

PRO vs pro in Arabic Syntax: Theoretical Analysis

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Abstract—The objective of this work is to investigate the syntactic and semantic properties of the empty categories PRO and pro in Modern Standard Arabic syntax. The problem: both of them are always syntactically covert at PF; semantically, though PRO bears same / or different theta roles from its anaphor at spell out, it leads to correct interpretation at LF; however, pro bears different theta roles that determine correct c-selection at spell out and lead to correct interpretations at LF. Conclusions: Syntactically PRO occupies, merely, the subject position of non- finite phrases; it does not check the nominative case since the phrases lack [A_{grs}, T]. However, pro occupies the subject position of finite clauses in (i) independent clause, (ii) embedding, (iii) subordinate and (iv) independent clauses related to weather (expletive) verbs; it checks the nominative case by [A_{grs}, T]. Semantically, PRO checks, merely, the theta roles of agent and experiencer; however, pro checks the theta roles of agent, patient, experiencer, theme, instrument and location.

Index Terms—PRO, pro, nominative case, theta role, interpretation

I. INTRODUCTION

Arabic is a pro – drop – language in which there are various types of pronouns that have the structure of a noun phrase. They are classified into three types, namely, (i) the overt attached personal pronouns, (ii) non-attached overt personal pronouns and (iii) the covert personal pronouns. (i) and (ii) are not included in this analysis; however, the focus of the analysis is on the third category in which the empty categories PRO and pro occur. PRO occupies the subject position of infinitival, gerundival phrases and small clauses; it is posited at spell out in an attempt to capture the relevant intuition of reference in the interpretation process at LF. It is claimed that the implicit subject becomes explicit if the relevant clauses are paraphrased by finite clauses. PRO creates multiple confusions in the interpretations of the structures in which it occurs. This is due to the syntactic fact that PRO has different referents at all levels of syntax. Thus, the control theory was proposed as a module of grammar to account for its syntactic distribution and semantic interpretations at spell-out and LF. Infinitival clauses, in Arabic, are introduced by the infinitive marker *?an* ‘to’ as in [*haawala zaidun_i ?an PRO_i yadrusa* ‘Zaid tried [PRO to study’]. However, gerundival clauses are of three types, namely, (i) subject gerund as in [*al-sibaahatu PRO mufidatan* ‘PRO swimming is good’], (ii) gerund after a verb as in [*?tadhakkartu pro mughaadarta PRO al-manzili* ‘I remember PRO leaving the house’] and (iii) gerund after a preposition as in [*yahtammu PRO zaidun_i fi al-sibaahati* ‘Zaid is interested in PRO swimming’]. At last small clauses are represented in the specimen [*wasala zaidun_i PRO_i ghadbaanun* ‘Zaid arrived PRO angry’]. However, pro occupies, merely, the subject position of finite clauses whether main, embedding or subordinate clauses; it is overt at spell out but covert at LF / PF. This element satisfies the EPP in that a clause without a subject is ungrammatical whether the subject is overt or cover; pro occurs in a sentence if the verb is in the imperfective form as in [*?uwaafiqu pro ‘ala qaraarika* ‘I agree with your decision.], in the perfective as in [*raja^c at pro bi khufai hunain* ‘She came back with the two shoes of Hunain’] and in the imperative as in [*?uktub pro al- risaalata* ‘Write the letter!’ (cf., Alghalayini, p. 80 for the examples only in Arabic). As Arabic is rich in agreement markers, it occurs in all types of tenses in Arabic syntax.

II. STATEMENT OF THE PROBLEM

The problem of this study is that both of them are always syntactically covert at PF; as they occur in complementary distribution, they succumb to different syntactic features in syntax; semantically, though PRO bears same / or different theta roles from its anaphor at spell out, it imposes correct interpretation at LF; pro has various theta roles that determine correct c-selection at spell out and lead to correct semantic interpretations at LF. Such problematic issues need to be explicated in this work in a theoretical manner.

III. OBJECTIVES AND QUESTIONS OF THE STUDY

The objective of this study is to check the syntactic as well as the semantics properties of PRO and pro in Arabic syntax. For such reasons, the researcher proposed the following questions: (1). What are the syntactic positions in which they occur? And (2). What are their theta roles?

