Phi-Feature Copying in Standard Arabic Syntax

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Abstract

This paper addresses copying in Standard Arabic. The researchers contend that in addition to the fact that the highest link is usually phonetically realized, copies in Arabic may be pronounced instead of their heads without causing the derivation to crash. In addition, they argue that Arabic sometimes comes with a phonological pronominal element that is purely a copy of φ-features of the subject. The paper also illustrate how the copy theory of movement can help solve ambiguous sentences by reconstructing copies in the foot or the head of the copy chain. Applying the binding principles, the study shows that reconstructions of copies clarify the underlying semantic and syntactic structures. It explains that in most cases, copy operations either add new semantic and/or syntactic features or lead to different interpretations. Focusing on the pronunciation of lower copies, the study discusses Detached Accusative Object Pronouns and Attached Accusative Object pronouns. It is shown that these copy operations are congruent with the minimalist program.

Key words: copying, Arabic, syntax, semantics, LCA, binding principles

1. Introduction

Chomsky (1993) puts forward that movement is an operation of copying without pronouncing the original copy:

1. a. [ John, wondered which picture of himself Chris liked?
   b. [TP John wondered [CP which picture of himself] [TP Chris liked which picture of himself]]

The sentence in (1b) contains two copies of himself, each in a different domain. If the higher copy is chosen, himself will be interpreted as John. If the lower one is chosen, Chris will be the antecedent. In terms of GB, the copy inside the embedded TP is a variable, whereas the material in [spec/CP] is the operator. When reducing the derivation of (1b) to one copy, we may get either (2a) or (2b):

2. a. [TP John wondered [CP which picture of himself] [TP Chris liked which picture of himself]]
   b. [TP John wondered [CP which picture of himself] [TP Chris liked which picture of himself]]

According to Binding Principle A, John will be the antecedent for himself in (2a), while Chris will be the antecedent in (2b).

Thus, movement consists of two parts: a copying operation which duplicates part of the tree and then puts the copy somewhere in the tree, and another operation that silences the original. Further, Binding Principles hold at LF where at least one link (the copy or the original) is subject to the binding
principles (Carnie 2008:425). In the sentence above, the copy of the anaphor is c-commanded by the antecedent Chris. This version of the copy is present at LF, but it is not pronounced. Accordingly, Binding Principle A is met since one copy of the anaphor is c-commanded by a local antecedent.

Perhaps a more common example of copying is the English subject which is merged with the VP under vP and then moves to [spec/TP]. The result of the movement is that it leaves a copy of the moved constituent in its original position. The position that the constituent moves to is the derived position. As a result of the Move + Copy operation, the sentence contains two copies of the subject: one in [spec vP] and the other in [spec TP]. However, for reasons of economy, one copy is spelled out. Accordingly, the subject NP is related to two positions in the structure. In other words, the subject leaves a copy in the base position, which is still available for interpretation, and is only pronounced at the derived position. This indicates that the same NP is merged twice: one copy is merged in [spec vP] and the other in [spec TP] (Haegeman 2006:247-248).

Sakarneh and Mobaideen find that the phonetic pause in the Holy Quran has a phonological nature since it triggers the deletion of a final syllable. The final syllable may contain some morphological and syntactic markers that affect the meaning of the word or phrase and thus affect the meaning (semantics) of it. Such a deletion process will ultimately result in leaving a copy of the deleted element that could be retrieved by an interplay of semantics and syntax.

This paper discusses some phenomena of copying in Standard Arabic. Most examples have been collected from older syntax books written more than 800 years ago. Some were collected from new syntax books such as Al-Samirra’i’s, Ma’ani Al-Nahw ‘Meanings of syntax’. In addition, the researchers came up with appropriate examples when needed. Therefore, the study combines Standard Classical Arabic and some Modern Standard Arabic.

In this paper, it will be shown that, while Arabic usually pronounces the highest copy, the lowest copy may also be pronounced without causing the derivation to crash. It also discusses ambiguous sentences within the copy theory of movement. In addition, it will be shown that Arabic sometimes comes with a phonological pronominal element that is purely a copy of φ-features of the subject. Such copy usually exhibits the default third person masculine singular or plural features. The study focuses on the pronunciation of the lower copies by giving examples from Detached Accusative Object Pronouns and Attached Accusative Object pronouns. It shows that these copy operations are congruent with the minimalist program and Kayne’s Linear Correspondence Axiom (1994).

The paper proceeds as follows: section 2 provides evidence for copies from SA. Section 3 tackles ambiguous sentences and their reconstructions in light of the copy theory. Feature copying is addressed in section 4. Section 5 discusses the pronunciation of lower copies. Finally, we discuss the restrictive construction of detached accusative object pronouns. Section 7 concludes.
2. Evidence for Copies

Radford (2004; 2009) presents a piece of evidence from children’s speech in which the child produces long distance Wh-Questions such as the following:

3. a. What do you think [what Cookie Monster eats]?
   b. How do you think [How superman fixed the car]?

