On exhaustive conditional clauses in Modern Standard Arabic

Abeer Alsulami
King Saud University, Riyadh

Robert D. Borsley
University of Essex and Bangor University

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Abstract

Simple conditional clauses identify a single condition under which a modified clause is true. In contrast, exhaustive conditionals (ECs) identify a set of conditions under all of which the clause is true. Two binary distinctions give four possible types of EC. Three of these are found in Modern Standard Arabic (MSA). Unlike English ECs, MSA ECs have essentially the same distribution as simple conditionals. Three rather different analyses seem appropriate for the three types, but they share a number of properties allowing the similarities between the three types to be captured.

1. Introduction

Simple conditional clauses, exemplified by English *if*-clauses, have been a focus of research by logicians and linguists for a very long time. (See e.g. Huddleston & Pullum 2002: 738-760 and Bhatt & Pancheva 2006 for useful discussion of many of the issues.) Over the last two decades, what are known as exhaustive conditionals (ECs) (or unconditionals), exemplified in English by examples like the following have also received some attention. (See e.g. Huddleston & Pullum 2002: 761-5, 985-91, Rawlins 2008, 2013, Arnold & Borsley 2014.)

(1) a. whatever you say
    b. whether you speak or not

Whereas simple conditional clauses identify a condition under which the main clause they modify is true, ECs identify a set of two or more conditions under all of which the clause is true. Simple conditionals can also refer to more than one condition, e.g. with *any*, as in *if you say anything*, or with *or*, as in *if you go to Paris or Rome*, but there is no requirement that they do so.

There is an important semantic distinction between universal ECs and alternative ECs. The former, exemplified by (1a) and the examples in (2), refer to all conditions of a certain form.

(2) a. whatever you read (all conditions of the form *you read x*)
    b. wherever you go (all conditions of the form *you go to x*)

* We are grateful to a number of colleagues for useful discussion of the issues addressed here, including Doug Arnold, Dan Flickinger, and Jacob Maché, and also to two referees for helpful comments. We alone are responsible for what appears here.

The latter, exemplified by (1b) and the following examples, essentially list the conditions.

(3) a. whether you go or not
    b. whether you go to Paris or to Berlin
    c. whether you go to Paris or to Berlin or Rome

While alternative ECs often involve *or not*, (3b) shows that they don't have to, and (3c) shows that they may identify more than two conditions.

Separate from this semantic distinction is a formal distinction, highlighted in Huddleston and Pullum (2002: 761-765), between ungoverned ECs and governed ECs. The former, exemplified by all the examples presented so far, involve just a clause of some kind. The latter involve a clause which is a dependent of an element such as *no matter*. The following illustrate:

(4) a. no matter what you read
    b. no matter where you go

These two distinctions give four types of ECs, as follows:

(5) Ungoverned universal ECs
    Ungoverned alternative ECs
    Governed universal ECs
    Governed alternative ECs

Of course, a language may not have all these types.

It is clear from Haspelmath & König (1998) that these two distinctions are relevant to many languages. This includes Modern Standard Arabic (MSA), but we will show below that MSA only has three of the four types identified above. Moreover, in MSA, it is not just the internal structure of ECs that is of interest but also their distribution. This is more like that of simple conditionals than it is with their English counterparts. Like simple conditionals, they can appear in both an ordinary head-adjunct clause and in an MSA counterpart of an English *if-then* clause.

The aim of this paper is to explore both the internal structure and the distribution of MSA ECs, and develop analyses within HPSG. Our main focus will be on syntax, but we will also consider semantics.

2. The basic data

MSA has **ungoverned universal ECs**, involving just a clause and referring to all conditions of a certain form, which are broadly similar to their English counterparts:

(6) [mahmɑ faʕala-t l-llajnat-u] sa-taðʕallu
whatever do.PAST.3SGF DEF-committee-NOM] will-continue
l-ʔintiqɑːdat-u tuwajjah ʔilay-hɑ
DEF-criticisms-NOM direct.PASS to-it.3SGF
'Whatever the committee does, criticisms will still be directed at it.'

The initial constituent may be nominal, as in (6), or adverbial, as in (7):

(7) [matamɑ takun l-ħaflat-u] ʔaðhab ʔilay-haa
whenever be.JUSS.3SGM the-party-NOM go.JUSS.1SG to-3SGF
'Whenever the party is, I'm going to it.'

