

## Investigating Control in English and Arabic\*

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**Abstract:** *This paper attempts to account for the syntactic phenomenon of control that obtains between the empty subject position of nonfinite subordinate clauses and an antecedent in the matrix clause. Both Arabic and English display such constructions. The paper discusses the standard mechanism proposed to account for control – i.e. positing the null element **PRO** in the empty position, which is bound to an antecedent via standard binding principles. This widely accepted analysis for English cannot be maintained for Arabic control constructions. It is argued that the pronominal **pro** is a more adequate candidate to fill the empty positioning this language if we take the phenomenon of control to belong to the semantics of the individual control predicates rather than a binding relation that should be accounted for on purely syntactic grounds.*

### 1. Introduction

Control may be defined as the referential relation between an empty argument position and a preceding argument. In such cases the unexpressed argument of a predicate in a subordinate clause – the controllee, is interpreted as co-referential to one of the arguments of the predicate of a matrix clause – the controller. Control structures abound in human languages and they have been the focus of a long line of research investigating various issues in this phenomenon. These mainly concern the questions of distribution and interpretation. Where do we find such structures and the reasons that could be elicited for this restricted distribution, and how the controlled unexpressed arguments get interpreted; where and how they get their interpretation, and how much variation that interpretation tolerates.

The study of the distribution and interpretation of control structures has given rise to the question about the proper level at which they could be accounted for. Is control to be considered a syntactic phenomenon to be accounted for by purely syntactic mechanisms? Alternatively, would it be more appropriately accounted for in terms of the semantic properties of the controlling predicates, i.e. predicates that require control structures in their complements? Deeper insights into control structures seem to direct us towards the second option. The differences observed between the various control predicates make the syntactic account less tenable or natural. They indicate that control may be more adequately described as a function of individual predicates, as will be discussed later.

## 2. Distribution

As for their distribution, these empty (null) arguments are located solely in the position of the subject of infinitival and gerundive subordinate clauses, as is seen from the following sentences in English.

- (1) a. John tried [--- to see Mary]  
 b. Mary asked John [-- to meet her]  
 c. John was anxious [-- to meet her]  
 d. Mary began [--- writing a poem]  
 e. John phoned Mary after [--getting her letter]

The sentences above contain predicates (verbs and adjectives) that take clausal complements or adjuncts of the nonfinite infinitival and gerundive types. In each one of these subordinate clauses, the subject position is empty, but is understood to refer to one of the arguments of the matrix predicate, with the subject argument in (1.a), (1.c), (1.d), and (1.e), and with the object argument in (1.b). The subordinate clauses are infinitival complements in (1.a), (1.b) and (1.c), a gerundive complement in (1.d) and a gerundive adjunct in (1.e).

Similar facts seem to obtain in Arabic. Conventionally, Arabic is said to have non-finite clauses of two types: infinitival clauses which begin with the complementizer *?an*, and have imperfective verbs in the so-called subjunctive mood and gerundive clauses whose verbs have the morphological form of a verbal noun. The following sentences exhibit the same structural phenomenon seen in (1).

- (2) a. haawala zayd-un [?an yukallima --- muhammad-an]  
 tried Zaid-nom [ to talk 3SM ---Mohammed.-acc]  
 'Zaid tried to talk to Mohammed'
- b. sa?al-tu zayd-an [?an yaqra?a --- al-risaalat-a]  
 asked-I Zaid-acc[to read 3SM--- the-letter-acc]  
 'I asked Zaid to read the letter'
- c. hind -un harii?at-un 'alaa [?an tukmila --- al-mahammat-a]  
 Hind-nom anxious-nom on [ to finish3SF --- the-task-acc]  
 'Hind is anxious to finish the task'
- d. bada?a zayd-un [kitaabat-a --- risaalat-i-hi]  
 began Zaid-nom [ writing-acc --- thesis-acc-his]  
 'Zaid began writing his thesis'
- e. saafarat hind-un ba'da [samaa'-i ----al-xabar-i]  
 travelled Hind-nom after[hearing-gen ---- the-news-gen]  
 'Hind traveled after hearing the news'

In these sentences, no overt subject is found in the infinitival or gerundive subordinate complement and adjunct clauses. Nevertheless, it is understood to refer to the subject of the matrix predicate in (2.a), (2.c), (2.d), and (2.e). In (2.b) the unexpressed subject refers to the object of the matrix predicate.

Analogous empty objects that are understood to be co-referential with one of the arguments of the matrix clause are not allowed. This can be clearly seen from the ungrammaticality of (1.f) in English and (2.f) in Arabic where the empty unexpressed object is meant to be co-referential to the object of the matrix predicate.