In these cases, the wh-word moves to the matrix [spec/CP], but it leaves an italicized copy at the front of the bracketed complement clause. This means that wh-movement involves an intermediate step by which the wh-word moves to [spec/CP] position within the bracketed complement clause moving into its final landing side in the main clause [spec/CP]. The children’s error lies in not deleting the medial copy of the wh-word.

Preposition copying provides a different kind of evidence supporting the claim that preposed elements leave behind a null copy:

4. Israeli soldiers fired an anti-tank missile and hit a police post in which the Palestinian policeman who was killed had been in (News reporter, BBC, Radio 5).

Resumptive pronouns in Arabic, as in many other languages, give more evidence for the copy theory of movement since an overt copy of a moved pronoun appears at its extraction site:

5. a. Ɂinnahu l-muʕʕalim-u [l-laði la: ?a-ʕṛrf-u
   That:3SM the-teacher-NOM who NEG IMPR:1S-know-IND
   t-tullab-a [l-laði:na yu-hibb-u:na-hu]
   the-students-ACC who:3MPL IMPR:3SM-love-3MPL-him:ACC
   ‘He is the teacher whom I don’t know the students who love him’
   b. * Ɂinnahu l-muʕʕalim-u [l-laði la: ?a-ʕṛrf-u t-tullab-a
   [l-laði:na yu-hibb-u:na-

There are two modifying relative clauses in (5) above; one modifying lmuʕʕalimu ‘the teacher’, and the other modifying t-tullab-a ‘the students’. -hu ‘him’ is a resumptive pronoun which is initially merged as the complement of the verb yuhibbu:na ‘loves’, but undergoes A’-movement and thereby moved out of the relative clause containing yuhibbu:na to the front of the relative clause containing ʔa-ʕṛrf-u ‘I know’. It is expected that the copy of l-laði ‘who’ is left behind at the extraction site to receive a null spellout. However, this will result in the ungrammatical sentence in (5b). The reason is that relative clauses are islands, and there is no way for any moved copy to receive a null spellout if it happens to occur in an island provided that its antecedent lies outside the island. This condition prevents the copy of l-laði (marked by a double strikethrough) from receiving a null spellout in (5b) since it is contained within a relative clause island while its antecedent l-laði (in bold) is moved outside the island.

Nevertheless, why is l-laði spelled out as –hu ‘him’? Pesetsky (1998) sets a principle that requires copies of moved constituents to be as close to unpronounceable as possible. Since islands preclude a completely null spellout, the minimal overt spellout is to spell out the φ-features (person, number, gender, case) of the expression. For this reason, the third person singular masculine accusative –hu is used.
3. Ambiguous Sentences

The copy theory of movement helps resolve sentence ambiguity by retrieving the Deep Structure (DS) or the LF of sentences by reconstruction. Let’s take the following example:

7. naðar-a Zaid-un, ?la Amr-in, wa huwa, ya-bki:
   look-SUBJ Zaid NOM to Amr GEN and he IMPF-3SM-cry
   ‘Zaid looked at Amr while he was crying’

The ambiguity of (7) is triggered by the fact that Zaid or Amr could be the antecedent of the embedded subject of the verb yabki ‘cry’. According to Principle B of the Binding theory, pronouns must be free within their binding domains. Therefore, the pronoun huwa ‘he’ could refer to either Zaid or Amr as shown by the indices. In other words, the third person masculine singular pronoun huwwa could be a copy of Zaid or Amr. To disambiguate the sentence, the CP wahuwa ya-bki: ‘while he was crying’ can have two copies as sketched in (8).

8. [TP naðar-a Zaid-un, [CP wa huwa ya-bki:] ?la
   look-SUBJ Zaid NOM and he IMPF-3SM-cry to
   Amr-in, [wa huwya-bki:]
   Amr GEN and he IMPF-3SM-cry
   ‘Zaid looked at Amr while he was crying’

If the upper copy were chosen for interpretation, huwa should take Zaid as its antecedent since the copy is c-commanded (and therefore bound) by the subject Zaid (9a); if the lower copy were chosen, Amr or Zaid can be the antecedent (9b). Crucially, the two copies cannot both be selected for interpretation because huwa cannot mean Zaid and Amr simultaneously.

9. a. [TP naðar-a Zaid-un, [CP wa huwa, ya-bki:] ?la
   look-SUBJ Zaid NOM and he IMPF-3SM-cry to
   Amr-in, [wa huwya-bki:]
   Amr GEN and he IMPF-3SM-cry
   ‘Zaid looked at Amr while he (Zaid) was crying’

   b. [TP naðar-a Zaid-un, [CP wa huwya-bki:] ?la
   look-SUBJ Zaid NOM and he IMPF-3SM-cry to
   Amr-in, [wa huwa, ya-bki:]
   Amr GEN and he IMPF-3SM-cry
   ‘Zaid looked at Amr while he was crying’

   We still need to find out how huwa can be taken by Arab traditional linguists as referring mostly to Amr. Principle B on its own cannot stop Zaid or Amr of being the antecedent for huwa since both of them are not in the same binding domain as the pronoun. In such cases, traditional Arab grammarians came up with what they called ‘Adjacency Condition’ (Al-Andalusi, 1998; Al-Ashmoni, 1951; Al-Farahidi, 1981; Al-Mubarrid, 1994; Ibn Jinni, 1954; Sibawayh, 1988):

10. Adjacency Condition: If there are two potential operators for a certain variable, then dependency chain holds between the variable and the closer adjacent operator.