Like their English counterparts, they appear to be head-filler phrases with one of a small set of lexical items in the filler. In addition to the items already illustrated, they may contain the following:

(8) *ʔayy* 'whoever'
ʔaynama 'wherever'
ħayθuma 'wherever'
kullama 'whenever'
kayfamaː 'however'

They may also have more complex NP or PP fillers, as the following show:

(9) a. [[ʔayy-a kitɑːb-in] taqraʔ] lan tastafiːda min-hu
whichever-ACC book-GEN read.2SGM NEG benefit.2SGM from-it
'Whichever book you read; you won't benefit from it.'
b. [[min ʔayy-i dawlat-in] qadim-ta] ʔanta
from whichever-GEN country-GEN came-2SGM 2SGM
muraħab-un bi-ka
welcome-NOM with-2SGM
'Whichever country you come from; you are welcome.'

In English, ungoverned universal ECs look like free relatives and it has sometimes been proposed that that is what they are. (See Rawlins 2008: 2.1.3 for critical discussion). In MSA, some free relatives look like ECs:

(10) saʔaʃtarii la-ka [mahmɑ turiidu]
will-buy.1SG.M/F for-2SGM whatever want.2SGM
'I will buy for you whatever you want.'

But free relatives are often quite different:

(11) saʔaχtɑːru [ʔallað turiːdu / turiːdu-hu].
will-choose.1SGM COMP want.2SGM / want.2SGM-it
'I will choose whatever you want.'

The free relative here is identical to an ordinary relative clause.

(12) saʔaχtɑːru l-kitɑːb-a [ʔallað turiːdu / turiːdu-hu]
will-choose.1SGM DEF-book-ACC COMP want.2SGM / want.2SGM-it
'I will choose the book you want.'

It is essentially a relative clause without a visible antecedent, and there is evidence that the element that introduces it is a complementizer (Alqurashi 2012). There are no ECs like this. Hence, there is no reason to consider a free relative analysis for ungoverned universal ECs in MSA.

In English, it has been argued by Huddleston and Pullum (2002: 761-765) and Rawlins (2008: 2.1.3, 2013: 3.1) that ungoverned universal ECs are *wh*-interrogatives. In MSA, ungoverned universal ECs cannot be *wh*-interrogatives because they have a different set of lexical items in the filler. Thus, the following are not possible interrogatives:

(13) a. *mahmɑ faʕala-t l-llajnat-u
whatever do.PAST.3SGF DEF-committee-NOM
'Whatever does the committee do?'
b. *matamɑ takunu l-ħaflat-u
whenever be.3SGM DEF-party-NOM
'Whenever is the party?'

Instead MSA has the following:

(14) a. maɑː faʕala-t l-llajnat-u
what do.PAST.3SGF DEF-committee-NOM
'What does the committee do?'
b. matɑː takunu l-ħaflat-u
when be.3SGM DEF-party-NOM
'When is the party?'

But although MSA ungoverned universal ECs are not *wh*-interrogatives, they are like *wh*-interrogatives in identifying a set of possible situations, and they indicate that all the situations are ones in which the modified clause is true.

MSA also has **ungoverned alternative ECs**, which look quite like their English translations:

(15) a. [ʔa-ðahab-ta ʔilaɑ:baris ʔam lam taðhab]
(Q)-go.PAST-2SGM to Paris or not go.PRES.2SGM
sa-taqdˤii: waqt-an mumtiʕ-an
will-have.2SGM time-ACC good-ACC
'Whether you go to Paris or not, you'll have a good time.'

b. [ʔa-ðahab-ta ʔilaɑ:baris ʔam ʔilaɑ:ru:mɑ:] (Q)-
go.PAST-2SGM to Paris or to Rome
sa-taqdˤii: waqt-an mumtiʕ-an
will-have.2SGM time.ACC good-ACC
'Whether you go to Paris or Rome, you'll have a good time.'

c. [ʔa-ðahab-ta ʔilaɑ:baris ʔam ʔilaɑ:ru:mɑ: ʔam ʔilaɑ:
(Q)-go.PAST-2SGM to Paris or to Rome or to
berli:n] sa-taqdˤii: waqt-an mumtiʕ-an
Berlin will-have.2SGM time.ACC good-ACC
'Whether you go to Paris or Rome or Berlin, you'll have a good time.'

