.1P.SG COMP-3P.M.AG said.3P.F.PL
ʔinn-**hin$_1$** ra:ħen ʕa-s-su:g.
COMP-3P.F.PL went.3P.F.PL to-the-market
Intended: 'GIRLS$_1$ I thought that they$_1$ said that they$_1$ went to the market.'

(d) ***BANA:T$_1$** fakkart ga:len ra:ħen ʕa-s-su:g.
girls thought.1P.SG said.3P.F.PL went.3P.F.PL to-the-market
Intended: 'GIRLS$_1$ I thought they$_1$ said they$_1$ went to the market.'

This agreement pattern also holds for the resumptive subject pro associated with topicalized, left-dislocated elements, as in (25).

(25) (a) **el-bana:t$_1$** fakkart ʔinn-**hin$_1$** ga:len
the-girls thought.1P.SG COMP-3P.F.PL said.3P.F.PL
ʔinn-**hin$_1$** ra:ħen ʕa-s-su:g.
COMP-3P.F.PL went.3P.F.PL to-the-market
'The girls$_1$, I thought that they$_1$ said that they$_1$ went to the market.'

(b) ***el-bana:t$_1$** fakkart ʔinn-**hin$_1$** ga:len
the-girls thought.1P.SG COMP-3P.F.PL said.3P.F.PL
ʔinn-**uh** ra:ħen ʕa-s-su:g.
COMP-3P.M.SG went.3P.F.PL to-the-market
Intended: 'The girls$_1$, I thought that they$_1$ said that they$_1$ went to the market.'

(c) ***el-bana:t$_1$** fakkart ʔinn-**uh** ga:len
the-girls thought.1P.SG COMP-3P.M.SG said.3P.F.PL
ʔinn-**hin$_1$** ra:ħen ʕa-s-su:g.
COMP-3P.F.PL went.3P.F.PL to-the-market
Intended: 'The girls$_1$, I thought that they$_1$ said that they$_1$ went to the market.'

(d) ***el-bana:t** fakkart ga:len ra:ħen ʕa-s-su:g.
the-girls thought.1P.SG said.3P.F.PL went.3P.F.PL to-the-market
Intended: 'The girls$_1$, I thought they$_1$ said they$_1$ went to the market.'

Overall, the agreement paradigm in JA is very consistent in constructions involving wh-movement, focus fronting, and topicalization.

As far as Irish is concerned, Nunes has briefly touched on cases where a resumptive pronoun is A'-bound. See example (26).

(26) an ghirseach a-r ghoid na síogaí í
the girl aN-PAST stole the fairies her
'the girl that the fairies stole away'
(McClosky 2001: 67; Nunes 2021: 23)

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Drawing on McClosky (2002), Nunes assumes that the C^0 *aN* carries a traditional EPP feature but not the type of EPP feature that Chomsky (2000) associates with successive-cyclic movement. Additionally, the EPP feature of *aN* is assumed to be checked only by via the external merge of *an ghirseach* 'the girl'. This is so because *na síogaí* 'the fairies' and *í* 'her' already have their Case features valued and thus cannot move up to check the EPP feature of *aN*. In comparison, constructions with topicalization in JA manifest C^0 agreement through distinct mechanisms. Consider (27).

(27) (a) el-bana:t fakkart ʔinn-**hum** li-wla:d ʃa:fu:-hen.
the-girls thought.1P.SG COMP-3P.M.PL the-boys saw-them.3P.F.PL
'The girls$_1$, I thought that the boys saw them$_1$.'

(b) el-bana:t fakkart ʔinn-**hin** ʔinʃa:fen.
the-girls thought.1P.SG COMP-3P.M.PL seen.PASS.3P.F.PL
'The girls$_1$, I thought that they$_1$ were seen.'

In JA, unlike in Irish, the C^0 agrees with the closest goal, the subject in (27a) but the object in (27b). The parallelism of the behavior of *ʔinn* in various types of JA sentences like those observed in (21)–(25) and in (27) calls for a unified analysis. To accomplish this task, we call on Jarrah, Al-Deaibes & Hammouri's (2024) AIC, which requires a probe to bear a φ-inflection of the goal when the goal is not pronounced (in the absence of any overt goal DPs within a phase). Such a condition will be considered in reference to Bošković's (2007), Chomsky's (2000, 2001), and Nunes' (2021, 2022) insights on phases and movement. This will be the focus of Section 3 below.

3. Complementizer agreement with left peripheral nominals in JA

In JA wh-questions involving subject extraction from embedded clauses, the realization of *ʔinn*, along with its affixed agreement morphology, is constrained by syntactic factors, as shown in (28a–c), which we have already seen in (4) and (5).[9]

(28) (a) **ʔaj** **bana:t** fakkart ʔinn-**hin** sa:faren?
which girls thought.2P.M.SG COMP-3P.F.PL traveled.3P.F.PL
'Which girls did you think that they traveled?'

[9] Notice that such complementizer agreement is by no means affected by the presence of modifiers within the goal DP, as demonstrated in (i).

(i) (a) ʔaj bana:t ðakijja:t fakkart ʔinn-hin sa:faren?
which girls smart thought.2P.M.SG COMP-3P.F.PL traveled.3P.F.PL
'Which smart girls did you think that they traveled?'

(b) *ʔaj bana:t ðakijja:t fakkart ʔinn-uh sa:faren?
which girls smart thought.2P.M.SG COMP-3P.M.SG traveled.3P.F.PL
Intended: 'Which smart girls did you think that they traveled?'

(c) *ʔaj bana:t ðakijja:t fakkart sa:faren?
which girls smart thought.2P.M.SG traveled.3P.F.PL.
Intended: 'Which smart girls did you think traveled?'