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Taken the adjacency condition into account, Amr is more likely to be the antecedent for the pronoun *huwa* since it is more adjacent to the pronoun than Zaid. It is also possible to derive (7) above without pronouncing the lower copy *huwa*:

11. [TP naðar-a Zaid-un, ?ʔla Amr-in, [CP C Ø t_i ya-bki: ]] look-SUBJ Zaid NOM to Amr GEN IMPF-3SM-cry

‘Zaid looked at Amr while crying’

The difference between (7) and (0) lies in pronouncing the lower copy at PF in (7) and making it silent in (0). However, it is hard to retrieve an upper copy of the pronoun because without a spelled out copy, the verb yabki: ‘cry’ cannot stand alone after the matrix verb and subject naðara Zaidun ‘Zaid looked’. Otherwise, it will sound like a run-over sentence due to the absence of an overt C and an overt subject copy. Thus, it is unlikely that the copy refers to Zaid. Therefore, we are left with one option: to interpret the sentence with a lower copy. Since that copy is c-commanded and A’-bound by two antecedents Zaid and Amr, it can be linked to either of them. Nonetheless, most native speakers will intuitively think that Amr was crying rather than Zaid. In other words, they will render the copy as referring to the more adjacent operator Amr in accordance with the Adjacency Condition:

12. *a. [TP naðar-a Zaid-un, [CP C Ø t_i ya-bki: ]] look-SUBJ Zaid NOM IMPF-3SM-cry to Amr GEN

‘Zaid looked at Amr while crying’

b. [TP naðar-a Zaid-un, ?ʔla Amr-in, [CP C Ø t_i ya-bki: ]] look-SUBJ Zaid NOM to Amr GEN IMPF-3SM-cry

‘Zaid looked at Amr while crying’

It is also possible to replace the CP in (0) by a present participle:


‘Zaid looked at Amr crying’

Functioning as an adverb, the present participle modifies the verb naðara ‘look’. Therefore, the plausible interpretation is that it is Zaid who was crying. However, the interpretation may pick Zaid or Amr if the main verb was replaced by a reciprocal verb such as ?istaqbala ‘welcomed, met’:


‘Zaid welcomed Amr crying’

On a par with (13), the adverb ba:kij-an ‘crying’ is interpreted as referring to Zaid since it modifies the verb ?istaqbal ‘welcomed, met’. However, since this verb indicates reciprocity, both Zaid and Amr can have scope over the adverb; Zaid is the syntactic subject of the verb ?istaqbal and Amr is the closest operator to the adverb ba:kijan.

It is the reciprocity of the verb that triggers ambiguity of the sentence. On a par with reciprocal pronouns, let’s assume that the presence of verbs like ?istaqbal ‘met’, taqa:tala ‘fight each other’, and
taka:taba(2) ‘write to each other’ make the sentence subject to Principle A of the Binding theory. Therefore, the adverb, which functions as a reciprocal pronoun here, may be interpreted as referring to Zaid or Amr since both of them bind the adverb within its binding domain.

Adjacency Condition also applies to solve the ambiguity of similar sentences with two potential antecedents:

15. [TP saʔal-a Zaid-un Amr-an [CP ?an PRO ya-ðhab-a]]
   ask:3SM-SUBJ Zaid-NOM Amr-ACC [ to IMPF-3SM-go-SUBJ]
   ‘Zaid asked Amr to go’

16. [TP axbar-a Zaid-un Amr-an [CP ?an annamustawa-hu jayyid-un]]
   tell:3SM-SUBJ Zaid-NOM Amr-ACC [ THAT level-his good-NOM]
   ‘Zaid told Amr that he is doing well’.

According to the adjacency condition, the PRO in (15) and the accusative attached pronoun –hu ‘him’ in (16) must refer to the object NP Amr since it is closer to them. However, there is nothing to stop the subject NP Zaid from being the antecedent since it binds PRO and the attached pronoun outside their binding domains.

4. Feature Copying

Sometimes the phi features of a syntactic element, the semantic features of person, number, and gender, are carried over to an adjacent element within the same XP and both of them are moved to a higher projection to check some of these features(3). This operation by which the value of a feature on one constituent is copied onto another is called Feature Copying. Bobaljik (2002), Brody (1995), Pesetsky (1998), Richards (1997), Roberts (1997), Bošković (2002, 2004a), Miyoshi (2002), Landau (2003), and Reglero (2004), among others assume that pronunciation of lower copies is possible even when the relevant phonological features are copied under movement, i.e. when they are present in the head as well as the tail of the chain. To illustrate how such an operation works, let’s take the following example from Standard Arabic:

17. a. maʕi man ka:na ya-takallam-u zaid-un?
   With whom be:3SM:PAST 3SM:IMPF-talk-IND zaid-NOM
   ‘With whom was zaid talking?’

   b. ka:na zaid-un ya-takallam-u maʕi man?
   be:3SM:PAST zaid-NOM 3SM:IMPF-talk-IND with whom

18. *man ka:na ya-takallam-u zaid-un maʕ?