- (1) f. \*John wanted [Mary to meet ---]  
 (2) f. \*?araada zayd-un [?an tuqaabila hind-un ----]  
       wanted Zaid-nom [to meet3SF Hind-nom ---]  
       'Zaid wanted Hind to meet'

### 3. Descriptive Accounts

3.1. Standard Theory: How is this accounted for? Control, the name given to these structures has been the subject of on-going study. Peter Rosenbaum is credited as the first to draw attention to such structures in English and to provide an extensive account for them in his Ph.D. dissertation as early as 1967, (Rosenbaum 1967). There, he suggested that the empty position be filled in the deep structure with a lexical NP that is identical to one of the NP's in the higher clause, and devised a transformational rule to delete it afterwards under identity with the antecedent NP, this being either the subject or the object of the matrix clause. The choice between them was regulated by the Minimal Distance Principle. This operation was called, Equi-NP-deletion or Equi for short<sup>1</sup>.

3.2. Government–Binding: Within Government–Binding theory of the eighties, such operations were no longer licensed. A separate module of the grammar was devised to account for the control relationship. A special null category is postulated to fill the empty position of the subject of the nonfinite complement and adjunct clauses in English. This is the null anaphor PRO. sentence (3.a) would have the structure (3.b)

- (3) a. Mary tried to leave.  
       b. Mary tried [PRO to leave]

Why do we have to postulate an empty grammatical formative like PRO here? Couldn't the position be left empty? Why posit a particular empty position in the first place? An empty position is posited to satisfy EPP (External Projection Principle) which stipulates that a predicate must have an external argument. Why posit a new element PRO to be added to other empty categories, as NP-trace, wh-trace, and the empty pronominal *pro*? Couldn't this position be originally filled with one of the DP's that surface in argument positions in the matrix clause, and after the movement of the DP to the matrix clause a trace be left in its place as in (3.c)?

- (3) c. Mary<sub>i</sub> tried [t<sub>i</sub> to leave]

This is excluded because it will violate  $\bar{e}$ -criterion, which states that any argument must have one  $\bar{e}$ -role. By movement, the DP *Mary* will have two such

roles: the original *agent* role assigned by the complement verb *leave*, and the role of *experiencer* assigned by the matrix verb *try*, which it will assume when it moves to the subject position of the higher clause. Each of these predicates assigns a different thematic role to its external argument.

Within this framework, movement of DP's to argument positions would therefore be limited to those positions to which no  $\theta$ -role is assigned in order to satisfy the  $\bar{e}$ -criterion. This is why movement is allowed in (4) below.

(4) John<sub>i</sub> seems [ t<sub>i</sub> to be enjoying himself]

Raising predicates like *seem*, *appear*, *likely*, etc do not assign a  $\theta$ -role to their external arguments. Therefore, in English this position is filled by an expletive, e.g. *it*, *there*, or by a DP moving from somewhere else in the sentence. This is not the case in sentences like (3). Such sentences cannot be the result of movement. This is how the difference between the two structures, termed raising and control was accounted for.

PRO was seen to behave both as an anaphor and pronominal in these structures. Control structures are of two types: obligatory control and non-obligatory control. In the first type the subject of the subordinate clause must be co-referential with either the subject or object of the matrix clause which functions as its antecedent, as in the examples in (1) and (2) above. The second type is exemplified below.

(5) John thinks it is important [PRO-to dress properly]

Here, PRO needs not have an antecedent in the sentence. It could be interpreted as co-referential to (controlled by) the DP *John*, or to have generic reference, or to refer to some previously mentioned antecedent in the discourse. The antecedent is not local. That is, it is not within the binding domain of PRO. PRO is within a tensed clause and it is not c-commanded by any arguments in the higher clause. While PRO, in (3) for example, behaves like an anaphor, abiding by binding principle A, it is a pronominal in (5), abiding by principle B.

To account for this strange state of affairs, which stands as a stark violation of binding theory it was argued that PRO acquires this property of being an anaphor and pronominal simultaneously by virtue of its being ungoverned. This is the PRO-theorem (Chomsky 1981). Being tenseless, nonfinite IP's lack a governing head and therefore, their subjects are ungoverned. If so, then they need not adhere to principles of binding theory that are defined in terms of government. This is where the null category PRO fits. It will also satisfy the case requirements. The position is caseless and therefore phonologically realized NP's cannot fill it as the case filter stipulates.

Furthermore, it was assumed that Tense in nonfinite clauses does not assign case – it is not a governing head – to the subject of these clauses, therefore the subject position must be empty in adherence to the case filter which stipulates that phonologically realized DP/NP's must have case. Therefore, the null, phonologically unrealized element PRO is the only suitable element to fill

this position. Why, then, is a lexical DP/NP allowed in the subject position of the complement clause in sentences like (6)?

- (6) John hoped [for Mary to get the job]

Because it is assigned/checks its case by the prepositional complementizer *for*. That is the reason it is assigned the accusative case as the pronominal form (*her*) indicates. By the same reasoning, we deduce the ungrammaticality of positing PRO in object positions of subordinate clauses as seen in sentence (1.f) repeated as (7) below.