The same also applies to constructions with focus fronting and topicalized elements.

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(b) *ʔaj bana:t fakkart sa:faren?
which girls thought.2P.M.SG traveled.3P.F.PL
Intended: 'Which girls did you think traveled?'

The C^0 *ʔinn*, as pointed out earlier, must be overt and obligatorily carry agreement morphology whether it is local or non-local to the subject extraction site, as shown in (28) and (29), respectively.

(29) (a) **ʔaj bana:t** fakkart ʔinn-**hin**
which girls thought.2P.M.SG COMP-3P.F.PL
ga:len ʔinn-**hin** sa:faren?
said.3P.F.PL COMP-3P.F.PL traveled.3P.F.PL
'Which girls$_1$ did you think that they$_1$ said that they$_1$ traveled?'

(b) ***ʔaj bana:t** fakkart ga:len ʔinn-**hin** sa:faren?
which girls thought.2P.M.SG said.3P.F.PL COMP-3P.F.PL traveled.3P.F.PL
Intended: 'Which girls$_1$ did you think they$_1$ said that they$_1$ traveled?'

(c) ***ʔaj bana:t** fakkart ʔinn-**hin** ga:len sa:faren?
which girls thought.2P.M.SG COMP-3P.F.PL said.3P.F.PL traveled.3P.F.PL
Intended: 'Which girls$_1$ did you think that they$_1$ said they$_1$ traveled?'

(d) *ʔaj bana:t fakkart ga:len sa:faren?
which girls thought.2P.M.SG said.3P.F.PL traveled.3P.F.PL
Intended: 'Which girls$_1$ did you think they$_1$ said they$_1$ traveled?'

The same paradigm also applies to constructions featuring focus fronting, as shown in the examples in (30) and (31).

(30) (a) **BANA:T** fakkart ʔinn-**hin** sa:faren.
girls thought.1P.M.SG COMP-3P.F.PL traveled.3P.F.PL
'GIRLS I thought that they traveled.'

(b) *BANA:T fakkart sa:faren.
girls thought.1P.M.SG traveled.3P.F.PL
Intended: 'GIRLS, I thought, traveled.'

(31) (a) **BANA:T** fakkart ʔinn-**hin** ga:len
girls thought.1P.M.SG COMP-3P.F.PL said.3P.F.PL
ʔinn-**hin** sa:faren.
COMP-3P.F.PL traveled.3P.F.PL
'GIRLS$_1$ I thought that they$_1$ said that they$_1$ traveled.'

(b) ***BANA:T** fakkart ga:len ʔinn-**hin** sa:faren.
girls thought.1P.M.SG said.3P.F.PL COMP-3P.F.PL traveled.3P.F.PL
Intended: 'GIRLS$_1$ I thought they$_1$ said that they$_1$ traveled.'

(c) ***BANA:T** fakkart ʔinn-**hin** ga:len sa:faren.
girls thought.1P.M.SG COMP-3P.F.PL said.3P.F.PL traveled.3P.F.PL
Intended: 'GIRLS$_1$ I thought that they$_1$ said they$_1$ traveled.'

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(d) *BANA:T fakkart ga:len sa:faren.
girls thought.1P.M.SG said.3P.F.PL traveled.3P.F.PL
Intended: 'GIRLS$_1$ I thought they$_1$ said they$_1$ traveled.'

The interesting question that arises here is why the embedded C^0 must be overt and fully copy the φ-content of the extracted element, as seen in (28)–(31). What is equally puzzling here is the fact that declarative sentences permit a covert complementizer as shown in (32) below, but sentences with extracted subjects do not, as was seen in (28b), (29b–d), (30b), and (31b–d) above.

(32) (a) gult li-wla:d ra:ħu ʕa-s-su:g.
said.1P.SG the-boys went.3P.M.PL to-the-market
'I said the boys went to the market.'

(b) fakkart bana:t sa:faren.
thought.1P.M.SG girls traveled.3P.F.PL
'I thought girls traveled?'

First of all, the JA facts in (28)–(32) cannot be explained under (any of) Bošković's (2007), Chomsky's (2001), and Nunes' (2021, 2022) A'-movement models, as we already mentioned in our discussion in the previous subsection. Alternatively, one may claim, given the systematic agreement pattern observed in (28)–(31), that A'-movement in JA is seemingly possible only when there exists an overt embedded C^0 fully agreeing with the moving element, whether extraction is due to wh-movement or focus fronting. Such a claim is, nonetheless, not warranted either, simply because the agreement paradigm in (28)–(31), as we mentioned earlier, is exactly the same as that found in constructions lacking subject extraction but involving topicalization, as exemplified in (33) and (34).[10]

(33) (a) **el-bana:t** fakkart ʔinn-**hin** sa:faren.
the-girls thought.1P.M.SG COMP-3P.F.PL traveled.3P.F.PL
'The girls, I thought that they traveled.'

[10] We assume that JA topics are externally merged in the left periphery, with a resumptive pronoun in the thematic position, because they do not violate syntactic island constraints, as evidenced in (i).

(i) **el-ħara:mi$_1$** eʃ-ʃurṭah ʔaʕṭat ed-dali:l ʔinn-ha el-bint ʃa:fat-**uh$_1$**.
the-thief the-police gave the-evidence COMP-3P.F.SG the-girl saw.3P.F.SG-him
'The thief$_1$, the police provided evidence that the girl saw him$_1$.'

Cases involving wh-movement or focus fronting, on the other hand, exhibit a different behavior, since they violate syntactic island constraints, as demonstrated in (ii).