As can be seen from (17a) above, the preposition maʕ ‘with’ is pied-piped along with a wh-pronoun man ‘whom’ so that the whole PP maʕ man moves to [spec-CP]. The LF representation of (1717a) is presented in (1717b) where the derivation starts with the preposition maʕ ‘with’ merging with its wh-pronoun complement man ‘whom’ to form the PP maʕ man ‘with whom’. This in turn is merged with the verb yatakallamu ‘talk’ to form the VP yatakalluma maʕ man ‘talk with whom’. This VP is then
merged with an affixal \( v \) which attracts the verb to raise and merge with it. The derivation moves on with the merger of the subject \( Zaidun \) in [spec-vP]. The whole vP is then merged with the past-tense auxiliary \( ka:\text{na} \) ‘was’ in T. The strong T and EPP features of \( ka:\text{na} \) triggers movement of the subject \( Zaidun \) to [spec/TP]. Merging the resulting TP with a null interrogative Comp carrying [WH, EPP] will derive the structure shown in (19) below:

Since the wh-feature in C is affixal, it attracts the auxiliary \( ka:\text{na} \) to raise and merge with it, hence the precedence of the auxiliary before the subject \( Zaidun \). The [WH, EPP] features of C attracts a wh-marked maximal projection to move to the [spec-CP]. Since the only wh-marked maximal projection in (19) is \( man \) ‘whom’, it follows that \( man \) will move to [spec-CP] and hence deleting the [WH] and [EPP] features of C as shown in (20) below:
However, how can we account for the fact that the whole PP \( ma\$ man \) ‘with whom’ is raised to the front of the CP with the P \( ma\$ \) being pied-piped along with the wh-pronoun \( man \) ‘whom’? One way to the pied-piping approach is assuming that the head P \( ma\$ \) of the PP \( ma\$ man \) carries a wh-feature which is carried over from the wh-pronoun \( man \) through some form of feature-copying by virtue of being a projection of \( ma\$ \). The PP \( ma\$ man \) will then have the same wh-feature as its head \( p ma\$ \), and therefore can be attracted by the [wh] feature of C. In other words, wh-feature can percolate from a complement onto a preposition or vice versa: a preposition can inherit a wh-feature from its complement. Since the complement of the preposition \( ma\$ \) in (17a) is the pronoun \( man \) ‘whom’ which contains a wh-feature, \( ma\$ \) will inherit this wh-feature through merger with \( man \), and thus the whole PP when carry the wh-feature: as shown in (21)
The PP \textit{maʕ man} will consequently carry a [\text{WH}] feature by virtue of being an XP of the wh-marked P \textit{maʕ}. As a result, the wh-marked PP \textit{maʕ man} moves to [\text{spec-CP}]: as shown in (22)

22.

![Diagram](image)

The ungrammaticality of (18) is accounted for by the fact that Arabic wh-phrases have strong wh-feature that must percolate from the wh-phrase to the head P.

The second example for copy of \textphi{}-features involves pronouns. Arabic has four sets of pronouns: \textit{detached nominative subject pronouns}, \textit{attached nominative (enclitic) subject pronouns}, \textit{attached (enclitic) object pronouns, that appear in accusative and jussive cases}, and \textit{detached accusative object pronouns}, as in the following examples respectively:

23. a. \textit{ʔana ʔa-ktub-u qiSaS-an}
   \text{1:1SM IMPF-1SM-write-IND story:PL-ACC}
   ‘I write stories’

b. Katab-\textit{tu} Qissa-\textit{t-an}
   write:\text{PRF-1SM} story-\text{F-ACC}
   ‘I wrote a story’

c. Darab-\textit{a-ni} Zaid-un
   hit:\text{PRF:3SM-subj-1S:ACC} Zaid-NOM
   ‘Zaid hit me’

d. \textit{ʔiyya-ka na-ʕbud-u}
   \text{obj pro-2SM IMPF:1PL-worshop-IND}
   ‘You (lord, we worship’

Arabic sometimes comes with a pronominal element (detached nominative subject pronoun) that is purely a copy of \textphi{}-features of the subject\(^4\). When the subject is an R-expression, the copy appears in the default third person singular or plural pronouns \textit{huwa}, \textit{humm} ‘he, they’. This kind of pronoun is dubbed as \textit{Dami:r l-faSl} in Arabic ‘separation pronoun’ (henceforth SP), and it always appears in the NOM case,
i.e. a detached NOM subject pronoun. Such a pronoun indicates that the preceding word is an XP, namely NP, and that the following words functions as a predicate, rather than as a postmodifier. The SP also accentuates that the preceding word is the subject for the predicate that follows:

24. Ɂula: Ɂika
humu
l-xa:sir-u:n


‘Those are the losers’

Without the SP, the following word l-xa:sir-u:n ‘the losers’ might postmodify the subject Ɂula: Ɂika ‘those’ since it shows full agreement with the subject in terms of person, number, gender and definiteness. Thus, without SP, the two words will constitute a single NP without a predicate.

