Gaps and Resumptive Pronouns in Modern Standard Arabic

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Abstract

Unbounded dependencies in Modern Standard Arabic often involve not a gap but a null resumptive pronoun. The facts are quite complex, but it is not too difficult to extend the SLASH mechanism of HPSG to handle dependencies with a null resumptive pronoun. It is also not too difficult to restrict the distribution of gaps appropriately.

1. Introduction

Unlike English but like many other languages, Modern Standard Arabic (MSA) has unbounded dependencies which sometimes involve a gap and sometimes involve a resumptive pronoun. The facts are quite complex, but we will show in this paper that it is not too difficult to provide an analysis within HPSG.

The paper is organized as follows. In section 2, we set out the basic data and show that MSA has gaps in some positions and phonologically empty resumptive pronouns in others. Then, in section 3 we outline an HPSG analysis of the data in which both gaps and empty resumptive pronouns are realizations of SLASH. In section 4, we look more closely at some important coordination data, and in section 5, we discuss the analysis of subordinate clauses introduced by the complementizer *ʔanna*. Finally, in section 6, we summarize the paper.

2. The data

Like most languages MSA, does not allow a gap in prepositional object position. However, it allows a resumptive clitic in this position. We have the following contrast:

(1) a.	*ʔayy-i	ʤaamiˤat-in	ðahaba	Aħmad-u	ʔila ___?
	which-GEN	university-GEN	went.3SM	Ahmad-NOM	to
	‘Which university did Ahmad go to?’				
b.	ʔayy-u	ʤaamiˤat-in	ðahaba	Aħmad-u	ʔilai-**ha**?
	which-NOM	university-GEN	went.3SM	Ahmad-NOM	to-it

↑ We are grateful to the reviewers and audience at the 20th HPSG conference in Berlin for their helpful comments and discussion. We alone are responsible for what appears here.

Here and subsequently we mark gaps by '___' and place resumptive clitics in bold. (We will argue later, however, that certain apparent gaps are really null resumptive pronouns.) Not surprisingly, it is possible to express the same meaning with a PP filler:

(2) [$_{PP}$ ʔila ʔayy-i dʒaamiʕat-in] ðahaba Aħmad-u ___?
to which-GEN university-GEN went.3SM Ahmad-NOM
'To which university did Ahmad go?'

Possessor position is similar. Here too a gap is impossible, but a resumptive clitic is fine:

(3) a. *ʔayy-i muʔallif-in garaʔa Aħmad-u kitaab-a ___?
which-GEN author-GEN read.3SM Ahmad-NOM book-ACC
'Which author's book has Ahmad read?'
b. ʔayy-u muʔallif-in garaʔa Aħmad-u kitaab-a-**hu**?
which-NOM author-GEN read.3SM Ahmad-NOM book-ACC-his

It is also possible to express this meaning with a complex NP containing a possessor as a filler:

(4) [$_{NP}$ kitaab-a ʔayy-i muʔallif-in] qaraʔa ___ Ahmad-u?
book-ACC which-GEN author-GEN read.3SM Ahmad-NOM
'Which author's book has Ahmad read?'

Following Miller and Sag (1997), we assume that MSA clitics are affixes realizing an otherwise unexpressed argument, and not just the result of some superficial cliticization process. We will call such arguments pro because we assume that the same element is the subject argument in a null subject sentence.[1] On this view, it is strictly speaking the pro that is the resumptive element. The prepositional object and possessor positions both bear genitive case, as (2) and (4) show. However, the filler in (1b) and (3b) is nominative. We will see that a filler associated with a resumptive clitic is always nominative.

Turning to object position, we find that it allows either a gap or a resumptive clitic in *wh*-questions:

(5) a. ʔayy-a T-tullaab-i qaabala l-qaaʔid-u __?
which-ACC the-students-GEN met.3SM the-leader-NOM
'Which of the students has the leader met?'
b. ʔayy-u T-tullaab-i qaabala-**hum** l-qaaʔid-u?
which-NOM the-students-GEN met.3SM-them the-leader-NOM

[1] For Miller and Sag, the arguments associated with clitics are of type *aff*. However, they are dealing with French, a language which does not have null subject sentences.

The filler is accusative with a gap (as one would expect) and nominative with a resumptive clitic. Notice that the clitic in (5b) is not adjacent to the object position. This argues that it is not the result of a superficial cliticization process. We have the same two possibilities in relative clauses with a definite antecedent, as the following, from Alqurashi and Borsley (2012), show:

(6) a. qaabaltu r-rajul-a [llaðii ʔarifu ___]
met.1SM the-man-ACC that knew.1SM
'I met the man that I knew.'
b. qaabaltu r-rajul-a [llaðii ʔarifu-**hu**]
met.1SM the-man-ACC that knew.1SM-him
'I met the man that I knew.'