(ii) (a) ***ʔaj ħara:mi** eʃ-ʃurṭah ʔaʕṭuat ed-dali:l ʔinn-ha el-bint ʃa:fat.
which thief the-police gave the-evidence COMP-3P.F.SG the-girl saw.3P.F.SG
*'Which thief did the police provide evidence that the girl saw?'

(b) ***ĦARA:MI** eʃ-ʃurṭah ʔaʕṭat ed-dali:l ʔinn-ha el-bint ʃa:fat.
thief the-police gave the-evidence COMP-3P.F.SG the-girl saw.3P.F.SG
*'A thief the police provide evidence that the girl saw.'

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(b) *el-bana:t fakkart sa:faren.
the-girls thought.1P.M.SG traveled.3P.F.PL
Intended: 'The girls, I thought, that they traveled.'

(34) (a) **el-bana:t** fakkart ʔinn-**hin** ga:len ʔinn-**hin**
the-girls thought.1P.M.SG COMP-3P.F.PL said.3P.F.PL COMP-3P.F.PL
sa:faren.
traveled.3P.F.PL
'The girls$_1$, I thought that they$_1$ said that they$_1$ traveled.'

(b) ***el-bana:t** fakkart ga:len ʔinn-**hin** sa:faren.
the-girls thought.1P.M.SG said.3P.F.PL COMP-3P.M.SG traveled.3P.F.PL
Intended: 'The girls$_1$, I thought they$_1$ said that they$_1$ traveled.'

(c) ***el-bana:t** fakkart ʔinn-**hin** ga:len sa:faren.
the-girls thought.1P.M.SG COMP-3P.M.SG said.3P.F.PL traveled.3P.F.PL
Intended: 'The girls$_1$, I thought that they$_1$ said they$_1$ traveled.'

(d) *el-bana:t fakkart sa:faren.
the-girls thought.1P.M.SG traveled.3P.F.PL
Intended: 'The girls$_1$, I thought, they$_1$ traveled.'

To address all these questions, we draw upon Chomsky's (1993) copy theory of movement and Jarrah, Al-Deaibes & Hammouri's (2024) AIC, which is an interface condition that requires a φ-inflection on the probe when the goal is phonologically null. This condition ensures that the identity of the goal is φ-identified at the PF interface, aligning with Jarrah's (2019) and Miyagawa's (2009) arguments that an Agree chain should be morphologically recorded at PF. The AIC is an interface condition that requires the probe to bear φ-inflection reflecting the features of the goal when the goal is phonologically null. By contrast, when the goal is overt, the AIC is vacuously satisfied since the goal itself appears at PF and serves as the morphological realization of the Agree chain. This analysis supports the view that the decision to use a φ-inflection on the probe is ruled by PF interface conditions.

We essentially assume that in JA sentences involving subject extraction from an embedded clause to a matrix clause (due to wh-movement or focus fronting) the obligatorily overt complementizer of the embedded clause establishes an Agree dependency with an unpronounced copy of the extracted subject it c-commands. This Agree dependency between the C^0 *ʔinn* and the subject is triggered because *ʔinn* is endowed with a set of *u*φ-content that should be valued before the sentence derivation converges at the interface levels (see Carstens 2003, Haegeman 1994, Hoekstra & Smits 1999, van Craenenbroeck & van Koppen 2002, Zwart 1993).[11] We assume that such an agreement operation is motivated by the AIC.

[11] In this study, we follow Jarrah (2020) in assuming that C^0 does not share its unvalued φ-features with T^0. This assumption is supported by the fact that, in JA exceptional Case marking constructions, the verb bears subject agreement inflection, as illustrated in example (i) from Jarrah (2020: 150).

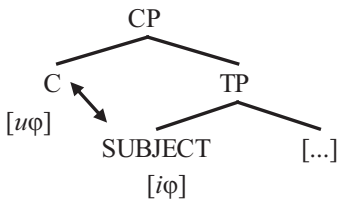
(i) ʔil-bana:t bitwagaʕin [ʔil-ʔimʕalim ʔidarris li-wla:d].
the-thief expect.3P.F.PL the-teacher.M teach.3P.M.SG the-boys
'The girls expect the teacher to teach the boys.'

This example suggests that the embedded T^0 is introduced into the syntactic structure with its own set of uninterpretable and unvalued φ-features.

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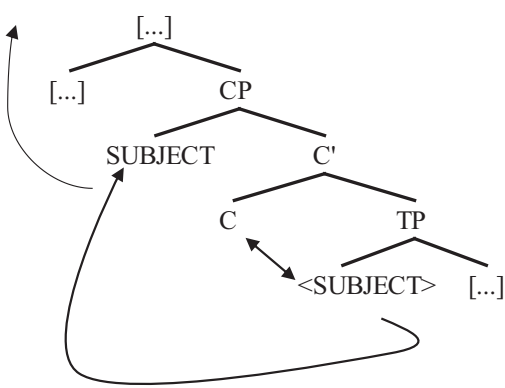
This Agree dependency between *ʔinn* and the subject can be schematized as follows (irrelevant details are skipped):

(35)



As a result of this Agree dependency between the C^0 *ʔinn* and the subject, the *u*φ-content of C^0 *ʔinn* is, for example, specified as [3P.M.PL] when the subject is a plural masculine element. The crucial issue here is that when the wh-subject or the focused subject moves from tense phrase (Spec,TP) of the embedded clause to the root clause, it leaves behind a copy of itself. This movement should take place before the relevant structure (the embedded clause) is sent to the interface due to the effects of the PIC. Once the wh-subject or focused subject moves to the root clause via intermediate Spec,CP, and given the assumption that the complement domain of a phase is shipped to the interface once it is complete, the Agree dependency between C^0 *ʔinn* and the wh-subject or focused subject is interpreted in the PF interface as a dependency between a probe and a silent goal, as schematized in (36). Therefore, according to Jarrah, Al-Deaibes & Hammouri's (2024: 254) AIC 'which requires a phonologically null goal to be φ-identified through a co-varying φ-inflection on its probe', the C^0 *ʔinn* must carry an overt inflection that displays the φ-content of the silent goal.