Recall that the canonical verbless sentence is composed of a definite NP subject and an indefinite NP/AdjP predicate. However, in order for a pronoun to count as an SP, it must be one of the detached NOM subject pronouns and it must separate two definite NPs. It should be noted that SPs do not affect the derivation of the sentence. In other words, the subject and the predicate remain intact. For instance, in (25) below, the subject remains the (italicized) enclitic –na: ‘we’, and the predicate remains l-wa:riθ:i:n ‘the inheritors’:

25. wa kun-na: nahnu l-wa:riθ:i:n
    and be:PST-1PL we:1PL:NOM the-inheritors

‘And we were the inheritors’

(Holy Quran: Al-qaSaS:58)

This brings about the question: what is the function of this SP and how is it merged in the derivation? We have mentioned that SPs are used to accentuate that the preceding word is the subject for the following predicate and that they appear between two definite nouns so that the second word counts as a predicate rather than a postmodifier. This suggests that SPs are purely functional elements which are introduced after the derivation of the sentence is completed. They copy the features of the preceding NPs.

To make our analysis concrete, let’s take the derivation of (24) above.

As a verbless sentence, the derivation starts with a PredP that incorporates the thematic roles. The predicate NP l-xa:sir-u:n ‘the losers’ merges the subject NP Ɂula: Ɂika ‘those’ which needs to raise to [spec/TP] to check EPP. The derivation proceeds by raising both of the subject and the predicate to AGRP and AgrP respectively which are located above TP. At this stage, the nominative, third person plural features are copied from the subject NP and are spelled out as a detached nominative third person plural hum ‘they’. But what triggered the spellout of these formal features? As Chomsky (1993) argues, every Move is triggered by feature valuation. In our case, in addition to the CASE and φ-f features it carries, the head Agr also has a strong [+emph(atic)] feature that triggers the spellout of all φ-f features plus CASE on a phonological abstract element. That element is best pronounced as a pronoun since pronouns are functional elements that carry a set of formal features. SP is, then, merged with the EMPH head. The merger does not violate LCA which does not see the internal structure of words. The fusion of SP and EMPH head is illustrated by # # symbols in (26).
26. a. [ AgrP[Emph Emph [nr ... hummu ...]]# ]

Thus, the two copies, the subject NP Ɂik ‘those’ and the SP hummu survive LCA without causing the derivation to crash.

5. Pronounce Lower Copy

One of the cases which requires Pronounce Lower Copy (PLC) is the obligatory precedence of the predicate in nominal sentences when the subject is indefinite and the predicate is a PP(5). Since Arabic bans indefinite subjects, a way for the derivation to converge is to allow the predicate to precede the indefinite subject as in (28b). The sentence in (28a) is, then, ungrammatical because it starts with an indefinite subject which is totally unacceptable in Classical and Modern Arabic(6):

27. ar-rajjul-u     fi l-bayt-i
    the-man-NOM    in-the-house-GEN

‘The man is in the house’

28. a. * rajjul-un     fi l-bayt-i
    man-NOM    in-the-house-GEN’
    ‘(There is) a man in the house’

b.   fi l-bayt-i     rajjul-un
    in-the-house-GEN    man-NOM

‘(There is) a man in the house’

Before considering the derivation of such sentences, we must agree on the structure of verbless sentences(7). Here, we Follow Bakir (1980) and Al-Horais (2006), who maintain that Arabic verbless sentences contain a null or deleted copula in T; there is no V and hence no VP in verbless sentences since the relevant construction has two alternatives to express the present tense interpretation: one that deletes the copula or does not have it, and one that pronounces it:

29. a. ʔal-jaww-u     ha:rr-un hunna
    the-weather-NOM    hot-NOM here

‘The weather is hot here’.

b. ya-ku:nu     l-jaww-u     ha:rr-an     fi     S-Sayf-i
    PRES-be    the-weather-NOM    hot-ACC    in    the-summer-GEN

‘The weather is hot in the summer.’

On the other hand, verbless sentences show agreement in all φ-features:

30. Mohammd-un     mu’a:llim-un     w     l-bint-a:ni
    Mohammd:3sm-NOM    teacher:3sm-NOM    and    the-girl:F–DUAL:NOM
    Taliba-t-a:ni
    student:F–DUAL:NOM

‘Mohammd is a teacher and the two girls are students.’
The full agreement between the subject and the predicate in verbless sentences indicates that the predicate carries all features that the subject has: NUMBER, PERSON, GENDER and CASE. This full agreement is the result of a direct feature-valuing relation between the predicate AP or NP and the subject. Accordingly, the overt manifestation of ф-features implies that there is an AgrP where feature checking takes place in verbless sentences; an assumption that has been deduced by many researchers who worked on small clauses (e.g. Belletti, 1994; Siloni, 1997; Sportiche, 1995; Kayne, 1994; Cinque, 1990; Haegeman, 2006; among others). The difference between small clauses and verbless sentences on one hand and full clauses on the other would be the impoverished realization of the various functional heads in the former. As for Agr projections, the assumption is that all Agr projections assumed for full clauses are also present in small clauses. Due to the similarities between small clauses and verbless sentences, we will assume that there is an AgrP in verbless sentences as well.