These ECs are in fact identical to alternative interrogatives, which have the same form in both main clauses and complement clauses:

(16) a. (ʔa)-ðahab-ta ʔilaɑ:baris ʔam lam taðhab
(Q)-go.PAST.2SGM to Paris or not go.PRES.2SGM
'Did you go to Paris or not?'

b. saʔaluu:n-i: [(ʔa)-ðahab-ta ʔilaɑ:baris ʔam lam
ask.PAST.3PLM-1SGM/F Q-go.PAST-2SGM to Paris or not
taðhab]
go.PRES.2SGM
'They asked me whether you went to Paris or not.'

Ungoverned alternative ECs identify two or more possible situations in the same way as alternative interrogatives and indicate that all the situations are ones in which the modified clause true.

MSA also has **governed alternative ECs**, involving *sawa:ʔ-un* 'same' followed by an alternative interrogative:

(17) a. [sawɑ:ʔ-un [(ʔa)-ðahab-ta ʔilaɑ:baris ʔam lam
same-NOM Q-go.PAST-2SGM to Paris or not
taðhab]] sa-taqdˤii: waqt-an mumtiʕ-an
go.PRES.2SGM will-have.2SGM time-ACC good-ACC
'No matter whether you go to Paris or not, you'll have a good time.'

b. [sawɑːʔ-un [(ʔa)-ðahab-ta ʔilɑɑː baris ʔam ʔilɑɑː
same-NOM (Q)-go.PAST-2SGM to Paris or to
ruːmɑː]] sa-taqdˁiː waqt-an mumtiʕ-an
Rome will-have.2SGM time.ACC good-ACC
'No matter whether you go to Paris or Rome, you'll have a good time.'

These ECs look rather like English ECs with *no matter*. They look even more like certain Finnish ECs which also involve a word meaning 'same', e.g. the following from Haspelmath & König (1998: 618):

(18) [Ihan sama [mitä hän sanoo]], mies psyy vaiti.
quite same what she says man stays silent
'No matter what she says, he keeps quiet.'

The appearance of a word meaning 'same' clearly reflects the fact that the main clause is true in all of the situations identified by the EC. Hence, they are all equally good, or the same. Haspelmath & König also give similar examples from Polish (19) and Romani (20).

(19) [Wszystko jedno [czy pójdziemy do teatruczy czy
all one whether go.1PL to theatre whether
zostaniemy w domu]], chciałbym spędzicć ten wieczór
stay.1PL at home want.SUBJ.1SG spend.INF this evening
z tobą
with you
'Whether we go to the theatre or spend the evening at home, I would like to spend the evening with you.' (1998: 601)

(20) [Sa jekh [kaj voj ža-l-a]] vov šoha či mekh-el-a
all one where she go-3SG-FUT he never not leave-3SG-FUT
la
he
'No matter where she goes, he will never leave her.' (1998: 618)

In both, 'all one' indicates that all the conditions are equally good.

The examples in (4), (18) and (20) contain a *wh*-interrogative. The example in (19) contains an alternative interrogative, but a *wh*-interrogative is also possible after *wszystko jedno*, as (21) illustrates.[1]

(21) [wszystko jedno [gdzie pójdziemy]]
all one where go.1PL
'wherever you go'

[1] We are grateful to Ewa Jaworska for advice on Polish.

In contrast, the MSA construction can only contain an alternative interrogative. Thus, the following with a *wh*-interrogative are ungrammatical:

(22) a. *[sawɑːʔ-un [maɑː faʕala-ta]], sa-taqdˁii: waqt-an
same-NOM what do.PAST-2SGM will-have.2SGM time.ACC
mumtiʕ-an]
good-ACC
'No matter what you do, you will have a good time.'

b. *[sawɑːʔ-un [matɑː ðahab-ta]], sa-taqdˁii: waqt-an
same-NOM when go.PAST-2SGM will-have.2SGM time.ACC
mumtiʕ-an]
good-ACC
'No matter when you go, you will have a good time.'

These examples would also be ungrammatical with *mahma* and *matama* instead of *maaː* and matɑː. Thus, *sawaːʔ-un* cannot combine with an ungoverned universal EC any more than a *wh*-interrogative. It seems, then, that MSA has no governed universal ECs.