(36)



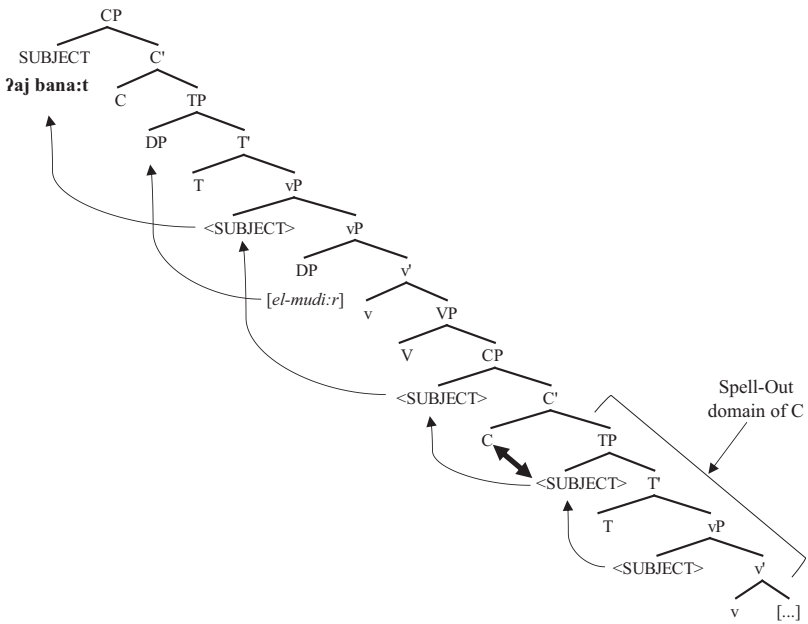
The Agree inflection of the goal (the subject in this case) on the C^0 *ʔinn* is a necessary step to identify the properties of the silent copy of the subject within the embedded CP phase at PF. In other words, the syntactic operation in (36) is required in order to record (i.e., phonologically manifest) the identity of the silent subject DP at PF.

Let us now consider in more detail how the AIC can be applied to the JA phenomena at hand, beginning with the step-by-step derivation of wh-questions. Witness the sentence in (37a) and its step-by-step derivation in (37b), with all irrelevant details ignored.

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(37) (a) **ʔaj** **bana:t** el-mudi:r fakkar ʔinn-**hin** sa:faren?
which girls the-manager thought.3P.M.SG COMP-3P.F.PL traveled.3P.F.PL
'Which girls$_1$ did the manager think that they$_1$ traveled?'

(b)



We assume that in the tree structure (37b) the wh-phrase *ʔaj bana:t* 'which girls' undergoes cyclic A'-movement to the matrix Spec,CP in order to check/value its wh-feature in a Spec-head configuration with the root C^0 (Bošković 2007; Nunes 2021, 2022), leaving behind unpronounced copies, in accordance with Chomsky's (1993) copy theory of movement. Notice that the subject wh-word *ʔaj bana:t* passes through the edges of strong phases, in line with Nunes' (2021, 2022) step-by-step derivation of A'-movement. Additionally, prior to the completion of the embedded CP phase, namely before the domain of the embedded C^0 (the lower TP) is shipped to Spell-Out (Chomsky 2000, 2001), the C^0 *ʔinn*, that bears uninterpretable features [*u*F] that need to be checked/valued by interpretable instances of those features [*i*F], probes the lowest copy of *ʔaj bana:t* situated in Spec,TP. Once the DP *ʔaj bana:t* moves to a higher position, and the derivation is sent to the interface, the PF reads off the Agree relation between the C^0 *ʔinn* and the copy of subject wh-word as an agreement between a probe and a silent goal, triggering the effects of the AIC. Therefore, a φ-inflection of the goal should appear on the probe.[12] This syntactic operation satisfies the identification property in that the identity of the lowest copy of the wh-phrase is recorded on *ʔinn* at PF. Importantly, if the AIC is violated, then ill-formedness immediately arises, as can be seen in (28b) and (29b–d) above. An anonymous reviewer asked whether the agreement marking on C^0 in JA might be purely a post-syntactic (PF) phenomenon, as proposed in some earlier

[12] It should be noted here that this agreement morphology in JA surfaces solely on the C^0 probe, setting it apart from languages such as Bavarian German, where agreement inflection appears on the wh-word itself (see van Koppen 2017).

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research, including Ackema & Neeleman (2004), Haegeman & van Koppen (2012), Kathol (2001), Miyagawa (2009), and Zwart (2006). In Flemish, for example, complementizer agreement may occur only when the agreeing C^0 is adjacent to the subject at PF (38a). However, if the C^0 is separated from the subject, agreement cannot hold (38b).

(38) (a) da/**dan** **zunder** op den warmste dag van 't ja:r
that/that.3P.PL they on the hottest day of the year
tegen under wil gewerkt en
against their will worked have
'that they have worked against their will on the hottest day of the year'

(b) da/***dan** op den warmste dag van 't ja:r **zunder**
that/that.3P.PL on the hottest day of the year they
tegen under wil gewerkt en
against their will worked have
'that they have worked against their will on the hottest day of the year'
(Ackema and Neeleman 2004: 240)

This adjacency condition, nevertheless, is not required for agreement in JA, as in (39).