Since the subject needs a theta role, it qualifies to be a probe. It can only get this role from the predicate, which, in turn, has unvalued ф-features, u-person, u-gender, u-number and u-case, that will all be valued by the subject. In this way, there is a mutual feature-valuing relation between the probe subject and the goal predicate.

The derivation takes place as follows. Verbless sentences project a PredP that incorporates the thematic roles (Ouhalla, 2005). The preposition fi ‘in’ in Pred merges with the DP l-bayt ‘the house’ to form the PP fi-l-bayt ‘in the house’. The PP then merges with the subject NP radjulun ‘man’ which needs to raise to [spec/TP] to check EPP(8). Due to the full agreement between the subject and the predicate in verbless sentences, the derivation must take place in AgpP. Following Akkal (1996), Benmamoun (2000) and Diouny (2007), we assume that AgrP is located above TP. On a par with vP/VP, I assume that AGPP projects little AgrP.
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31.
The Agr head has [+def] feature that attracts only definite NPs to move to [spec/AgrP] to check the unvalued [+def] feature. Therefore, the subject’s movement to that position takes place only at LF since the subject rajulun ‘man’ in (28b) is indefinite. By contrast, the Predicate fi-l-bayt ‘in the house’ moves to [spec/AGR] to check the agreement person, gender and number features.

T checks the u-case of the subject at LF and assigns a NOM case to it. Due to the full agreement between the subject and the predicate in verbless sentences, the predicate gets a NOM case as well as shown in (32) below.

32. ar-rajul-u mari:D-un

the-man-NOM sick-NOM

‘The man is sick’

However, the case marker on the whole PP in (28) is invisible since the NP l-bayt ‘the house’ gets a GEN case from the preposition fi ‘in’.

According to the copy theory of movement, unless it is motivated by additional convergence constraints of the phonological component, the pronunciation of a higher copy will always be favored over the pronunciation of a lower copy. Here, in verbless sentences where the subject is indefinite, the pronunciation of the lower copy is favored to the upper one. The indefinite subject gets its theta role assigned by the predicate in the thematic shell then it moves to [spec/TP] to check EPP and CASE leaving a copy behind. However, to check their φ-features, the predicate raises to [spec/AGRP], and subject needs to raise to [spec/AgrP]. Since [AgrP] has [+def] feature, the indefinite subject raises at LF but cannot move at PF, and PLC will force the lower copy to be spelled out instead.

6. Detached Accusative Object Pronouns:

We mentioned earlier that Arabic has four types of pronouns: some carry NOM case, some ACC case and other GEN case. Therefore, the inflection on these pronouns becomes redundant and no markings appear on them. Here, we will be concerned with detached accusative object pronouns. These pronouns are composed of two parts: ṭiyya + attached object pronouns:

33. a. ṭiyya+ka ‘ONE + YOU:M OBJ PRO’
   b. ṭiyya+ki ‘ONE + YOU:F OBJ PRO’
   c. ṭiyya+kum ‘ONE + YOU:PL:M OBJ PRO’
   d. ṭiyya+kunna ‘ONE + YOU:PL:F OBJ PRO’
   e. ṭiyya+ya ‘ONE + I OBJ PRO’
   f. ṭiyya+na ‘ONE + WE OBJ PRO’
   g. ṭiyya+hum ‘ONE + THEY:PL:M OBJ PRO’
   h. ṭiyya+humma ‘ONE + THEY:PL:F OBJ PRO’

The canonical word order for the declarative statement in Arabic is VSO because the addressee is ignorant about the occurrence of the event (Ibn Al-Nathim, 2000:91; Ibn Aqueel 1995:165; Az-zujaji 1959:24; and Al-Ashmoni 1955:55; as in (34a). However, for focus reasons, the subject or the object can
precede the verb as in (34b) and (34c), respectively. The Prepositional phrase can also move to higher positions (especially to the left periphery) for focus reasons as in (34d):

34. a. ya-zraʧ-u l-fallaːh-u:na Z-zaytuːn-a fi-l-urdun
   IMPF-3M-plant-IND the-farmer-PL:NOM the-olives-ACC in-Jordan
   ‘Farmers plant olives in Jordan’

   b. l-fallaːh-u:na ya-zraʧ-u:na Z-zaytuːn-a fi-l-urdun
      the-farmer-PL:NOM IMPF-3M-plant-PL:IND the-olives-ACC in-Jordan
      ‘Farmers plant olives in Jordan’

   c. Z-zaytuːn-a ya-zraʧ-u l-fallaːh-u:na fi-l-urdun
      the-olives-ACC IMPF-3M-plant-IND the-farmer-PL:NOM in-Jordan
      ‘Olives, farmers plant in Jordan’

   d. fi-l-urdun ya-zraʧ-u l-fallaːh-u:na Z-zaytoun-a
      in-Jordan IMPF-3M-plant-IND the-farmer-PL:NOM the-olives-ACC
      ‘In Jordan, farmers plant olives’

The fact that Arabic has a rich inflectional morphology allows such word order variation since the subject NOM inflection and the object ACC inflection make it easy to recognize them regardless of their positions in the sentence. However, if it happens that the subject and the object do not have overt CASE inflection due to having vowel endings, the addressee will adopt the canonical word order. So, the assumed interpretation for (35) is that Issa was generous to Musa and not the other way round.