- (7) \* John<sub>i</sub> wanted [Mary to meet PRO<sub>i</sub>]

The object of *meet* receives accusative case from the verb; it is, therefore, a case position that cannot be filled by PRO. It requires to be filled with a lexical DP/NP.

The interpretation of PRO is determined by the Minimal Link Condition (MLC), and its forerunner, Rosenbaum's Minimal Distance Principle (MDP) stating that anaphors are indexed with the closer potential antecedent.

- (8) Mary<sub>i</sub> hopes [PRO<sub>i</sub> to see her son]  
 (9) The commander ordered the soldiers<sub>i</sub> [PRO<sub>i</sub> to attack]

In (8) the closest DP/NP to PRO is the subject of the matrix clause *Mary*, and it is thus chosen as the antecedent of PRO. In (9) the closest DP/NP to PRO is the object *the soldiers* and therefore functions as its antecedent. In adjunct subordinate clauses, PRO is subject-controlled.

- (10) John<sub>i</sub> hired Mary in order [PRO<sub>i</sub> to please her parents].

3.3. Minimalist Program: A more recent account, within the Minimalist Program does away with government and accounts for PRO distribution as a case-theoretic phenomenon, thus abandoning the PRO-theorem. Chomsky and Lasnik (1993) suggest that PRO has case, but it is null case, a case that can only be checked by nonfinite Tense, which we find in such subordinate clauses as the ones under discussion here. Lexical DP's cannot bear null case. Other null elements – *pro*, *wh*- and NP- traces cannot either. None of these elements can occupy the position of the subject of a nonfinite clause because in these clauses, [Spec T], where they get their cases checked cannot check any other case but null case. Under this assumption, PRO is either an anaphor or a pronominal depending on whether it is obligatorily or non-obligatorily controlled.

One consequence of this proposal is that it will mean that PRO must occur in the position of the subject of all nonfinite clauses since it is the only element with the appropriate case to check in this position (Martin 2001: 144). Note that in cases where a lexical subject appear in this position, like (6) above, the complement clause contains the prepositional complementizer *for*, which checks the accusative case of the subject DP. No control is at work here.

Another consequence is that a movement analysis of control as the one discussed below would not be tenable unless some major constraints are relaxed.

This is because once the subject position is a case position - i.e. null case, then nothing that fills it can move out of it to another argument position. Movement is blocked from a case position because it violates Last Resort. According to Chomsky (1995), movement is only permitted for a DP out of a caseless position – where it cannot check its case - to a case position so that it could check its case features. The case filter states that a phonologically realized DP must have case. Otherwise the derivation will crash. It is argued that the position of the subject of nonfinite complements of raising predicates, e.g. sentence (4) above, is a caseless position and this is the reason why raising to the subject position of the matrix clause is possible from this position.

In the spirit of reductionism inspired by the Minimalist Program, attempts have been made to provide a unified account for control and raising structures in terms of movement. As Hornstein (1999), and others, propose, obligatory control can be reduced to movement from the subordinate subject position to an appropriate argument position in the matrix clause in a way similar to that assumed for raising-to-subject structures. What is left in the original position is a NP-trace and the interpretation proceeds in the usual way of anaphor interpretation. Non-obligatory control structures like that in (5) above have the empty pronominal *pro* in the position of the subject of the nonfinite subordinate clause, with this element getting its interpretation via principle B of the binding theory.

This has the theoretical advantages of eliminating PRO, PRO-theorem,  $\theta$ -criterion, and the control module from the grammar. However, it does so not without cost. It licenses the target of the movement in control structures to be a  $\theta$ -position. The moved DP will acquire a second  $\theta$ -role when it moves to the matrix clause. This violates  $\bar{e}$ -criterion, which states that an argument has one and only one  $\theta$ -role. Note that this is the main difference between raising and control structures. Therefore, the  $\theta$ -criterion has to be abandoned and  $\theta$ -features would have to be considered checkable features in the different sites that the argument finds itself, an unwarranted innovation (Landau 2003). English and other languages present abundant evidence that such movement proposal for control structures cannot be maintained. It suffers from problems of over-generation and under-generation. It will not explain obvious asymmetries between raising and control structures, in passivization for instance; it will not be tenable in cases of implicit controllers, or cases of already filled controller positions, or controllers that do not c-command the trace, or cases where movement has to be out syntactic islands, and so on<sup>2</sup>.