Turning to the **distribution of MSA ECs**, they are like simple conditional clauses and other adjunct clauses in modifying an ordinary clause that can stand alone. The following show that the second clauses in (6) and (15a) are ones that can stand alone:

(23) sa-taðˁallu l-ʔintiqɑːdat-u tuwajjah ʔilay-hɑ
will-continue DEF-criticisms-NOM direct.PASS to-it.3SGF
'Criticisms will still be directed at it.'

(24) sa-taqdˁii: waqt-an mumtiʕ-an
will-have.2SGM time-ACC good-ACC
'You'll have a good time.'

The following show that simple conditional clauses and other adjunct clauses can modify an ordinary clause that can stand alone.

(25) a. [ʔiðɑː ʔaχtˁaʔa -t l-llajnat-u]
if makes a mistake.PAST.3SGF DEF-committee-NOM
sa- tuwajjah l-ʔintiqɑːdat-u ʔilay-hɑ
will-direct.PASS DEF-criticisms-NOM to-it.3SGF
'If the committee makes mistake, criticisms will be directed at it.'

b. sa- tuwajjah l-ʔintiqɑːdat-u ʔilay-hɑ
will-direct.PASS DEF-criticisms-NOM to-it.3SGF
'Criticisms will be directed at it.'

(26) a. [ħiːna / ħiːnamɑː tuχtˁiʔu
when when makes a mistake.PRES.3SGF
l-llajnat-u] tuwajjahu l-ʔintiqɑːdat-u
DEF-committee-NOM direct.PASS DEF-criticisms-NOM
ʔilay-hɑ
to-it.3SGF
'When the committee makes a mistake, criticisms are directed at it.
b. tuwajjahu l-ʔintiqɑːdat-u ʔilay-hɑ
direct.PASS DEF-criticisms-NOM to-it.3SGF
'Criticisms are directed at it.'

As one might expect, the adjunct clause can precede or follow the clause it modifies. These are alternative versions of (6) (with an ungoverned universal EC), (25a) (with a simple conditional clause), and (26a) (with a 'when' clause):

(27) sa-taðˁallu l-ʔintiqɑːdat-u tuwajjah ʔila
will-continue DEF-criticisms-NOM direct.PASS to
l-llajnat-i [mahmɑ faʕala-t]
DEF-commit()tee-GEN whatever do.PAST.3SGF
'Criticisms will still be directed at the committee, whatever it does.'
(28) sa-taðˁallu l-ʔintiqɑːdat-u tuwajjah ʔila
will-continue DEF-criticisms-NOM direct.PASS to
l-llajnat-i [ʔiðɑː ʔaχtˁaʔa -t]
DEF-committee-GEN if makes a mistake.PAST.3SGF
'Criticisms will still be directed at the committee, if it makes a mistake.'
(29) tuwajjahu l-ʔintiqɑːdat-u ʔila l-llajnat-i
direct.PASS DEF-criticisms-NOM to DEF-committee-GEN
[ħiːna / ħiːnamɑː tuχtˁiʔu]
when makes a mistake.PRES.3SGF
'Criticisma are directed at the committee, when it makes a mistake.'

In MSA, as in English, simple conditionals can also modify a clause with a special marking which cannot stand alone. We have examples like (30a), where, as (30b) shows, the modified clause cannot stand alone:

(30) a. ʔiðɑː ʔaχtˁaʔa -t l-llajnat-u]
if makes a mistake.PAST.3SGF DEF-committee-NOM
fa-sa-tuwajjah l-ʔintiqɑːdat-u ʔilay-hɑ
then-will-direct.PASS DEF-criticisms-NOM to-it.3SGF
'If the committee makes mistake, criticisms will be directed at it.'

b. *fa-sa-tuwajjah l-ʔintiqɑːdat-u ʔilay-hɑ
then-will-direct.PASS DEF-criticisms-NOM to-it.3SGF

In English, ECs cannot modify a marked clause:[2]

(31) Whatever the committee does, (*then) criticisms will be directed at it.

But this is possible in MSA. The following illustrates for ungoverned universal ECs:

(32) [mahmɑɑ: faʕala-t l-llajnat-u]
whatever do.PAST-3SGF DEF-committee-NOM
fa-sa-tuwajjah l-ʔintiqɑːdat-u ʔilay-hɑ
then-will-direct.PASS DEF-criticisms-NOM to-it.3SGF
'Whatever the committee does, criticisms will be directed at it.'