(39) (a) gult ʔinn-*(**hin**) bi-l-balako:neh el-kabi:reh **bana:t** darasen.
said.2P.M.SG COMP-3P.F.PL in-the-balcony the-big girls studied.3P.F.PL
'You said that girls studied on the big balcony.'

(b) **ʔaj** **bana:t** gult ʔinn-*(**hin**) bi-l-balako:neh el-kabi:reh
which girls said.2P.M.SG COMP-3P.F.PL in-the-balcony the-big
darasen?
studied.3P.F.PL
'Which girls did you say that they studied on the big balcony?'

The examples in (39) show that in JA, unlike in Flemish-type languages, the agreement between a probing C^0 and its goal takes place within narrow syntax, rather than being solely a post-syntactic (PF) effect. This conclusion does not contradict the AIC because we assume that the AIC stipulates that C^0 must exhibit agreement inflection at PF that reflects the goal's φ-features; this inflection is, thus, a consequence of operations in narrow syntax (see Carstens 2003).

Up to this point, our discussion has centered on wh-movement. Nevertheless, since both wh-questions and focus fronting rely on A'-movement, the analysis naturally extends to cases involving subject focus fronting as in (40), repeated from (30a).

(40) **BANA:T** fakkart ʔinn-**hin** sa:faren.
girls thought.2P.M.SG COMP-3P.F.PL traveled.3P.F.PL
'GIRLS I thought that they traveled.'

Similar to constructions with the subject wh-word, as in (37b), the focused subject *BANA:T* 'girls' in (40) moves to check/value its focus feature (Chomsky 2015). It undergoes successive-cyclic movement to the Spec position of focus phrase of the root clause (Spec,FocP). The C^0 *ʔinn* agrees with the focused element *bana:t* while the latter is in

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Spec,TP of the embedded clause. Given the assumption that the focused element *bana:t* moves to the matrix clause, the Agree dependency between the C^0 *ʔinn* and the focused *bana:t* includes a silent goal, which according to the AIC must have a φ-inflection on its probe in the PF interface. Therefore, we propose that it is the effects of the AIC that rule in sentences like (30a)/(40) and (31a) but rules out those like (30b) and (31b–d).

In both types of constructions (i.e., wh-extraction and focalization), we assume that the probing C^0 *ʔinn*, as per the AIC, must fully inflectionally display the φ-features of the goal (the subject), only when the subject lacks phonetic content. This justifies why the C^0 *ʔinn* must both be overt and fully agree with the extracted subject.

In constructions with no subject extraction or subject focalization, the embedded C^0 *ʔinn* may either be phonologically null or fully agree with the embedded subject, as shown in the following examples.

(41) (a) fakkart/gult el-bana:t sa:faren.
thought/said.1P.SG the-girls traveled.3P.F.PL
'I thought the girls traveled.'

(b) fakkart/gult ʔinn-**hin** **el-bana:t** sa:faren.
thought/said.1P.SG COMP-3P.F.PL the-girls traveled.3P.F.PL
'I thought that the girls traveled.'

In these constructions, the Agree relation is established between the C^0 *ʔinn* and the subject, which is located in Spec,TP. The goal of the Agree dependency between *ʔinn* and the subject is not silent once the relevant derivation is shipped to the interface levels, hence no AIC effects arise. Therefore, *ʔinn* may not even surface as an overt element in the Agree chain between *ʔinn* and the overt subject (i.e., the subject itself).

Moreover, our current approach has a further benefit in that it also captures instances involving long-distance movement, as evidenced by the examples in (42) and (43) repeated from (29) and (31), respectively.

(42) (a) **ʔaj** **bana:t** fakkart ʔinn-**hin** ga:lin
which girls thought.2P.M.SG COMP-3P.F.PL said.3P.F.SG
ʔinn-**hin** sa:faren?
COMP-3P.F.PL traveled.3P.F.PL
'Which girls$_1$ did you think that they$_1$ said they$_1$ traveled?'

(b) ***ʔaj** **bana:t** fakkart ga:lin ʔinn-**hin** sa:faren?
which girls thought.2P.M.SG said.3P.F.SG COMP-3P.F.PL traveled.3P.F.PL
Intended: 'Which girls$_1$ did you think they$_1$ said they$_1$ traveled?'

(c) ***ʔaj** **bana:t** fakkart ʔinn-**hin** ga:lin sa:faren?
which girls thought.2P.M.SG COMP-3P.F.PL said.3P.F.SG traveled.3P.F.PL
Intended: 'Which girls$_1$ did you think that they$_1$ said they$_1$ traveled?'

(d) *ʔaj bana:t fakkart ga:lin sa:faren?
which girls thought.2P.M.SG said.3P.F.SG traveled.3P.F.PL
Intended: 'Which girls did you think they said they went to the market?'

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(43) (a) **BANA:T** fakkart ʔinn-**hin** ga:lin ʔinn-**hin**
girls thought.1P.SG COMP-3P.F.PL said.3P.F.SG COMP-3P.F.PL
sa:faren.
traveled.3P.F.PL
'Girls$_1$ I thought that they$_1$ said that they$_1$ traveled.'

(b) ***BANA:T** fakkart ga:lin ʔinn-**hin** sa:faren.
girls thought.1P.SG said.3P.F.SG COMP-3P.F.PL traveled.3P.F.PL
Intended: 'Girls$_1$ I thought they$_1$ said that they$_1$ traveled.'