IV. SIGNIFICANCE OF THE STUDY

This study is significant in a number of issues. Firstly, it shows that though PRO and *pro* are covert subjects, they play significant roles in syntax and in the interpretation of the sentences at LF. Secondly, control relation established between PRO and its anaphors determines correct semantic interpretation at LF. In fact, this relation is inactive with *pro*. Thirdly, PRO position cannot be filled by either a trace or *pro* because it has the categorial features of [- Agr]. This study is also significant as it helps learners of Arabic understand and interpret both sentences in which PRO and *pro* occur in a better manner. It also helps translators go deep into the language structure to give better version of Arabic translation into other languages. The researcher thinks also that this study will encourage other scholars to follow the current theoretical views referred to, in this work, in an attempt to explain both categories in other pro-drop-languages or non- drop languages and contrasted them to Arabic.

V. THEORETICAL PERSPECTIVES

Rizzi (1986) proposed that in pro-drop- languages, *pro* occurs in the subject position of a finite clause for two main syntactic requirements, namely, (i) it is licensed under head government of INFL as the head and (ii) the syntactic content of the empty category *pro* is recovered through rich agreement features available in the structure as in Italian [pro_i parlo_i] in which the identification of the subject features through [Agr] is represented by co-indexation. Borer (1980, 1983 and 1986) explicated that, in Modern Hebrew, the subject *pro* can be dropped as in [Hu 'axalti 'et ha-tapu'ax 'I ate the apple]. This kind of occurrence is very restricted to main clauses with future and past tenses in which *pro* must be first and second persons; however, it is not allowed in the present tense at all. He related pro-drop option in Modern Hebrew to richness of inflection. In the present tense sentences, only gender and number are overtly realized; whereas, in other tenses, third person is unmarked; thus, he generalized that not all types of inflections are strong enough to allow pro-drop in Hebrew (cf., 1986. p.392). Huang (1984) argued that Chinese allows *pro* to be dropped, in spite of the fact that, it lacks [Agr] entirely. His assumption is formulated to argue that *pro* is possible either in languages with rich agreement or no agreement at all as in Japanese and Korean. This issue confirmed by Platzack (1987) in the sense that though Scandinavian languages lack overt [Agr], still *pro* is dropped and they are non - pro-drop-languages. Hyams (1986) argued that the empty category *pro*, in pro-drop languages, acts as the lexical pronouns in receiving case and theta roles. In the embedded tensed clause in pro- drop languages, (AGR) absorbs the normal features of the subject i.e. case and theta role. Hageman (1994) argued that *pro* in Italian is originated at D-structure in [Spec, VP] position to be assigned its external theta role then it moves to [Spec, IP] where it will be licensed and identified via the rich INFL". Chomsky (1986) argued that *pro* is a universal issue by which languages are divided into pro-drop languages and non - pro-drop languages. It occurs as the covert subject of a finite clause with the categorial feature [-anaphor, + pronominal]; it satisfies the EPP in syntax and gets the nominative case by collection of [Agr, T]. The strong inflectional system in pro - drop languages allows AGR to recover the entity of the null subject by the agreement features which appear on the verb. The co-indexation between AGR and the null subject *pro* is very important to satisfy the recoverability of its content. With regard to the requirement of case and theta theories, *pro* must receive both case and theta role at spell out (p. 136). It is argued that infinitive, gerundival form of the verb and adjectives are not case assignors. Chomsky (1995) argued that PRO occurs as the subject of a non- finite clause. Thus, it does not assign the nominative case. The theory of control as a module of grammar accounts for its syntactic distribution and the semantic interpretations at spell-out and LF. Normally, the subject position of the non - finite clauses is filled by PRO whenever this position is not occupied by an overt N". This PRO is syntactically active; it has a theta role but not case as compared to an overt N" occurring at the finite clause. Its interpretation at spell-out is regulated by the type of the controller N" retained at LF (p. 33-50 and (83-85)). Chomsky (1995) also argued that PRO must be controlled wherever it occurs; it can be controlled by its subject as in [Mary expected [PRO_i to hurt herself]] in which 'Mary' is the controller or by its object as in [John believed Bill_i [PRO_i to be sick]] in which 'Bill' but not 'John' is the controller. PRO can be arbitrary controlled in interpretation as in [It is common [PRO to hurt herself]] in which the controller is an implicit argument and interpreted to refer to 'one'. It is proved that PRO has the categorial feature [+ anaphor, + pronominal] which means that it must have an antecedent to refer to as that of anaphors or it functions as a pronoun as it has arbitrary kind of reference as in [John asked [_C how [_T PRO to behave himself/ or oneself]] in which PRO is either controlled by the subject 'John' or by 'anyone' (p. 36-41). However, *pro* lacks control relation in syntax. In short, the above the theoretical views will be referred to for this analysis.