Ungoverned alternative ECs and governed alternative ECs are the same.

(33) [ʔa-ðahab-ta ʔilɑɑ: baris ʔam lam taðhab]
(Q)-go.PAST-2SGM to Paris or not go.PRES.2SGM
fa-sa-taqdʕii: waqt-an mumtiʕ-an
then-will-have.2SGM time-ACC good-ACC
'Whether you go to Paris or not, you'll have a good time.'

(34) [sawɑːʔ-un [(ʔa)-ðahab-ta ʔilɑː baris ʔam lam taðhab]]
same-NOM Q-go.PAST-2SGM to Paris or not go.PRES.2SGM
fa-sa-taqdʕii: waqt-an mumtiʕ-an
then-will-have.2SGM time-ACC good-ACC
'No matter whether you go to Paris or not, you'll have a good time.'

Whereas both simple conditionals and ECs can follow as well as precede an unmarked clause, they can only precede a marked clause, as the following (ungrammatical versions of (30a), (32), (33) and (34)) show:

[2] Bhatt & Pancheva (2006: 4.1.1) highlight a number of situations in which *then* is unacceptable in an English conditionals, among them situations where 'the antecedent explicitly exhausts all possibilities', which they illustrate with the following (where '#' indicates unacceptability):
(i). If John is dead or alive, (# *then*) Bill will find him.
On the face it, this would exclude *then* after an exhaustive conditional. It seems that MSA *fa-* is not restricted in this way.

(35) *fa-sa-taðˤallu l-ʔintiqɑːdat-u tuwajjah ʔila
then-will-continue DEF-criticisms-NOM direct.PASS to
l-llajnat-i [ʔiðɑː ʔaχtˤaʔa-t]
DEF-committee-GEN if makes a mistake.PAST.3SGF
'Criticisms will still be directed at the committee, if it makes a mistake.'

(36) *fa-sa-tuwajjah l-ʔintiqɑːdat-u ʔila
then-will-direct.PASS DEF-criticisms-NOM to
l-llajnat-i [mahmɑɑː faʕala-t]
DEF-committee-GEN whatever do.PAST-3SGF
'Criticisms will be directed at the committee, whatever it does.'

(37) *fa-sa-taqdˤiiː waqt-an mumtiʕ-an
then-will-have.2SGM time-ACC good-ACC
[ʔa-ðahab-ta ʔilaɑː baris ʔam lam taðhab]
(Q)-go.PAST-2SGM to Paris or not go.PRES.2SGM
'You'll have a good time, whether you go to Paris or not.'

(38) *fa-sa-taqdˤiiː waqt-an mumtiʕ-an
then-will-have.2SGM time-ACC good-ACC
[sawɑːʔ-un [(ʔa)-ðahab-ta ʔilaɑː baris ʔam lam taðhab]]
same-NOM Q-go.PAST-2SGM to Paris or not go.PRES.2SGM
'You'll have a good time, no matter whether you go to Paris or not.'

3. Analyses

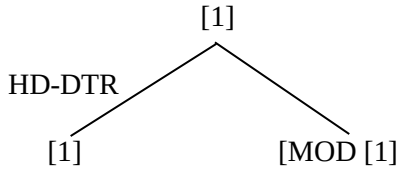
We will look first at **the distribution of ECs** and then consider their internal structure. The central fact here is that they can modify either an ordinary clause that can stand alone or a clause marked by *fa-*. The first situation is a simple matter. The second is more challenging.

Combinations of simple conditional or EC and an ordinary clause can be analysed as head-adjunct structures just like other combinations of adverbial clause and main clause. We assume the following coinstraint:

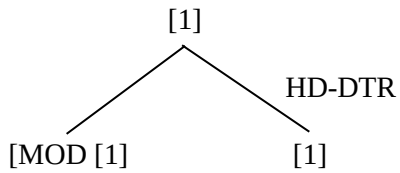
(39) *hd-adj-ph* $\Rightarrow \begin{bmatrix} \text{DTRS} < [1][\text{SS}\ [2]], [\text{HEAD}\ [\text{MOD}\ [2]]] > \\ \text{HD-DTR}\ [1] \end{bmatrix}$

Assuming that some general constraint, e.g. the Generalized Head Feature Principle of Ginzburg & Sag (2000), requires a phrase and its head to normally have the same syntactic and semantic properties, this will give structures of the following form (where the daughters may appear in either order):