In contrast, relatives with an indefinite antecedent only allow a resumptive clitic when object position is relativized:

(7) a. *qaabaltu rajul-an [ʔaˤrifu __]?
met.1SM man-ACC knew.1SM
'I met a man that I knew'
b. qaabaltu rajul-an [ʔaˤrifu-**hu**]?
met.1SM man-ACC knew.1SM-him

Notice that there is no filler in these clauses.

Next we consider subject position. It has often been assumed that MSA has both postverbal and preverbal subjects (Mohammad 2000) and that they differ with respect to agreement, the former triggering only person and gender agreement and the latter triggering number agreement as well. The following illustrate:

(8) qaabala/ *qaabaluu T-tullaab-u Aħmad-a
met.3SM met.3PM the-students-NOM Ahmad-ACC
'The students met Ahmad'
(9) T-tullaab-u qaabaluu / *qaabala Aħmad-a
the-students-NOM met.3PM met.3SM Ahmad-ACC
'The students met Ahmad'

However, what are often viewed as preverbal subjects are required to be definite (Fassi Fehri 1993):

(10) l-ʔawlaad-u jaaʔuu
the-children-NOM came.3PM
'The children came'

(11) *ʔawlaad-un jaaʔuu
children-NOM came.3PM
'Children came'

This suggests that they are really topics associated with a null subject of some kind, and hence that the only real subjects are post-verbal **(**Aoun *et al* 2010**).** Assuming this is right, we need to ask why we have full agreement in examples like (9). One would expect a gap to have the same properties as the associated filler and to trigger agreement in the same way. This suggests that the null subject is not a gap but a resumptive pro. There is evidence that a pro subject triggers full agreement. Consider the following null subject sentences:

(12) a. laqad qaabala Aħmad-a
indeed met.3SM Ahmad-ACC
'He met Ahmad.'
b. laqad qaabaluu Aħmad-a
indeed met.3PM Ahmad-ACC
'They met Ahmad.'

These can only have the meanings indicated. Assuming that they have a pro subject, this means that we have full agreement with a pro subject. Hence, if we assume that (9) also has a pro subject, we expect full agreement. It looks, then, as if only a resumptive pro and not a gap is possible in subject position.

Not surprisingly, sentences where a topic is understood as the subject of a subordinate clause point to the same conclusion. Consider the following:

(13) T-tullaab-u ʔiqtaraħtu [ʔan yušaarikuu/
the-students-NOM suggested.1SM that participate.3PM
*yušaarika fii l-musaabaqat-i]
participate.3SM in the-competition-GEN
'The students I suggested participate in the competition.'

Here, as in (9), the verb shows full agreement. This suggests that we also have pro as the subject of the subordinate clause.

Sentences with an initial *wh*-phrase are like sentences with an initial topic. Parallel to (9), we have the following:

(14) ʔayy-u Tullaab-in ʕaraf-uu / *ʕarafa
which-NOM students-GEN knew.3PM knew.3SM
l-ʔijaabat-aʔ
the-answer-ACC
'Which students knew the answer?'

As in (9), we have full agreement, suggesting the subject is a pro. Parallel to

(13), we have (15).

(15) ʔayy-u Tullaab-in qarrarta [ʔan usaafiruu /
which-NOM students-GEN decided.2SM that travel.3PM
*usaafira ʔila Roma]?
travel.3SM to Rome
'Which of the students have you decided should travel to Rome?'

Once more, we have full agreement, suggesting we have a pro subject.

As one would expect, MSA also has certain non-nominal gaps. Firstly, there are PP gaps with verbs:

(16) ʔila ʔayy-i ʤaamiˤat-in ðahaba Aliy-un ___?
to which-GEN university-GEN went.3SM Ali-NOM
'To which university did Ali go?'

Secondly, there are PP gaps with adjectives:

(17) min maðaa kaana Aħmad-u khaaʔif-an ___?
from what was Ahmad-NOM afraid-ACC
'Of what was Ahmad afraid?'

Finally, there are adverbial gaps:

(18) mataa ðahaba Aliy-un ʔil al-ʤaamiˤat-i ___?
when went.3SM Ali-NOM to the-university-GEN
'When did Ali go to the university?'

The facts that we have set out above are quite complex. We can summarize them as follows:

	Gap	Pro
Subject	No	Yes
Object	In some constructions	Yes
Prepositional object	No	Yes
Possessor	No	Yes
PP complement of verb	Yes	No
PP complement of adjective	Yes	No
Adverbial	Yes	No

Table 1: The distribution of gaps and resumptive pros in MSA

The one position in which things are complex is object position, which allows a gap in *wh*-questions, and definite relatives, but not in indefinite

relatives. We will see in section 5 there is another construction which doesn't allow a gap in object position.