VI. DISCUSSIONS AND RESULTS

A. Syntactic Positions of PRO and Pro in Arabic Syntax

Non - finite clauses are (i) infinitival clauses, (ii) gerundival clauses and (ii) small clauses; they are nominal in nature; thus, they occupy the syntactic positions (i) subject, (ii) object complement and (iii) subject complement in Arabic syntax. PRO occurs in the subject position of these clauses; its syntactic properties are determined by the controller at LF in the upper clause. However, finite clauses show tense in which *pro* occurs as the subject of these

clauses whether independent or dependent. In an attempt to answer question (1), the sentences below illustrate the syntactic occurrences of PRO and pro.

PF

1. [_{T1} haawala zaidun_i [_{T2} ?an yu- ghaadir- a PRO_i / *pro al- hadiiqata]].
 tried Zaid to 3rd, sg, masc. leave subj. det garden
 ‘Zaid tried to leave the garden.’

In (1), PRO initiates the infinitival phrase [*?an yaghaadira al-hadiiqata* ‘to leave the garden’]. It is controlled by the anaphor subject *zaidun* ‘Zaid’ of the matrix clause. It does not check the nominative case because *?an* ‘to’ is not case assigner and lacks [T]. The entity *pro* cannot occur in this position because it is a caseless position.

PF

2. [_T tadhakkara ^camrun_i [_{T2} fuqdaana PRO_i / *pro fuluusi- hi].
 remembered Amr losing money his
 ‘Amr remembered losing his money.’

In (2), PRO initiates the gerundival phrase [*fuqdaana fuluusihi* ‘losing his money’]. It is controlled by the anaphor subject *amrunn* ‘Amr’ of the matrix phrase. It does not check a case because the nominal form of the verb *yafqidu* ‘lose’ is not case assigner and the clause lacks both [Agr and T]. The empty category *pro* cannot occur in this position because it cannot check the nominative case.

PF

3. [_T al- taqsu_i [_{sc} PRO_i / *pro maatirun].
 det weather rainy
 ‘The weather is rainy.’

In (3), PRO initiates the small phrase [*maatirun* ‘rainy’]. It is controlled by the anaphor subject *al-taqsu* ‘the weather’ of the matrix clause. It does not check a case because the predicative adjective *maatirun* ‘rainy’ is not case assigner and the clause lacks the agreement features [Agr and T]. The entity *pro* cannot occur in this position because it is a caseless position. In short, infinitive, gerundive and predicative adjectives are not case assigners in Arabic syntax. Thus, *pro* cannot initiate such clauses.

However, the subject *pro* initiates the independent clause in (4).

PF

4. [_{T1} ?u - pro / *PRO hibb - u al- ^cilma].
 1st, sg, masc./fem I, nom love pres. det knowledge
 ‘I love knowledge’

In (4), *pro* ‘I’ initiates the independent phrase [*?uhibu al-^cilma* ‘I love knowledge’]. Syntactically, it is understood as the first person singular, feminine or masculine which can be represented by D” *?ana* ‘I’; it is recovered by the agreement marker *?u*. It checks the nominative case by the zero tense marker [u]. The entity PRO cannot occur in this position because it is a case position. Other possible *pro(s)* can occur in this position and have the same syntactic features of case and [Agr] but with different [Agr] as in *nu (agr)-hibu* ‘we love’, [*tu (agr) -hibu* ‘she loves’], [*yu (agr) -hibu* ‘he / they loves / love’], [*tu (agr)-hibaa* ‘they both feminine love’], [*yu (agr) -hibaa* ‘they both masculine love’] and [*tu – (agr)hibu* ‘you love’] ‘you (masculine) love’] and [*tu- (agr)hibi* ‘you (feminine) love.’]