(c) ***BANA:T** fakkart ʔinn-**hin** ga:lin sa:faren.
girls thought.1P.SG COMP-3P.F.PL said.3P.F.SG traveled.3P.F.PL
Intended: 'Girls$_1$ I thought that they$_1$ said they$_1$ traveled.'

(d) *BANA:T fakkart ga:lin sa:faren.
girls thought.1P.SG said.3P.F.SG traveled.3P.F.PL
Intended: 'Girls$_1$ I thought they$_1$ said they$_1$ traveled.'

The well-formedness of (42a) and (43a) versus the ill-formedness of (42b–d) and (43b–d) can, once again, be accounted for by appealing to the AIC effects. The Agree dependency between the C^0 *ʔinn* and the subject wh-word or the focused subject should be recorded (phonologically manifested) as a φ-inflection of the goal on the probe. We assume that agreement between *ʔinn* and the goal takes place when the latter lands in Spec,TP prior to moving to the CP layer.

Jarrah, Al-Deaibes & Hammouri (2024) address instances where the effects of the AIC would arise. Such instances occur when the verb agrees with the copy of wh-word or focused element. In such cases, there is φ-inflection of, for example, the object wh-word on the verb. Jarrah, Al-Deaibes & Hammouri (2024) differentiate between an Agree chain and a movement chain (whose links are copies of the entity moved). An Agree relation holds between a probe and a chain, not between a probe and one link of the chain, even if one link of the chain is what values the uF on the probe. Following this assumption, Jarrah, Al-Deaibes & Hammouri (2024) can account for why there exists no object agreement on the verb in such situations. Although the object, such as the wh-element *ʃu:* 'what' in (44), moves from its thematic position and leaves a covert copy of it in its base position, the chain is overt because its first link, i.e., the higher copy, is overt.

(44) **ʃu:** eʃtare:t ~~**ʃu:**~~?
what bought.2P.M.SG
'What did you buy.'

This situation crucially differs from instances where the goal is a single-link chain in the object position, which has no overt link, as illustrated in (45) adapted from Jarrah, Al-Deaibes & Hammouri (2024: 12).

(45) el-walad ʃa:f-**ha** object pro.
the-boy saw.3P.F.SG her
'The boy saw her.'

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The clitic *-ha* on the verb in (45) is reported to be φ-inflection triggered by the Agree relation between the v^0 and the object pro. If an Agree chain must be recorded at PF by either the agreement inflection on the probe as in (45) or by the goal being overt as in (44), then either the φ-inflection on the probe or the goal being the whole movement chain containing an overt link (the wh-element) will suffice to satisfy the AIC. However, Jarrah, Al-Deaibes & Hammouri (2024) do not discuss cases where both links of the chain are silent. In such situation, the effects of AIC arise, as predicted. In our cases, the agree relation between the C^0 *ʔinn* and the subject wh-word or the focused subject include an Agree relation between *ʔinn* and a chain whose both links are silent, given the movement of the latter to the root CP.

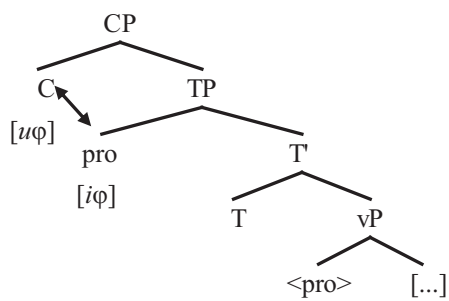
We have thus far discussed how the current approach can explain the complementizer-subject agreement in constructions with wh-movement and focus fronting. The question that arises here is how this agreement phenomenon can be explained in constructions that lack any form of movement, such as those involving topicalized, left-dislocated elements, as in (46), repeated from (33).

(46) (a) **el-bana:t** fakkart ʔinn-**hin** sa:faren.
the-girls thought.1P.SG COMP-3P.F.PL traveled.3P.F.PL
'The girls, I thought that they traveled.'

(b) ***el-bana:t** fakkart sa:faren.
the-girls thought.1P.SG traveled.3P.F.PL
Intended: 'The girls, I thought, traveled.'

Following Jarrah, Al-Jarrah & Al-Shawashreh (2022); Jarrah, Al-Deaibes & Hammouri (2024); and Ouhalla (1997), we propose that the dislocated subject *el-bana:t* 'the girls' in (46) is a topic, which externally merges in the Spec position of Topic Phrase (Spec,TopP).[13] Under this assumption, Spec,vP of the embedded clause is not filled with the dislocated subject *el-bana:t* 'the girls' in (46). Instead, Spec,vP (and later Spec,TP of the embedded clause) is filled with a pro that acts as the subject of the embedded clause (see Soltan 2007). Following this line of analysis, the C^0 *ʔinn* establishes an Agree relation with the subject pro rather than a copy of the dislocated subject that merges externally in its surface position, as shown in the following tree structure. (We suppose that the subject pro moves to Spec,TP.)

(47)



[13] The assumption that dislocated definite elements that are paired with pronominal elements on the verb or complementizers are topics is widely assumed in the Arabic grammar (for more information, see Aoun, Benmamoun & Choueiri 2010).

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The presence of the silent pro in (47) that carries the third-person feminine plural features is evidenced by the fact that this pro surfaces overtly when it needs to be emphatically pronounced, as exemplified in (48).

(48) el-bana:t fakkart ʔinn-**hin** **hinneh** sa:faren.
the-girls thought.1P.SG COMP-3P.F.PL they.F.PL traveled.3P.F.PL
'The girls, I thought that THEY traveled.'