35. ʔakram-a ʃiːsaː maːsa
    IMPF:3sm:be generous-IND Issa Musa
    ‘Issa was generous to Musa’

Now, let’s move to the detached ACC objects pronouns (henceforth DAPs). Since they are complements to verbs, they are assigned ACC case. However, unlike R-expression objects and attached ACC object pronouns (36a&b), DAPs cannot appear after the verb (37a):

36. a. Naːbud-u Allah-a (NP object)
    IMPF:1PL-worship-IND Allah-ACC
    ‘We worship Allah (the Lord)’

   b. Naːbud-u-ka
    IMPF:1PL-worship-IND-2SM:ACC
    ‘We worship you (the Lord)’

37. ʔa. Naːbud-u ʔiːyaka (attached ACC object pronoun)
    IMPF:1PL-worship-IND you:2SM:ACC
    ‘We worship you (the Lord)’

   b. ʔiːyaka, [tʃ naːbud-u tʃ] (attached ACC object pronoun)
       you:2SM:ACC IMPF:1PL-worship-IND
       ‘We worship you (the Lord)’
According to the copy theory of movement, the derivation of (37b) starts as in (37a), with the object pronoun pronounced in its base-generated position after the verb. The root verb merges with an affixal little v to form v’, which, in turn, merges with an external pro argument. The verb then moves to Asp⁰ to get the imperfective proclitic. Then, it raises to T⁰. The subject also raises to [spec/AspP] and [spec/TP], respectively. More importantly, DAP leaves its base-generated position and raises to some projection, presumably above TP, since it precedes both the verb and the subject. This movement leaves a copy in the foot of the chain. But why does DAP have to be spelled out in the head of the chain? And where exactly does it land? To answer these questions let’s consider the difference between (36b), that has an attached ACC object pronoun, and (37b) with DAP.

When the object comes after the verb it ascertains the occurrence of the event, and it also ascertains that the agent associated with the event acted that event onto the theme. However, the sentence does not negate the fact that the agent may have acted the same event onto some other theme. Therefore, (36b) indicates that ‘we worship Allah’ but it says nothing about whether we worship some other deity. The same is true when we say ‘John ate pizza’; we don’t know whether John ate something else. By contrast, the proposed object in (37b) has a focus and a restrictive reading; it indicates that it is only Allah that we worship. Our worshipping is restricted to Allah.

Nonetheless, this restrictive reading applies not only to DAPs, but also to all fronted NP objects. In other words, we haven’t explained why DAPs have to move. We only illustrated what semantic differences object fronting can add to a sentence. The question remains: why do DAPs have to move? Why is it ungrammatical to spell out these pronouns in situ? The answer has two folds. In terms of economy, (36b) is preferred over (37a) because it is shorter. The attached ACC pronoun involves only one element: the proclitic–ka. By contrast, DAP in (37a) involves a morphologically complex NP: Ɂiyya:+ the attached ACC pronoun ka. Therefore, (37a) is ruled out for economy considerations. Secondly, in addition to carrying CASE and φ-features, the root Ɂiyya has another feature; it has a strong Rest(rective) feature. Being unvalued, the goal Ɂiyya looks for a probe that has the same Rest feature in order to undergo a ‘check and delete’ operation. Adopting the split-CP hypothesis (Rizzi. 1997; 2004), we presume that there is a RestP, whose head has strong uninterpretable Rest and Foc features, hence attracting DAP, which itself contains a matching interpretable Rest and Foc features, to move into [spec/Rest] as shown in (38). At this point, chain reduction applies and only one copy of Ɂiyyaka, the upper one, remains in accordance with Franks’ (1998) argument that a chain is pronounced in the head position, with lower members deleted in PF, unless pronunciation in the head position would lead to a PF violation. The derivation of (37b) is sketched in (38).
38.

\[ \text{RestP} \]
\[ \text{\textit{\textsc{hiyoka}}} \quad \text{Rest'} \]
\[ [\text{Rest}] \quad [\text{Foc}] \]
\[ \text{TP} \]
\[ \text{pro} \quad \text{T'} \]
\[ [\text{present}] \quad \text{AspP} \]
\[ \text{na'} + \text{u} \quad \text{Asp'} \]
\[ \text{na'uddu} \quad \text{VP} \]
\[ \text{\textit{\textsc{waad}}} \quad \text{NP} \quad \text{\textit{\textsc{hiyoka}}} \]