#### 4. Accounting for Control Structures in Arabic

At first glance, Arabic seems to exhibit similar structures as those exhibited in English. This is seen in the sentences in (2) above where the subject position of the non-finite complement and adjunct clauses is unoccupied. Nevertheless, it still gets an interpretation as co-referential with one of the arguments of the matrix predicate. Accordingly, one may tend to propose an analysis to these

structures similar to that proposed for their English counterparts. A null syntactic formative should be posited in this empty position so as to fulfill the EPP requirement that all predicates must have an external argument – a subject. It will also make it possible to assign the appropriate interpretation through co-referentiality with an antecedent. Nonfinite infinitival and gerundive clauses do not have a governing head, so their subjects are ungoverned, or under Chomsky and Lasnik 1993's more recent proposal, the Tense element of these clauses checks only null case. PRO is the candidate. Thus, we would expect (11a) and (12.a) to have structures (11b) and (12b) respectively.

- (11) a. haawala zayd-un ?an yukallima hind-an  
 tried Zaid-nom to talk 3SM Hind-acc  
 'Zaid tried to talk to Hind'  
 b. haawala zayd-un<sub>i</sub> [?an yukallima PRO<sub>i</sub> hind-an]
- (12) a. ?aqna'a zayd-un hind-an ?an tuqaddima al-?imtihaan-a  
 persuaded Zaid-nom Hind-acc to present 3SF the-test-acc  
 'Zaid persuaded hind to take the test'  
 b. ?aqna'a zayd-un hind-an<sub>i</sub> [?an tuqaddima PRO<sub>i</sub> al-?imtihaan-a]

A case-less, ungoverned - or null case - element PRO that is bound to its commanding antecedent – in the conventional binding mechanism, will take care of the distribution of the empty position in question. The antecedent is the closest argument in the matrix clause to PRO in accordance with MDP, or MLC. Hence, in (11) we have a subject controller and an object controller in (12). Gerundive clauses will receive similar analysis.

However, Arabic, like English, exhibits lexical subjects in this position. This is the case in (13).

- (13) ?amil-tu ?an yuŠbiha muhammad-un tabiib-an  
 hoped-I to become 3SM Mohammed-nom physician-acc  
 'I hoped for Mohamed to be a physician'

The unexpected but grammatical occurrence of such lexical subjects in these clauses raises the same question in connection with similar English sentences like (6) above. However, the two structures cannot receive a unitary analysis because of their difference. There, it was suggested that the lexical subject DP receives/checks, its accusative case from the prepositional complementizer *for* which nonfinite infinitival clauses with lexical subjects are preceded with.

In Arabic, however, the lexical subject in the corresponding clauses is preceded by no such case-assigning/case-checking prepositional complementizer. So, how could one explain the case with which these subjects are inflected? One might suggest that a null preposition, similar to the English *for*, be posited to provide the proper case-assignment/checking context (Martin 2001: 155). However, this would not work either. Prepositions in Arabic assign/check genitive case. They do not assign/check nominative case, which is what these lexical DP's exhibit. Nominative case is conventionally assigned/check by Tense. This is the same case that DP's exhibit in subject positions of finite clauses.

In the face of this similarity in the case of the subject DP between finite clauses and the *?an-* type nonfinite clauses we may want to reconsider the status of the latter. It would be rather far-fetched to consider these clauses finite clauses. The differences in the verb form would indicate otherwise. However, one can suggest that these clauses have tense, contrary to the conventional belief that they are [-tense]. This suggestion was made in (Stowell 1982) where he argues that infinitival clauses in English indicate modal tense, more like the modal *would*. It is not surprising that in such cases nonfinite T does assign/check case in an analogous fashion to finite T. Martin (2001: 152) proposes that English control infinitival clauses are [+tense] and that this Tense assigns/checks null case. This is the difference between finite T and non-finite T in English as alluded to above.

However, Arabic seems to differ here. Tense seems to assign/check nominative case in both types of clauses: finite clauses and *?an-* type non-finite clauses, that are conventionally called infinitival clauses. This is evidenced by the nominative case inflection that the subject DP's of both clauses are marked with. Nevertheless, we need to remember here that the subject position of these non-finite clauses can also contain no overt lexical DP. These are the cases where we postulated PRO as a working tentative hypothesis. Doesn't this last proposal contradict the earlier one about PRO having null case, and that it is only this element that is assigned/checked for this case? Null case is a defining mark of PRO, as the above discussion indicates. To eliminate this contradiction we seem to be led to the suggestion that what fills the empty subject position in control infinitival clauses in Arabic is not PRO, but the null pronominal *pro* above

What makes this suggestion more than just a terminological difference? One thing that makes the postulation of *pro* in this position plausible is the fact that it is licensed in finite clauses like

- (14) a. katabuu rasaa?il-a-hum  
wrote-3P letters-acc-their  
'They wrote their letters'  
b. [katabuu pro rasaa?il-a-hum]

where the subject is dropped and is substituted by a null pronominal element<sup>3</sup>. This phenomenon is not limited to Arabic. Many other *pro*-drop languages exist, in which the drop of the subject is made possible by the rich agreement morphology on the verb<sup>4</sup>. The verb in Arabic infinitival clauses is inflected in the same way finite verbs with *pro* subjects are inflected with: person, gender, and number. This would argue that the finite and infinitival clauses with non-overt subjects be given the same analysis.