It has been widely assumed since Keenan and Comrie (1977) that subject position is more accessible than object position so that if a gap is possible in the latter it is also possible in the former. However, it is not really clear that this is right. In English, a gap is possible in object position, but as Koopman (1983) noted, the unacceptability of examples like the following suggests that a gap is not possible in subject position in an auxiliary-initial clause:

(19) *Who did see Lee?

Of course, this is acceptable if *did* is stressed, as in (20).

(20) Who DID see Lee?

But this a *wh*-question counterpart of a subject-initial clause with either a preverbal gap (Levine and Hukari 2006) or no gap at all (Ginzburg and Sag 2000). Thus, the impossibility of a gap in object position in Arabic is perhaps not so surprising.

3. An HPSG analysis

An analysis of the data we have set out above needs to do two things: (a) to incorporate resumptive pro into an account of unbounded dependencies, and (b) to restrict the distribution of gaps. We will discuss both of these matters in the following pages.

Following Levine and Hukari (2006), we assume that the null hypothesis is that all unbounded dependencies involve the same mechanism, within HPSG the SLASH mechanism. However, it is widely assumed that differences between gaps and resumptives with respect to island constraints suggest that they involve different mechanisms. Consider the following examples:

(21)a , *[ʔayy-a bint-in] raʔaita [l-ʔasad-a [llaði ʔakala
which-ACC girl-GEN saw.2SM the-lion-ACC that ate.3SM
___]]
'Which girl did you see the lion that ate?'

b. [ʔayy-u bint-in] raʔaita [l-ʔasad-a [llaði
which-NOM girl-GEN saw.2SM the-lion-ACC that
ʔakala-**ha**]]
ate.3SM-her
'Which girl did you see the lion that ate?'

In these examples the *wh*-phrase in initial position is associated with object

position inside a relative clause. In (21a) there is a gap in object position and it is unacceptable. In (21b) there is a resumptive in object position and it is acceptable. Within transformational work, e.g. Aoun *et al.* (2010), contrasts like these have been seen as evidence that there is movement with a gap but no movement with a resumptive.[2] However, as Borsley (2010, 2013) notes in connection with Welsh, such contrasts only argue for a significant grammatical difference between gaps and resumptives if islands are a grammatical matter. It has been argued e.g. by Kluender (1998), Levine and Hukari (2006), Hofmeister and Sag (2010), and Hofmeister, Staum Casasanto, and Sag (in press) that they are a processing matter. If this is right, contrasts like that in (21) do not necessitate differences in syntactic analysis.

In MSA, as in some other languages, there is evidence from coordination that resumptive pros involve the same SLASH mechanism as gaps. It has been well known since Ross (1967) that unbounded dependencies are subject to the Coordinate Structure Constraint, which essentially says that an unbounded dependency may not affect one conjunct of a coordinate structure unless it affects the other(s), in which case it is commonly referred to as an across-the-board dependency.[3] In the case of MSA, it rules out (22) while allowing (23).

(22) *man [tuħibu __ wa tušadʒiˤu Aħmad-a fii
who like.2SM and support.2SM Ahmad-ACC in
nafs-i l-waqt-iˤ]
same-GEN the-time-GEN
*‘Who do you like and support Ahmad at the same time?’

(23) man [tuħibu __ wa tušadʒiu __ fii nafs-i
who like.2SM and support.2SM in same-GEN
l-waqt-iˤ]
the-time-GEN
‘Who do you like and support at the same time?’

(23) has a gap in both clauses. Consider now the following:

[2] Aoun et al. (2010) in fact assume that there may be movement with a resumptive but that there need not be.

[3] Work by Goldsmith (1985), Lakoff (1986), and Kehler (2002) has shown that the Constraint only applies when the conjuncts are parallel in certain ways. However, this is not particularly important in the present context.

(24) man [tuħibu ___wa tušadʒiʕu-**hu** fii nafs-i
who like.2SM and support.2SM-him in same-GEN
l-waqt-iʕ]
the-time-GEN
'Who do you like and support at the same time?'

This example has a gap in the first clause and a resumptive clitic in the second. As Alqurashi and Borsley (2012) note, we have similar examples in relative clauses such as that in (25).