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7. Conclusion
In this paper, it was demonstrated that copying in Arabic may result in pronouncing the head or the foot of the copying chain without causing the derivation to crash. Moreover, it was illustrated that Arabic sometimes creates a purely copy of φ-features in the form of a phonological pronominal element of the subject. Such a copy is usually represented by the default third person masculine singular or plural features. The study further argued that copying is triggered by feature checking. In addition, it was shown that the copy theory of movement can help solve ambiguous sentences by reconstructing copies in the foot or the head of the copy chain. The paper applied the binding principles to reconstruct copies at different positions in the sentence. Reconstruction made it possible to retrieve copies at LF. In most cases, copy operations gave rise to new syntactic structures and, thus, led to having different semantic interpretations of the sentence.
نسخ الخصائص النحوية للعدد والجنس والضمير في اللغة العربية

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الملخص

يقدم هذا البحث دراسة لنظرية النسخ في العربية الفصحي، ونقاسم في هذه الدراسة أدلة على أنه زيادة على نطاق أعلى رابط صوتي للكلمة، فإن العربية قد تنطق أحياها النسخ الدنيا بدلاً من العليا دون إخلال بالبنية النحوية. زيادة على ذلك، نبين أن العربية تلتوج أجياها إلى الإتباع بعمر عن نسخ جميع خصائص الفاعل، المبتدأ (العدد، والجنس، والمتبكل، والحالة الإعرابية)، كما نبين أن نظرية النسخ يمكن أن تساعد في حل الجمل الغامضة، وذلك عن طريق إعادة بناء النسخ الأصلية إما في أعلى سلسلة النسخ أو أسفلها. وتطبيق مبادئ الإلزام (binding principles) نوضح كيف أن عملية إعادة بناء النسخ تساعد في إيجاد البنية النحوية والدلالة الأصلية. كما نشرح أن في معظم الحالات فإن عمليات النسخ إما أن تضيف خصائص نحوية و/أ دلالية جديدة أو أنها تتسبب في تفسيرات مختلفة للجملة، والتركيز على نقاط النسخ الدنيا نناقش ضمائر المفعول به المنفصلة والمتصلة، ونبي أن جميع عمليات النسخ تنسجم مع بهية المطابقة الخطية لـ كين (1994).

الكلمات المفتاحية: النسخ، العربية، النحو، علم الدلالة، بهية المطابقة الخطية، مبادئ الإلزام.
Endnotes:

1. Adjacency Condition is similar to Rizzi’s (1990) ‘relativized minimality’ which roughly states that a variable of a given kind must be bound by the closest available operator of the same kind.
2. Arabic has some patterns that indicate mutuality, reciprocity and participation such as tafaːsala, ḫafaːsala, faːsala,
3. They are mainly encoded in nouns and pronouns.
4. Some syntacticians (e.g. Ouhalla 1993, Benmamoun 2000, and Soltan 2006) considered this pronoun as equivalent to the presence of ‘be’ in the present.
5. Nominal sentences, here, refer to sentences that have non-verbal predicates. Benmamoun (2000) and Fassi-Fehri (1993) dub it verbless sentence. They are characterized by the absence of an overt verbal copula in the present tense (Benmamoun 2000) and contain only a subject NP and a predicate which can be NP, PP, AdjP, AdvP or a CP (Attia 2008).
6. In nominal sentences, in most cases the subject needs to be definite and the predicate indefinite; if both were definite or indefinite, the predicate counts as an adjective:
   i. ʔar-radjul-u mari:D-un (nominal sentence)
      the-man-NOM sick-NOM
      ‘The man is sick’
   ii. (ʔar)-radjul-u (l)-mari:D-u (NP (N +adj))
      (the)-sick-NOM (The)-man-NOM
      ‘(The) a sick man’
7. Bakir 1980 argues that there is a verbal copula in verbless sentences but it is not lexically realized either because it has undergone deletion or it is phonologically null. Fassi-Fehri (1993) suggests that the copula is present at D-structure in verbless sentences but it fails to lexicalize because it carries an unmarked T feature, i.e. [-past]. Benmanoun (2000) maintains that the present tense in verbless sentences is specified as [+D] only. The fact that present tense, unlike past tense, is not specified for a [+V] feature, implies that the copula is not needed to check that feature.
8. I adhere to Benmamoun’s (2000) proposal that verbless sentences project a TP that has a null T element.
9. ʔal assimilates to the first sound of the root word if it started with a ‘sun sound’. It is named after the first sound in the Arabic word ʃams ‘sun’. These sounds are [t,θ,d,ð,r,z,s,ʃ,d,t,ð,l,n]. All these sounds are produced in the middle of the mouth. The other sounds are called the ‘moon sounds’ after ‘q’ the first sound in qamar ‘moon’ which does not trigger ʔal assimilation. Orthographically, I will use ‘ʔal’ in sentence-initial position and ‘l-’ sentence medially.
10. Since Arabic is a pro-drop language that has rich verbal conjugation, the subject is a pro that has the same features as the proclitic na-.
11. Compared also to (37b), (36b) is still more economical because (37b) involves the movement of the object from the base-generated complement position to a left-dislocated position.
12. I consider it Focus, rather than Topic since it represents new information not familiar to the hearer.
References