A major problem in this suggestion concerns the difference between the two null elements PRO and *pro* is their binding properties. The first is an anaphor and abides by principle A of binding theory, while the second is a pronominal and abides by principle B. Is it plausible to posit *pro* in a position that is interpreted as co-referential to an antecedent in the matrix clause? Up to



now, we have assumed that in cases of obligatory control only an anaphor can fill this position because only anaphors can be bound in the sentence. Since the nonfinite clause in which the empty position occurs is not taken as a governing/binding domain -- it is assumed to be a TP; the matrix clause is taken as the only governing/binding domain – i.e. IP - in which an anaphor should be bound. Under this assumption *pro* cannot be posited in the subject position because it should be free in the sentence.

This looks like an impasse: PRO, the anaphor, cannot be posited in the subject position because predicates like *?amila* ‘hope’, *?araada* ‘want’, *tawaqqa’a* ‘expect’ allow lexical subjects to fill the position, and positing *pro* will violate binding principle. But it is only so if the assumption about the English nonfinite clauses being only TP’s is extended to Arabic infinitival clauses. If these are analyzed, instead, as IP’s then they would be binding domains and positing *pro* as their subject is not going to make any problem. It may be bound in the higher matrix clause and still be free in its nonfinite clause – its binding domain. The analysis is supported by the fact that these clauses are preceded by the complementizer *?an* and the verbs exhibit full agreement morphology. How would we then account for these cases of obligatory control?

##### 5. How is Control Achieved

In this proliferation of analyses proposed to account for control structures, the question remains, how is control achieved. The discussion above seems to have provided the answer as far as control in English is concerned. Control, in this language is based on formal grounds, i.e. by employing the conventional binding mechanisms ( principle A of binding theory) that relate the anaphor PRO to its antecedent in the matrix clause within its local binding domain, and within the stipulations of MLC/MDP, in cases of obligatory control., For cases of non-obligatory control, another formal mechanism ,i.e. principle B of binding theory, regulates the assignment of the proper antecedent to the *pro* pronominal, which is proposed to fill the subject position of the nonfinite clauses in such structures. However, on closer look, we will find that this account is not as adequate as it seemed to be. This is what we will attempt to show presently.

In Arabic, things are a little more complicated. A formal account for control is not available given the issues that we discussed above. The facts of Arabic have lead to propose an analysis for control structures that does not make use of an anaphoric element – PRO - that fills the position of the subject of nonfinite clauses, and which will provide an identical mechanism to that suggested for English. If Arabic did have such an anaphoric element, then it would have had an identical formal base for the referential relation between the empty position and an argument in the matrix clause. However, it was argued above that the anaphor PRO is not the appropriate null element to fill the vacant position, whether in obligatory or non-obligatory control structures. We found sufficient reasons to posit the pronominal *pro* in that position consistently in both cases. This null element will be free to refer to an antecedent inside or

outside the matrix clause. In cases of non-obligatory control, there should not be a problem. As for cases of obligatory control, the question arises as to what formal mechanism can be proposed to regulate the coreferential relation between the empty subject position of the subordinate infinitival clause and one of the arguments of the matrix clause.

How could we ensure that this subject is co-referential to one of the arguments of the matrix clause? Like English, Arabic has predicates that require this obligatory control, e.g. *ħaawala* 'try', *tamakkana* 'be able to', *?istataa'a* 'can', *kaada*, 'about to' *?awšaka* 'about to'. These are subject control verbs, verbs where the subject of their complements is obligatorily controlled by their subject arguments. There are others which may be object control predicates, e.g. the transitive verbs *?aqna'a* 'persuade', *?amara* 'order', *sa?ala* 'ask', etc.

- (15) *?awšaka zayd-un* [ *?an yunjiza pro* al-mahammad-a]  
 about to Zaid-nom to achieve-3SM the-task-acc  
 'Zaid was about to achieve the task'
- (16) *yastatii'u muhammad-un* [ *?an yatakallama pro* al-faransiyyat-a]  
 can Mohammed-nom to speak-3SM the-French-acc  
 'Mohamed can speak French'
- (17) *?amara al-qa?id-u al-junuud-a* [ *?an yahjumu pro* ]  
 ordered the-leader-nom the-soldiers-acc to attac3P  
 'The commander ordered the soldiers to attack'

In these sentences, the subject position of the subordinate clause is obligatorily empty. Lexical DP's cannot occupy this position. The covert subject is necessarily co-referential with the subject argument of the matrix clause in (15) and (16) and with the object argument of the matrix clause in (17). How can we ensure this when the null element that we propose to fill this position is the empty pronominal *pro*, which must be free in its binding domain? An element like this may be free or bound to any of the arguments of the higher clause. It may be equally bound outside this clause. We need to look closer to find out whether other factors are responsible for this coreferentiality. The legitimacy of this search gains more motivation if it were found that the purely syntactic account that is being entertained is less adequate than it looks.