(25) l-fataatu [llati ʔuħibbu ___ wa ʔaħrasu ʕalay-**ha**]
the-girl.NOM that.SF love.1SM and care.1SM about-her
'the girl that I love and care about'

It seems, then, that gaps and resumptive pros have the same status as far as the Coordinate Structure Constraint is concerned. This is unsurprising if both are realizations of SLASH but is a major complication if resumptives involve a different feature as in Vaillette (2000, 2002). A similar argument is developed on the basis of Hausa in Crysmann (2012).

If resumptive pros are realizations of SLASH, one might propose that they have a feature makeup rather like that of gaps. Specifically, one might propose the following:

(26)

$$\begin{bmatrix} \text{LOCAL}\,[1]\text{NP} : \textit{ppro} \\ \text{SLASH}\,\{[1]\} \end{bmatrix}$$

This, however, would require fillers to be pronominal, which of course they need not be. It would also require fillers to have the same case as the pro. As we have seen, a filler associated with pro is always nominative even when pro is in a genitive or accusative position. More plausible is the following:

(27)

$$\begin{bmatrix} \text{LOCAL NP} : \textit{ppro}\,[\text{INDEX}\,[1]] \\ \text{SLASH}\,\{\text{NP} : [\text{INDEX}\,[1]]\} \end{bmatrix}$$

Here the value of LOCAL and the local feature structure within SLASH are only coindexed. Hence, fillers will not be required to be pronominal or to have the same case as the pro. However, there is an important objection to such an analysis.

A central fact about resumptive pros is that they appear in the same positions as non-resumptive pros – subject position and positions associated with a clitic. (12a), repeated here as (28), and (29)–(31) illustrate:

(28) laqad qaabala Aħmad-a
indeed met.3SM Ahmad-ACC
'He met Ahmad.'

(29) qaabala-**hum** l-qaaʔid-u
met.3SM-them the-leader-NOM
'The leader met them.'

(30) ðahaba Aħmad-u ʔilai-**ha**
went.3SM Ahmad-NOM to-it
'Ahmad went to it.'

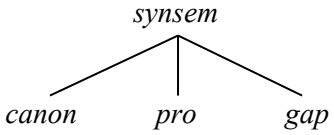
(31) qaraʔa Aħmad-u kitaab-a-**hu**
read.3SM Ahmad-NOM book-ACC-his
'Ahmad read his book.'

This suggests that resumptive and non-resumptive pros are the same element, a phonologically empty pronoun, which is [SLASH {}].

This is essentially a version of an argument developed by McCloskey (2002). He observes (p.192) that RPs universally look just like ordinary pronouns. As Asudeh (2004) points out, this casts doubt on any analysis which treats RPs as special pronouns distinct in some way from ordinary pronouns, and McCloskey (2006) argues that 'there can be no syntactic feature which distinguishes RPs from 'ordinary' pronouns'. We are concerned here with phonologically empty pronouns, but we can say that they look alike because they have the same distribution.

Following much work in HPSG we will assume that the type *synsem* has three subtypes as follows:[4]

(32)



We assume that pros have the following feature makeup:

(33)

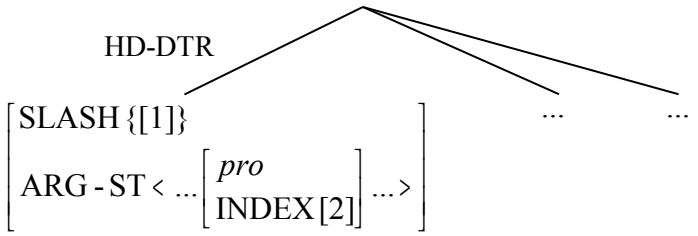
$$\begin{bmatrix} \textit{pro} \\ \text{LOCAL NP} : \textit{ppro} \\ \text{SLASH} \{\} \end{bmatrix}$$

We propose that the distinguishing property of resumptive pros is that they are coindexed with a local feature structure in SLASH. If we assume a head-

[4] It may be that *pro* and *gap* should be treated as two subtypes of a *noncanon*(*ical*) type.

driven approach to SLASH, we can propose that a resumptive pro is a pro argument which is coindexed with NP[CASE *nom*] in the SLASH value of a word. In other words, we can propose structures of the following form:[5]