An important point to emphasize here is that, in this article, we adopt Holmberg's (2005: 538) proposal that a referential pro is a true pronoun specified for a set of interpretable features and can therefore value the *u*F of C^0 via an Agree relation. We propose that pro in (46a)/(47) merges in Spec,vP and then moves to Spec,TP for EPP. This movement justifies the situation that in emphatic contexts the pronoun must appear before, but not after, the verb, which is assumed to adjoin to T^0 (Benmamoun 2000).

We claim that the C^0 *ʔinn* establishes an Agree relation with pro in order to get its unvalued φ-content valued as proper. Because the goal of this relation (i.e., pro) is phonologically silent, the effects of the AIC arise. This also justifies the ill-formedness of (46b) above, reproduced below for convenience.

(49) *el-bana:t fakkart sa:faren.
the-girls thought.1P.SG traveled.3P.F.PL
Intended: 'The girls, I thought, traveled.'

In (49), there is no agreement inflection at all, leading the sentence to crash for the same reason because of the violation of the AIC.

As far complementizer-object agreement is concerned, such an agreement is possible only in the absence of the subject. This is because the subject, upon agreeing with C^0 in Spec,TP, is closer to C^0 than the object. This justifies why we have only C^0-subject agreement in (50).

(50) (a) **ʔaj** **bana:t** fakkart ʔinn-*(**hin**) ʃa:fen li-wla:d?
which girls thought.2P.M.SG COMP-**3P.F.PL** saw.3P.F.PL the-boys
'Which girls did you think that they saw the boys?'

(b) *ʔaj bana:t fakkart ʔinn-**hum** ʃa:fen **li-wla:d?**
which girls thought.2P.M.SG COMP-**3P.M.PL** saw.3P.F.PL the-boys
Intended: 'Which girls did you think that they saw the boys?'

If there is no subject, however, the AIC requires C^0-object agreement as in (51).

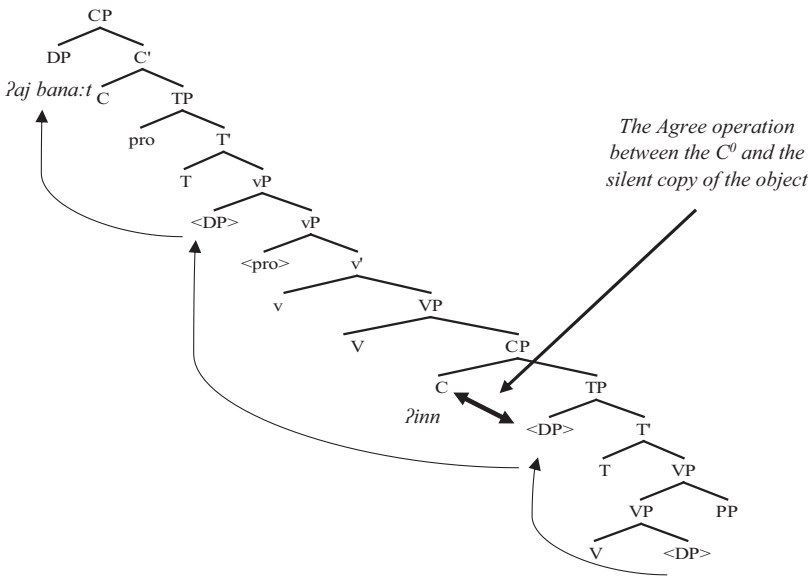
(51) **ʔaj** **bana:t** fakkart ʔinn-*(**hin**) ʔintaraken laħa:lhen?
which girls thought.2P.M.SG COMP-3P.F.PL left.PASS.3P.F.PL alone
'Which girls did you think that they were left alone?'

The Agree operation between the C^0 and the silent copy of the object in (51) may be represented as in (52), with irrelevant details skipped.[14]

[14] We follow the recent account of Jarrah (2023) that Arabic passive clauses do not project vP.

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(52)



The diagram above illustrates that *ʔinn* must register agreement morphology with the moved object (the closest element in its c-command domain), as there is no intervening subject in the embedded clause. The AIC is thus satisfied, resulting in the convergence of the derivation at the interface levels.

4. Typological notes on C⁰ agreement with left peripheral nominals

We have already shown that the embedded C^0 in JA must be overt and fully agree with the closest goal in constructions involving extraction (wh-movement and focus fronting) and topicalization, as shown in (53)–(55), respectively.

(53) **ʔaj** **bana:t** ʃake:t ʔinn-**hin** ʕirfen es-sirr?
which girls suspected.2P.M.SG COMP-3P.F.PL knew.3P.F.SG the-secret
'Which girls did you suspect that they knew the secret?'

(54) **BANA:T** ʃake:t ʔinn-**hin** ʕirfen es-sirr.
girls suspected.1P.M.SG COMP-3P.F.PL knew.3P.F.SG the-secret
'GIRLS I suspected that they knew the secret.'

(55) **el-bana:t** ʃake:t ʔinn-**hin** ʕirfen es-sirr.
the-girls suspected.1P.M.SG COMP-3P.F.PL knew.3P.F.SG the-secret
'The girls, I suspected that they knew the secret.'

This agreement paradigm in JA, as discussed earlier, is motivated by the AIC. Notably, the idea that complementizer agreement of the embedded clause may correlate with a nominal in the matrix clause has already been explored in other languages. In this section, we want to situate our findings within a broader typological framework to highlight cross-linguistic

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patterns and generalizations. To begin with, the phenomenon of complementizer agreement with a silent pronoun/operator is found in the Bantu language *Lubukusu*. Diercks (2013), for example, has reported that the embedded C^0 in Lubukusu agrees with a null subject-oriented pronoun associated with the matrix subject, as clarified below.