In both English and Arabic, we find sentences that point to the inadequacy of a formal syntactic account of control. They raise two types of objections to this account. One group stands in clear violation of the locality conditions that our formal account is based on, i.e. MLC/MDP. The other is that of sentences for which such an account is technically impossible to invoke because they exhibit control without a controller.

The first problem that this formal account faces comes from those transitive predicates, which exhibit subject control and not object control, as the formal account would predict, and which we find in both languages. Verbs like 'promise' in English, and its Arabic cognate *wa'ada* are examples of such predicates.

- (18) a. John<sub>i</sub> promised Bill [ PRO<sub>i</sub> to obey the orders ]  
 b. \* John promised Bill<sub>i</sub> [ PRO<sub>i</sub> to obey the orders ].

- (19) a. wa'ada zayd-un<sub>i</sub> hind-an [<sup>?</sup>an yu'idda *pro*<sub>i</sub> al-ta'aam-a ]  
 promised Zaid-nom Hind-acc [to prepare-3SM pro the-food-acc]  
 'Zaid promised Hind to prepare the food'  
 b.\* wa'ada zayd-un hind-an<sub>i</sub> [<sup>?</sup>an tu'idda *pro*<sub>i</sub> al-ta'aam-a ]  
 promised Zaid-nom Hind-acc [to prepare-3SF pro the-food-acc]

These verbs have been treated as 'marked' as far as their control properties are concerned since they do not seem to obey the formal mechanism devised for the establishment of control. They are transitive verbs, yet they do not assign object control as other transitive verbs like *order* and its Arabic cognate *?amara* do, as in (9), repeated as (20) and (21) below, but they require subject control.

- (20) The commander ordered the soldiers<sub>i</sub> [PRO<sub>i</sub> to attack]  
 (21) ?amart hind-un zayd-an<sub>i</sub> [<sup>?</sup>an yu'idda *pro*<sub>i</sub> al-ta'aam-a ]  
 ordered Hind-nom Zaid-acc [to prepare-3SM pro the-food-acc]  
 'Hind ordered Zaid to prepare the food'

However, classifying these cases as an exception seems to evade the issue, certainly, when we know that they are more common than they have been assumed before.

The verbs *promise* and its Arabic cognate are not the only verbs of their kind in these languages. Other verbs in English and Arabic share this 'exceptional' control property with them. These verbs consist of two subgroups: verbs of commitment, e.g. English *promise, vow, agree, threaten, pledge, contract, obligated*, and others; and Arabic *wa'ada, ?aqsama, ?ittafaqa, haddada, ta'ahhada* etc. The second subgroup is that of verbs of request for permission, e.g. English *beg, plead, and petition*, and Arabic *sa?ala, tawassala*. In this second subgroup control may be shifted due to pragmatic factors such as authority relation (Landau 2003:480). A third subgroup may be added; these are verbs like *propose* in English, and *'arada* in Arabic. All these verbs share with *promise* the fact that they violate the formal locality condition proposed to account for the control relationship, the argument that is closer to the controllee, i.e. subject of the nonfinite subordinate clause, is not the controller. They also share with this verb the property that the controller is the source of the *pledging, vow, promise, agreeing, contract, pleading, proposal* etc<sup>5</sup>.

The suggestion that control is not a purely syntactic property, but rather a thematic property of the predicate, gains support from the absence of control shift. In these verbs, control does not shift from one argument to another when these arguments change their syntactic position. Nominal structures in English and sentences with object clitics in Arabic show this clearly.

In English, nominal structures that correspond to the above verbs show some freedom in the syntactic position that the arguments occupy. If the control relationship were formally based, we would then expect the controller to differ depending on which argument occupies the syntactic subject position. However, this is not what we actually find. The controller is always associated with the source of 'promise, agreement, vow, etc. regardless what syntactic position this may show up in.

- (22) a. Susan<sub>i</sub> promised Bill [ PRO<sub>i</sub> to control herself/\*himself]  
 b. The promise to Bill from Susan<sub>i</sub> [PRO<sub>i</sub> to control herself/\*himself].  
 c. Bill got a promise from Susan<sub>i</sub> [ PRO<sub>i</sub> to control herself/\*himself].  
 d. Susan<sub>i</sub> made Bill a promise.  
     What was it?  
     It was [PRO<sub>i</sub> to control herself/\*himself].

Note that in (22d) the controller is even outside the sentence that contains the empty subject position – the controllee.