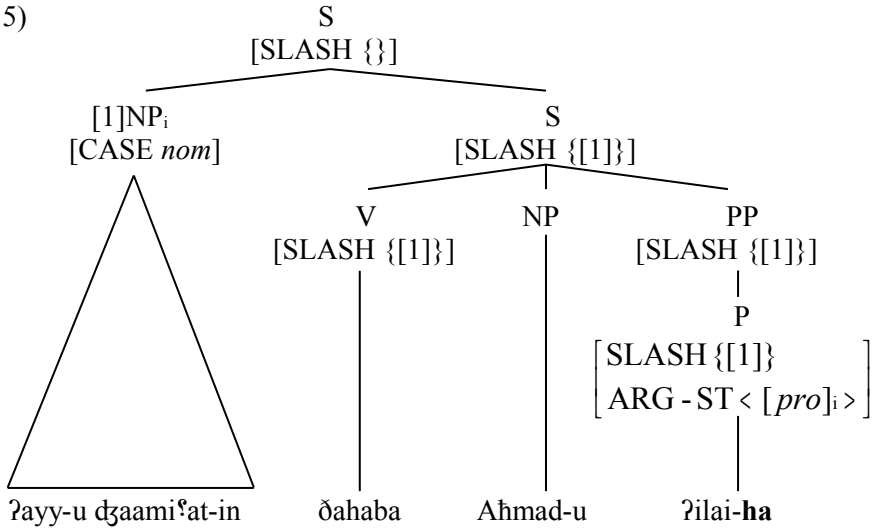
(34)



The fact that the pro is coindexed with the SLASH value means that it has the same number and gender. Crucially, however, it doesn't require it to have the same case. Hence, the fact that examples like (1b) and (3b) have pro in a genitive position is not a problem, and nor is the fact that an example like (5b) has a pro in an accusative position.

Within this approach, (1b), with a resumptive pro in prepositional object position, will have the following structure:

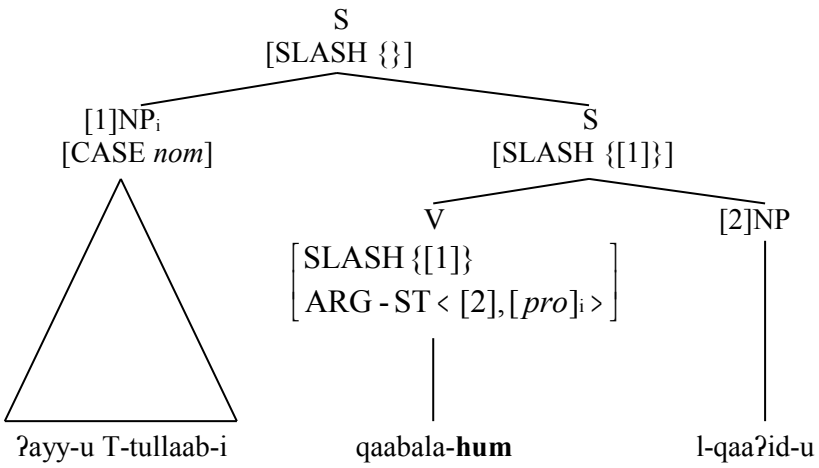
(35)



[5] This is essentially the approach that Borsley (2010, 2013) takes to resumptive pronouns in Welsh.

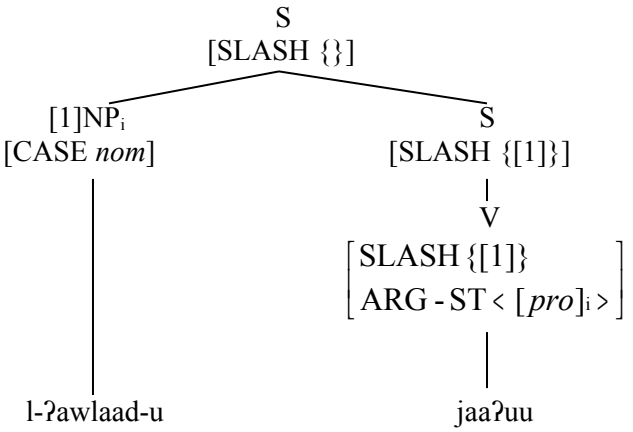
For (5b), with a resumptive pro in object position, we will have the structure in (36).

(36)



Finally, for (10), with a resumptive pro in subject position, we will have (37).

(37)



Each of these involves a structure of the form in (34).

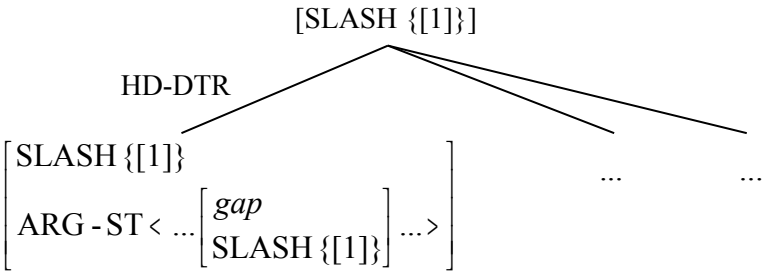
What sort of constraints does this approach require? Standard accounts of unbounded dependencies assume that SLASH is subject to the SLASH Amalgamation Principle in (38).