(56) Ba-ba-ndu ba-bol-el-a Alfredi **ba-li** a-kha-khil-e
PL-PL-people 2P.SG.said-AP-FV Alfred PL-that 1P.SG-FUT-conquer
'The people told Alfred that he will win.'
(Diercks 2013: 358)

Diercks has proposed that an empty operator category (labeled as OP) occupies the embedded Spec,CP position. This operator is bound by the matrix subject and enters into an agreement relation with the C^0 head, as schematized in (57) from Diercks (2013: 359).

(57) [TP Subject$_1$ … [CP OP$_1$ [… C] …] …]
Binding Agree

A similar phenomenon of complementizer agreement is also attested in several other Bantu languages such as Chokwe and Luchazi (for details, see Kawasha 2007).

In a similar vein, Zwart (1993) has indicated that in Frisian (a west Germanic language) referential pro-drop of a subject in a subordinate clause is allowed if there is complementizer agreement with that subject (cf. van Alem 2024), as shown in (58).

(58) .. datst (do) jûn komst
that.2P.SG you tonight come-2P.SG
'.. that you come tonight.'
(Zwart 1993: 165)

Such pro-drop is, nonetheless, not available if overt complementizer agreement is absent, as in (59).

(59) .. dat *(er) jûn komt
that he tonight come-3P.SG
'.. that he comes tonight.'
(Zwart 1993: 165)

Bavarian German also patterns with Frisian in this respect, as demonstrated in (60).

(60) (a) .. wenn-sd will-sd
If-2P.SG want-2P.SG
'.. if you want.'

(b) .. wa:l-n *(mer) gra:d besamn senn
because-1P.PL we at.the.moment together are-1P.PL
'.. because we are together at the moment.'
(van Koppen 2017: 12)

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Another related phenomenon is complementizer agreement with extracted and topicalized elements in Irish. Consider (61).

(61) (a) an ghirseach a ghoid na síogaí
the girl aL stole the fairies
'the girl that the fairies stole away'

(b) an ghirseach a-r ghoid na síogaí í
the girl aN-PAST stole the fairies her
'the girl that the fairies stole away'
(McCloskey 2002: 189)

Observe that the C⁰ *aL*, as McCloskey points out, appears in clauses that involve A'-binding of a trace, whereas its counterpart *aN* is used in clauses where A'-binding targets a resumptive pronoun. The Irish examples in (61) show that the form of C^0 varies depending on the bound element.

Overall, the complementizer agreement behaviors observed in JA, Lubukusu, Frisian, Bavarian German, and Irish suggest that there is a connection or dependency between the realization of overt agreement inflection on C^0 and extracted or silent elements. In other words, if an element is extracted from an embedded clause or if it is silent, some agreement morphology associated with that element must be recorded on C^0 at PF, which in one way or another corroborates the AIC we proposed for JA. How the AIC is achieved across languages is, however, subject to parametric variation. That is, languages vary with respect to the complementizer agreement strategies they adopt in their grammars. For example, embedded C^0s in JA, Lubukusu, Frisian, and Bavarian German bear phi-agreement features, whereas Irish employs different morphological forms of C^0.

Finally, one theoretical question that arises from this analysis concerns how information about Agree dependencies is transferred from syntax to phonology after Spell-Out. This question is particularly relevant given that our AIC makes explicit claims about the visibility of syntactic relations at the PF interface. In line with post-syntactic models such as Distributed Morphology (Embick & Noyer 2001, Halle & Marantz 1993), where morpho-phonological realization follows narrow syntactic operations, we can view the AIC as an interface condition that ensures syntactic Agree relations leave a phonological footprint. Specifically, when the goal of Agree is phonologically null, the AIC requires the probe – in this case C⁰ – to carry overt φ-feature inflection, thereby preserving the recoverability of the dependency at PF. This reasoning aligns with Jarrah's (2019) and Miyagawa's (2009) proposals that syntactic chains must be morphologically 'registered' at PF to maintain interpretability. Crucially, when the goal is overt, the AIC is vacuously satisfied since the goal itself provides the necessary phonological content. From this perspective, the complementizer agreement patterns observed cross-linguistically reflect a broader grammatical tendency to make silent syntactic relations interpretable at the interface.

5. Conclusion

This paper explored the mechanisms underlying the licensing of complementizer agreement with nominals in the left periphery of JA. It argues that the obligatory complementizer agreement with A-bar elements in JA is a direct consequence of the AIC proposed

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by Jarrah, Al-Deaibes & Hammouri (2024). Given the AIC, we showed that the φ-inflection of the extracted element on the C^0 *ʔinn* is required because its goal is silent being either a copy or pro. This analysis provides strong empirical support for the hypothesis that the morphological realization of Agree dependencies is governed by interface conditions. In particular, it demonstrates that the visibility of agreement relations at PF is not an arbitrary feature of narrow syntax but is rather a consequence of interface-driven processes. The AIC, which mandates that an agreement inflection is realized when the goal is phonologically null, highlights the crucial role of PF in ensuring that agreement chains are morphologically represented. This suggests that the interface between syntax and phonology actively shapes the morphosyntactic output, enforcing specific conditions on when and how φ-features are overtly marked. Such a perspective aligns with broader theoretical proposals that emphasize the role of interface conditions in regulating syntactic operations, thereby providing a unified explanation for the distribution of complementizer agreement and other morphosyntactic phenomena in a range of languages. This analysis underscores the importance of viewing Agree dependencies as part of a broader interface system, where both syntax and phonology work in tandem to shape linguistic expressions.

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