When the object in Arabic is pronominal, it is cliticized to the verb as a bound morpheme and it thus precedes the subject. The two arguments exchange their position in relation to the verb. However, in sentences with matrix verb *wa'ada* and other verbs of the same group, which were called subject control verbs (like sentence (19a) above), a change like this would not move the control relationship from one argument to the other. The argument which controls the subject of the subordinate clause remains so irrespective of its position in relation to the controllee. In these cases we do not encounter control shift. The post-posed argument remains the controller. This is what we find in (19.c)

- (19) c. wa'ada-haa zayd-un<sub>i</sub> [ʔan yu'idda *pro*<sub>i</sub> al-ta'aam-a ]  
 promised-her Zaid-nom [to prepare-3SM *pro* the-food-acc]  
 'Zaid promised her to prepare the food'

Again, this tells us that control does not obey any locality conditions. It remains with the same argument no matter where it is situated in the matrix clause. In the case of *wa'ada*, and similar verbs of 'commitment', control is linked to the argument that refers to the source of commitment

Even English verbs like, *order*, *instruct*, *request*, *ask*, which exhibit object control, in accordance with the MLC/MDP show that control is not really linked to, or based on formal constraints. It is true that their object arguments, which are the closest to the subject of the complement nonfinite clause, do control this subject as in (20) above, but like the *promise*-verbs, these verbs do not show any control shift when their arguments change their syntactic position. Control remains with the recipient of the order, request, instruction, etc. This can be clearly seen from their corresponding nominal structures.

- (23) a. Bill ordered Susan<sub>i</sub> [PRO<sub>i</sub> to control herself/\*himself]  
 b. the order to Susan<sub>i</sub> from Bill [PRO<sub>i</sub> to control herself/\*himself].  
 c. Bill gave Susan<sub>i</sub> an order [PRO<sub>i</sub> to control herself/\*himself].  
 d. Bill gave Susan<sub>i</sub> an order.  
     What was it?  
     It was [PRO<sub>i</sub> to control herself/\*himself].

Here again control seems not to follow from formal principles. Had it been so, the controller would have changed from one argument to another in accordance with which is the closest c-commanding DP to the empty subject of the subordinate clause. In the above sentences, control remains with the recipient of the order, regardless of its position. In the case of (23d) it is even in another

sentence. Control seems to be more linked to thematic roles than to purely formal constraints.

The same is true in Arabic. A change in syntactic position does not cause any control shift from one argument to another in sentences with verbs of object control like the verb *?amara* 'order', and other verbs of request. The controller is the object argument. It is the nearest, in distance, to the empty subject of the infinitival complement clause. This is the case in sentences like (21) above. However, if the controller object comes before the subject, as, for example, when the object is a bound pronoun suffixed to the verb, we do not encounter control shift. The object argument remains the controller even though it is now further away from the subject of the complement clause – i.e. the controllee, as in (21.a)

- (21) a. *?amarat-hu<sub>i</sub> hind-un* [*?an yu'idda pro<sub>i</sub> al-ta'aam-a*]  
 ordered-him hind-nom [to prepare-3SM pro the-food-acc]  
 'Hind ordered him to prepare the food'

Control does not move to the subject '*hind*', which is closer to the controllee. It remains with the argument that refers to the receiver of the order.

The second problem that a purely syntactic account for control faces is that of sentences in which there is a controllee but no controller. In these sentences the empty subject of the subordinate clause is controlled by a non-existent, or implicit argument in the matrix clause. In a case like this control cannot be based on a c-command relation between two entities since one of these entities does not exist at the syntactic level, the level at which a locality relation is established. Culicover and Jackendoff (2001) have argued against a movement analysis of obligatory control by citing such cases to show that there is nothing that could have moved, because there is no explicit controller. Sentence (24) has an implicit dative object, e.g. '*to his friends*', which controls the empty subject of *return*.

- (24) *John<sub>j</sub> shouted [PRO<sub>i</sub> to return later].* ( Landau 2003)

This phenomenon, which is commonly attested in different languages, has motivated a lot of research on the level where the implicit argument is represented. There is a general agreement that it should not be represented in the syntax, say, as *pro*, (Rizzi 1986). If so, then no syntactic relation between controller-controllee could be established here. Control has to be established at another level.

Sentences like (25) below provide another instance of implicit control. In this sentence, the subject of the subordinate verb *gain* is understood to be the person who is doing the treatment.

- (25) This lenient treatment of the terrorists [in order PRO to gain some popularity] is not going to get you anywhere.

At the syntactic level, there is no overt controller to the subject of *gain*, i.e. there is no DP representing the subject of *treatment* in this sentence. The position of the specifier is occupied by the determiner *this*. Therefore, we cannot suggest any formally based relation to exist between two DP's at this level. The alternative is to accept an overt controller present only at the higher level of argument structure.