(38) $word \Rightarrow / \begin{bmatrix} \text{SLASH} \{[1] \cup \ldots \cup [n]\} \\ \text{ARG - ST} < [\text{SLASH} \{[1]\}], \ldots, [\text{SLASH} \{[n]\}] > \end{bmatrix}$

This entails that a slashed word must have a slashed argument. This

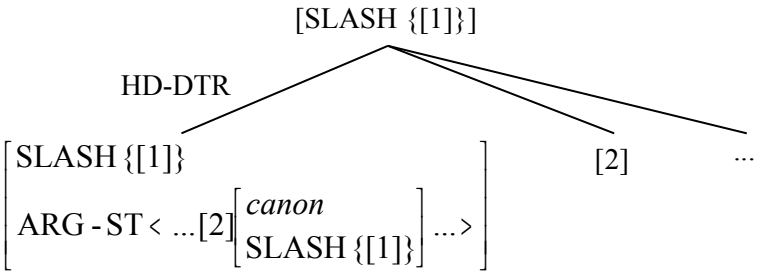
requirement is met where a head has an argument which is a gap, giving structures of the following form:

(39)



It is also met where a head has an argument which contains a gap or a resumptive, giving structures of the form in (40):

(40)



However, the requirement is violated by structures of the form in (34). Hence, it is violated by (35)–(37). The SLASH Amalgamation Principle may be appropriate for languages which just have gaps, but it seems that something more complex is required here.

Firstly. we need a constraint to ensure that a word with a non-empty SLASH value has an argument which is either (a) a gap or a constituent containing a gap or pro or (b) a coindexed pro. The following constraint does this:

(41) $\begin{bmatrix} word \\ \text{SLASH } \{[1][\text{INDEX } [2]]\} \end{bmatrix} \Rightarrow$ [ARG-ST <… [SLASH {[1]}]

$\vee$ [*pro*[INDEX [2]]]…>]

We also need a constraint to ensure that a word with a slashed argument is itself slashed in normal circumstances.

(42) [ARG-ST <… [SLASH ([1]}] …>] $\Rightarrow$ / [SLASH {[1]}]

We do not need a parallel constraint requiring a pro argument to be coindexed with a SLASH value because pros need not be resumptive and hence need not be coindexed with a SLASH value. We do, however, need a constraint to ensure that the SLASH value with which a resumptive pro is coindexed is nominative. The following constraint does this:

(43)

$$\begin{bmatrix} \textit{word} \\ \text{SLASH}\,\{[1][\text{INDEX}[2]]\} \\ \text{ARG-ST}\,\langle\ ...[\textit{pro}\,[\text{INDEX}[2]]]...\rangle \end{bmatrix} \Rightarrow\ [1] = [\text{CASE}\ \textit{nom}]$$

We turn now to the distribution of gaps. One might suggest that nominal gaps must be accusative. This would exclude gaps from prepositional object, possessor and subject positions. However, we do find nominative gaps in examples like the following:

(44) ʔayy-u rajul-in Ali-un ___?
which-NOM man-GEN Ali-NOM
'Which man is Ali?'

A past tense counterpart has an overt copula, as (45) illustrates.

(45) ʔayy-a rajul-in kaana Ali-un ___?
which-ACC man-GEN was Ali-NOM
'Which man was Ali?'

Here an overt form of the copula has a gap as its complement. We assume then that examples like (44) involve a phonologically empty form of the copula with a gap as its complement. On this view, such examples have a complement gap which is nominative. Hence, nominative gaps are acceptable if they are complement gaps. There is also one accusative position in which a gap is not possible. This is the position following complementizer *ʔanna*, normally occupied by a subject, which is illustrated in (46).

(46) ħasiba Aħmad-u [ʔanna l-ʔawlaad-a ðahabuu].
thought.3SM Ahmad-NOM that the-boys-ACC left.3PM
'Ahmad thought the boys had left'

Only a resumptive and not a gap is possible in this position, as the following show:

(47) a. ʔayy-u l-ʔawlaad-i ħasiba Aħmad-u
which-NOM the-boys-GEN thought.3SM Ahmad-NOM

[ʔanna-**hum** ðahabuu]
that-they left.3PM
'Which boys did Ahmad think had left?'

b. *ʔayy-a l-ʔawlaad-i ħasiba Aħmad-u
which-ACC the-boys-GEN thought.3SM Ahmad-NOM
[ʔanna ___ ðahabuu]
that left.3PM

Instead of using case to restrict gaps, we propose to restrict them to being complements of a verb or adjective with the following constraint:

(48)

$$[1][gap] \Rightarrow \begin{bmatrix} \text{HEAD } verb \vee adj \\ \text{ARG-ST} < [] > \oplus < ...[1]... > \end{bmatrix}$$

This will include adverbial gaps if we assume that adverbials are extra members of ARG-ST lists (Ginzburg and Sag 2000: 168, fn.2). It is essentially a restricted version of the Trace Principle of Pollard and Sag (1994, section 4.4).