PF

5. [_{T1} tamannaa zaidun ?an [_{T2} ya- njah- a pro / *PRO]].
 wish Zaid that 3rd, sg, masc. pass pres. he, nom
 ‘Zaid wished that he pass’

In (5), the entity *pro* initiates the embedding phrase [*yanjaha* ‘pass’]. It is illustrated by the [Agr] [*ya, 3rd, sg masc.*]; it checks the nominative case by the case assignor [a] attached to the verb *njah* ‘pass’. The category PRO cannot occur in this position due to both [Agr and T].

PF

6. [_{T1} ranna al- haatifu ^cindama [_{T2} 0- dakh- a pro / *PRO]].
 rang det phone when 3rd, sg masc. entered past he, nom
 ‘The phone rang, when he entered.’

In (6), the entity *pro* initiates the subordinate clause [*^cindama dakhala* ‘when he entered’]. It is illustrated by the [Agr] [*0, 3rd, sg masc.*]; it checks the nominative case by the case assignor [a] attached to the verb *dakhala* ‘entered’. The category PRO cannot occur in this position because of the case assignors [Agr and T].

PF

7. [_T ?amtar- a t pro / *PRO al- baarihata].
 rain past 3rd, sg, fem it, nom det yesterday
 ‘It rained yesterday’

In (7), the entity *pro* initiates the independent clause related to weather [*?amtarat al-baarihata* ‘it rained yesterday’]. It is illustrated by the [Agr] [*t, 3rd, sg, fem.*]; it checks the nominative case by the case assignor [a] attached to the verb *?amtarat* ‘rained’. The category PRO cannot occur in this position due to both [Agr and T]. In short, *pro* checks

the nominative case by [T or INFL] as it is rich in both [Agr and T]. However, PRO cannot occupy this position as it is case oriented.

B. Semantic Interpretations Analysis of PRO and Pro in Arabic Syntax

The relation between the predicate and its subject is not studied only from a syntactic point of view but also from a semantic view. This semantic relation is the basic for the correct understanding and interpretation of the sentence at LF; it is accounted for by theta theory. It was evident that every argument must be assigned a theta role in a theta position and each theta role must be assigned to only one argument (theta criterion). The sub-categorization of the predicate decides its thematic relations in its theta grid for correct semantic interpretation at LF. Thus, it is [V"] that assigns the external theta role of the subjects PRO and *pro*. The researcher tries to find out what possible theta roles that can be assigned to both of them in the subject positions in Arabic syntax. In an attempt to analyze question (2) of the study, the examples below illustrate the issue.

PF

8. [T₁ ?arada pro_i [T₂ ?an yaktuba PRO_i darsa - hu].
 wanted he to sleep agent` lesson his
- ‘He wanted to write his lesson.’

In (8), PRO checks the theta role of agent by [V"] [*yaktuba darsahu* ‘write his lesson’] as it wills the action of writing his lesson. Though PRO has a duplicated theta role of agent as that of *pro* ‘he’, it is interpreted as *pro* ‘he’ that can do the action of wanting in the main clause and the act of writing in the embedded phrase due to subject obligatory kind of control. In other words, the subject *pro* performs two semantic functions simultaneously one of the matrix (ie. *pro*) and the other of the infinitival phrase (i.e. PRO).

PF

9. [T₁ waṣala zaidun_i [sc PRO_i ghadḥbaanan.]].
 arrived Zaid experiencer angry
- ‘Zaid arrived angry’

In (9), PRO checks the theta role of experiencer by [A"] [*ghadḥbaanan* ‘angry’] as PRO experiences the feeling of being angry. Though PRO has a different theta role from *zaidun* ‘Zaid’ of the matrix clause (i.e. agent), it is interpreted as *zaidun* ‘Zaid’ that experiences anger in the main clause due to subject obligatory kind of control. In other words, the subject *zaidun* performs two different semantic functions simultaneously. *Zaidun* has the theta role of agent in the main clause and experiencer in the adjectival embedded phrase.

However, *pro* may have the following theta roles.

PF

10. [T" jalasa- ∅ pro ba^cda al- ghuruubi].
 sit 3rd, sg, masc. he, agent after det sunset
- ‘He sat after the sunset.’