All this seems to lead us towards another type of solution to the control problem. We may need to seek the solution not in the syntax of the language but in other levels. This is not a novel idea. There is a rich tradition the field that argues for a semantic account of this phenomenon<sup>6</sup>. Control predicates seem to group into sub-groups defined in terms of their semantic features that seem to be strongly correlated with their control requirements. Each individual predicate determines which of its arguments is to be the controller of the subject of the complement clause. This will answer the question of how to account for obligatory control in Arabic, with which we started our discussion

It was argued above that the empty subject position of the complement infinitival clause is filled with the pronominal *pro*, which is free in its domain – the subordinate clause. This element could be bound to any argument inside or outside the matrix clause. But such an analysis will not permit a formal statement to explain those instances where it is obligatorily bound - controlled – by any specific argument of the matrix clause. If control is treated as a thematic property of this or that predicate there won't be any problem of retaining the above analysis of control in Arabic. That the subject of a subordinate clause is obligatorily understood as coreferential to one of the arguments of the matrix predicate is a function of a particular feature of that specific predicate.

## 6. Conclusion

The upshot of this comparison is that the facts of control constructions in Arabic and English are different. As such, a unified analysis cannot be maintained. While a null case PRO seems to be an adequate candidate to fill the empty controllee subject position in English non-finite subordinate clauses, such an element does not seem to account for the facts of similar constructions in Arabic. The controllee position in Arabic infinitival subordinate clauses is a nominative case position that may alternatively be filled by lexical subjects inflected for the nominative case, hence the implausibility of positing a null case PRO.

The pronominal null element, *pro*, seems to be a more adequate candidate in this position. Facts of rich agreement on the verbs of such clauses would support such an analysis. In addition to this, the nominative case of the subject in these constructions would also indicate that they are not to be considered tenseless clauses. Tense is what assigns/checks nominative case. If so, then they could be considered as binding domains and the presence of the pronominal *pro* would not violate any of the binding principles in cases of obligatory control. It may be bound to one of the arguments in the matrix clause Nevertheless; it will be free in its binding domain, i.e. the infinitival clause.

How could we ensure the co-referentiality between the null element and one of the arguments of the matrix clause? The formal principle that stipulates anaphor binding is offered as the mechanism which will do the job. It was found that this proposal is inadequate in more than one way. First, while this mechanism may appear to be applicable in English and can account for how the controlled null category receives its interpretation, this mechanism is not at work in the case of Arabic control constructions. This is so since the null element proposed to fill the controllee's position is not an anaphor. It is a pronominal.

Second, it appears that the phenomenon of control is very closely related to the thematic properties of the control predicates. Individual predicates exhibit differences in their control properties that cannot be formally accounted for within a purely syntactic mechanism as that of c-command and the minimal link constraint or the minimal distance principle. The facts of English and Arabic seem to force a different account for control. It is to treat it as part of the lexical semantic properties of each control predicate. Each of these predicates may determine which of its arguments should control the empty subject of the subordinate complement or adjunct clause.

#### Notes

\* An earlier version of this paper was read at the Yarmouk University 17<sup>th</sup> international conference on language, linguistics, literature, and translation: (Irbid, Jordan) April 2005.

1. Rosenbaum distinguished between control and raising structures, where a NP appears to have moved from the subordinate clause to the matrix clause. This distinction has been generally adopted by the majority of the following researchers.
2. See Culicover & Jackendoff: 2001, Landau 2003, for detailed critique of Hornstein's movement proposal.
3. The rich agreement in these cases has been given a rather different analysis. It is not taken merely as agreement inflection that is part of the lexical items involved in the numeration; rather, it is considered a pronominal element that is merged with V' , and occupies the original subject position in [Spec-V] , and is incorporated later onto the verb ( cf. Rahhali 1996 and Bakir 1999)
4. In sentences that show subject-drop, as in (14), the verb exhibits rich agreement with the subject. It is inflected for person, gender and number. This is different from the verb inflection when it is followed by an overt subject. In this case, the verb is only inflected for gender and person as in (i)
  - i. kataba al-?awlaad-u rasaa?il-a-hum  
wrote3M the-boys-nom letters-acc-their
5. Some of these verbs have prepositional objects, e.g. English *vow to* , *agree with* , *obligated to* , *plead with* , and Arabic *?aqsama li* , *?ittafaqa ma'a* , *ta'ahhada-li* , *tawassala ?ilaa* . This cannot be taken as an argument against having these objects as controllers – i.e. they would not c-command the empty subject position, and therefore the closest DP to that position is the subject DP of the matrix clause. This, however, will not explain why the object of promise, which is not with a controller even though it is within a preposition phrase too, e.g.
  - i. Bill signaled to Susan<sub>i</sub> [ PRO<sub>i</sub> to control herself/\*himself.

6. See, for example, Culicover & Jackendoff: 2001, Landau 2003, Sag and Pollard 1991 for representative writings arguing for the decisive influence of semantic constraints on control.

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