There is a further restriction on gaps that we need to consider. We noted earlier that while definite relatives allow both a gap and a resumptive clitic in object position, indefinite relatives only allow the latter in this position. To account for this contrast we need to ensure that the former are [SLASH {NP}] with no case restriction while the latter are [SLASH {NP[CASE *nom*]}]. If we assume with Alqurashi and Borsley (2012) that definite relatives are headed by the complementizer *llaðii* while indefinite relatives are headed by a phonologically empty complementizer, we can propose that the former has the description in (49) while the latter has that in (50).

(49)

$$\begin{bmatrix} \text{HEAD} \begin{bmatrix} c \\ \text{MOD NP[DEF +, INDEX [1]]} \end{bmatrix} \\ \text{COMPS} < \text{S[SLASH \{NP[INDEX [1]]\}]} > \end{bmatrix}$$

(50)

$$\begin{bmatrix} \text{HEAD} \begin{bmatrix} c \\ \text{MOD NP[DEF -, INDEX [1]]} \end{bmatrix} \\ \text{COMPS} < \text{S[SLASH \{NP[CASE } nom\text{, INDEX [1]]\}]} > \end{bmatrix}$$

This will ensure that indefinite relatives can only have a resumptive clitic and not a gap in object position.

4. More on coordination

An important issue arises with examples like (24), which have a gap in one conjunct and a resumptive pro in the other. On the face of it, such examples will have [SLASH {NP[CASE *acc*]}] in the first conjunct because the gap is accusative and [SLASH {NP[CASE *nom*]}] in the second conjunct because of the resumptive pro. This looks like a problem. However, following Levine, Hukari and Calcagno (2000), we can assume a type *nom&acc*, which is a subtype of both *nom* and *acc* and propose that *man* and the associated SLASH value are [CASE *nom&acc*]. This satisfies both the accusative requirement stemming from the gap and the nominative requirement stemming from the resumptive pro and constraint in (40).[6]

It seems, then, that examples like (24) are no problem. Clearly, however, we should ask about similar examples where the *wh*-phrase is unambiguously accusative or nominative. Consider, then, the following:

(51) ʔayy-a Tullaab-in [qaabalta __ wa taħaddaϴta
which-ACC students-GEN met.2SM and talked.2SM
ʔilai-**hum**]?
to-them
'Which students have you met and talked to?'

(52) ??ʔayy-u Tullaab-in [qaabalta __ wa taħaddaϴta
which-NOM students-GEN met.2SM and talked.2SM
ʔilai-**hum**]?
to-them
'Which students have you met and talked to?'

Speakers generally find examples like (51) with an accusative *wh*-phrase acceptable. They find examples like (52) with a nominative *wh*-phrase less acceptable, but they do not generally reject them. This is quite challenging. On the face of it, the coordinate structure in (51) has the structure in (53), while that in (52) has the structure in (54).

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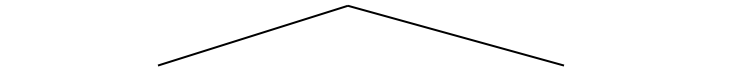
6 *Man* can also occupy a genitive position, as (i) shows:

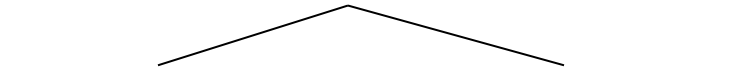
(i) [NP kitaab-a man] garaʔa ___ Ahmad-u?
book-ACC whoread.3SM Ahmad-NOM
'Whose book has Ahmad read?'

This suggests that *man* should in fact be [CASE *nom&acc&gen*], where *nom&acc&gen* is a subtype of *nom* and *acc* and *gen*.

(53) [SLASH {NP[CASE *acc*]}]



(54) [SLASH {NP[CASE *nom*]}]



Given the standard assumption that conjuncts have the same value for SLASH, these should be ill-formed. It looks as if it may be necessary to weaken this assumption. However, there may be an alternative explanation for speakers' judgements.

An important fact about MSA is that it is not anyone's native language. Rather it is the product of formal education. The native language of all users of MSA is one of the dialects of Arabic. These do not have morphological case. Hence with dialectal counterparts of (51) and (52) there is no issue about case and their acceptability is unproblematic. It may be, then, that speakers judging examples like (51) and (52) are influenced by their dialectal counterparts.