In (10), *pro* ‘he’ checks the theta role of agent by [V"] [*jalasa ba^cda al- ghuruubi* ‘sat after the sunset’] as *pro* wills the action of sitting. There are other Arabic [V"]s that check the agent theta role to the subject position, namely, *sabaḥa* ‘swam’, *ṣarakha* ‘cried’, *rakada* ‘ran’ ...etc. (cf., Jalabneh, 2007, p. 60 - 65) and *daraba* ‘hit’ (cf., Carnie, 2002, p. 168).

PF

11. [T" maata- ∅ pro fi al- manzili].
 died 3rd, sg, masc. he, patient in det house
- ‘He died in the house.’

In (11), *pro* ‘he’ checks the theta role of patient by [V"] [*maata fi al-manzili* ‘died in the house’] as *pro* undergoes the action of death. There are other [V"]s that belong to the same group, namely, *dhahaba* ‘went’, *waṣala* ‘arrived’ and *ikhtafaa* ‘disappeared’. The subject *pro* can check the theta role of experiencer as in (12).

PF

12. [T" ?aḥabba- ∅ pro ?abaa - hu].
 loved 3rd, sg, masc. he, experiencer father his
- ‘He loved his father.’

In (12), *pro* ‘he’ checks the theta role of experiencer since it is the argument that experiences love (cf., Carnie, 2002, p. 177 for experiencer). There are other [V"]s that check this theta role, namely, *kariha* ‘hated’, *sa^cala* ‘coughed’, *atasa* ‘sneezed’, *tanahhada* ‘sighed’ and *marida* ‘felt sick’. (cf., Jalabneh, 2007, p. 69 - 72).

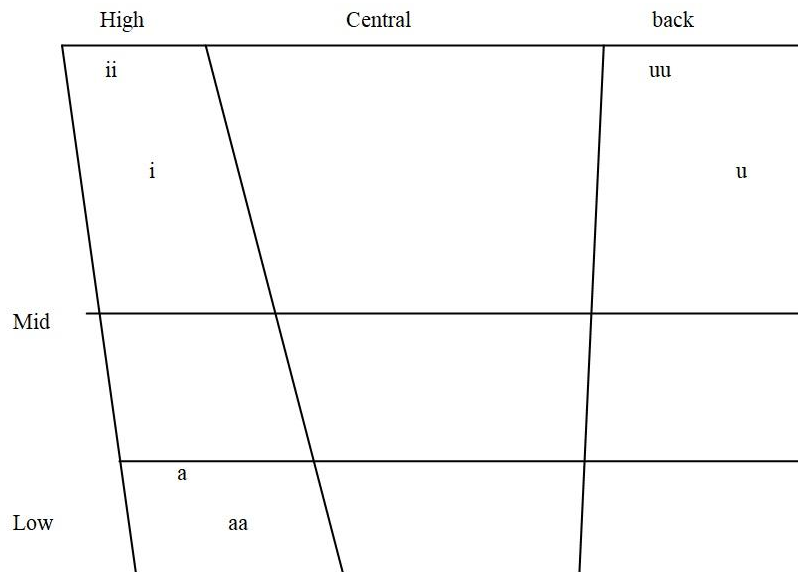
PF

13. [T₁ tadaḥara- t pro].
 rolled 3rd, sg, fem it, theme
- ‘The ball rolled.’

In (13), *pro* ‘it’ checks the theta role of theme since it is the argument that undergoes the action of rolling. It is interpreted as *al-kuratu* ‘the ball’ in Arabic syntax.

14. [T" taḥatama- t pro].
 crashed 3rd, sg, fem it, instrument
- ‘It crashed.’

APPENDIX II. TRANSLITERATION SYMBOLS OF THE ARABIC PHONEMES OF VOWELS



Notice: [i:/ii] is a tense vowel while [i] is lax and the same is applied to the rest of vowels in Arabic phonology. (cf., Fari, et al, 2006, p. 74)

APPENDIX III. ABBREVIATIONS

Agr / Agrs: Agreement subject
 Agrs: Agreement
 Dⁿ: Noun phrase
 Det: Determiner
 Dⁿ : Determiner phrase
 e : Empty
 Iⁿ: Inflectional phrase
 INFL / I: Inflection
 LF : Logical form
 Masc. : Masculine
 Sg.: Singular
 subj: Subjunctive
 Tⁿ: tense phrase
 T: tense
 Vⁿ: Verb phrase
 V: Verb

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