This may explain why speakers find examples like (51) and (52) acceptable but what about the fact that (52) is less acceptable than (51)? It may be that this is a reflection of the fact that (51) without the second conjunct is the grammatical sentence in (55), while (52) without the second conjunct is the ungrammatical sentence in (56).

(55) ʔayy-a Tullaab-in qaabalta __?
which-ACC students-GEN met.2SM
'Which students have you met?'

(56) *ʔayy-u Tullaab-in qaabalta __?
which-NOM students-GEN met.2SM

(56) is ungrammatical because the filler has a different case from the gap. It seems likely that speakers' judgements on examples like (51) and (52) are influenced by (55) and (56).

5. *ʔanna*-clauses

There is another construction that is unproblematic for the approach developed above. This is a type of subordinate clause introduced by *ʔanna*, which we assume is a complementizer. Here is a typical example:

(57) ʕalimtu [ʔanna l-ʔawlaad-a qaabaluu Aliy-an]
knew.1SM that the-boys-ACC met.3PM Ali-ACC
'I knew that the boys have met Ali'

Here, *ʔanna* is followed by an accusative NP, which is interpreted as the subject of the following verb. One might suppose that *ʔanna*-clauses are rather like English *for-to* clauses. However, the accusative NP is not always interpreted as the subject. In the following it is interpreted an object.

(58) ʕalimtu [ʔanna l-qiSat-a garaʔa-**ha** Ahmad-u]
knew.1SM that the-story-ACC read.3SM-it Ahmad-NOM
'I knew that (as for) the story, Ahmad read it.'

Notice that there is a clitic in this example. A similar example with a gap is ungrammatical:

(59) *ʕalimtu [ʔanna l-qiSat-a garaʔa Ahmad-u ___]
knew.1SM that the-story-ACC read.3SM-it Ahmad-NOM
'I knew that (as for) the story, Ahmad read it.'

We also have examples where the accusative NP is associated with a clitic attached to a preposition or a noun:

(60) ʕalimtu [ʔanna l-baiit-a kaan fii-**hi** rajul-un]
knew.1SM that the-house-ACC was in-it man-NOM
'I knew that there was a man in the house.'
(61) ʕalimtu [ʔanna l-baiit-a kasara Ahmad-u
knew.1SM that the-house-ACC broke.3SM Ahmad-NOM
baaba-**hu**]
door-ACC-it
'I knew that Ahmad broke the house door'

It seems that what we have in an *ʔanna*-clause is an accusative NP followed by a clause which is rather like an indefinite relative. As with an indefinite relative we can account for its properties by assuming that it is [SLASH {NP[CASE *nom*]}]. This will be realized as a pro in subject position ((57)) or in a position associated with a clitic ((58), (50), (61)) The NP in the value of SLASH must be coindexed with the accusative NP. Thus, we can propose the following category for *ʔanna*:

(62)

$$\begin{bmatrix} \text{HEAD } c \\ \text{SUBJ } \langle\,\rangle \\ \text{COMPS } \langle\, \text{NP[CASE } \textit{acc}, \text{INDEX}[1]], \\ \qquad\qquad \text{S[SLASH } \{\text{NP[CASE } \textit{nom}, \text{INDEX}[1]]\}]\,\rangle \end{bmatrix}$$

As one might expect, it is possible to have a gap in object position as long as it is not associated with the accusative NP following *ʔanna*. Consider the following:

(63) man taˤtaqidu [ʔanna l-ʔawlaad-a qaabaluu ___]?
who think.2SM that the-boys-ACC met.3PM
'Who do you think that the boys have met?'

This is *wh*-question and the gap in object position is associated with the *wh*-word *man*. As in (57), the accusative NP is associated with a pro in subject position.

6. Conclusions

In this paper we have investigated the behaviour of gaps and null resumptive pronouns in MSA. They differ in their distribution, but we have argued on the basis of coordination that both are realizations of the SLASH. We have argued that null resumptive pronouns are just ordinary null pronouns coindexed with the SLASH value of some head. Within this approach the fact that null resumptive pronouns generally have a different case from an associated filler is unproblematic. We have shown that the facts can be accounted for by a small number of constraints. We have also shown that there is no difficulty in accounting for the contrast between *wh*-questions and relative clauses with a definite antecedent, which allow a gap in object position, and relative clauses with an indefinite antecedent and *ʔanna*-clauses, which do not. The SLASH value of the former can have any value for CASE, whereas the SLASH value of the latter is NP[CASE *nom*]. It seems, then, that it is not too difficult to accommodate the facts within HPSG.

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