(40)

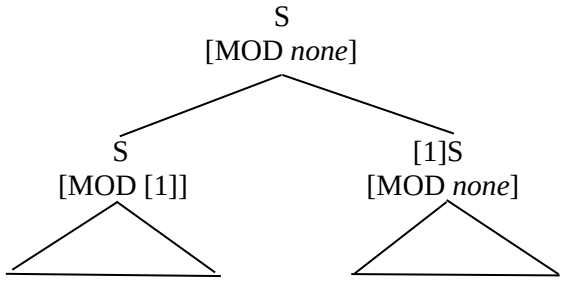


(41)



The examples in (6), (7), (9), and (15) will have structures of the following form:

(42)



The example in (27), in which the adjunct clause comes second will have a structure of this form with the order of the daughters reversed. We will propose below that governed alternative ECs introduced by *sawa:ʔ-un* are NPs. This means that the examples in (17), where EC contains *sawa:ʔ-un* will have a structure like (42) in which the modifier is an NP.

Combinations of simple conditional or EC and a clause marked by *fa-* are different. They cannot be analysed as ordinary head-adjunct structures. If they were, they would have the same SYNSEM value as the *fa*-clause, which would leave us without an explanation for the fact that such combinations are ordinary main clauses, which, unlike *fa*-clauses, can stand on their own. Like simple conditionals, they are one of a number of types of correlative clause, discussed Alqurashi & Borsley (2014), in which an adverbial clause and a main clause both have some distinctive marking and the main clause cannot appear on its own. The following illustrate:

(43) a. [bimaa ʔannka taqraʔu ʔakθar] [ʔiðann
as/since COMP.2SGM read-IMPF.2SGM more so
sa-tafhamu ʔakθar]
will-understand.IMPF.2SGM more
'As/since you read more, so you will understand more.'

b. *ʔiðann sa-tafhamu ʔakθar
so will-understand.IMPF.2SGM more

(44) a. [biqadri-maa taqraʔ] [biqadri-maa tafham]
as-much-as read-IMPF.2SGM as-much-as understand. IMPF.2SGM
'As much as you read, so much you understand.'

b. *biqadri-maa tafham
as-much-as understand. IMPF.2SGM

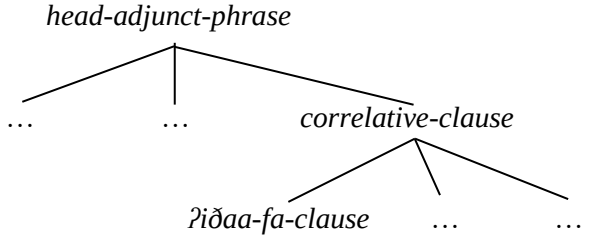
(45) a. [kullamã qaraʔta ʔakθar] [kullamã fahimta ʔakθar]
whenever read.PERF.2SGM more whenever understand.PERF.2SGM more
'Whenever you read more, you understood more.'
'The more you read, the more you understood.'

b. *kullamã fahimta ʔakθar]
whenever understand.PERF.2SGM more

The type of analysis proposed by Alqurashi & Borsley (2014) for these examples can also be applied to ECs combining with a clause marked by *fa-*.

These clause types are unproblematic if general constraints can be overridden by more specific constraints since this means a constraint can require a phrase and its head to differ in some respects. Following Alqurashi & Borsley (2014), we assume that a number of types of clause with a distinctive form have a value other than *none* for a feature CORREL, while ordinary clauses which can stand alone are [CORREL *none*].[3] We propose that there is a subtype of *head-adjunct-phrase* called *correlative-clause*, and that it has a number of subtypes, including *ʔiðaa-fa-clause*, giving the following type hierarchy:

(46)



We propose that *correlative-clause* and *ʔiðaa-fa-clause* are subject to the following constraints:

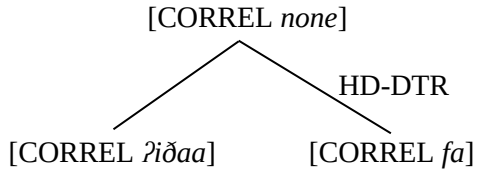
[3] Essentially the same CORREL feature was assumed in Abeillé, Borsley, Espinal 2006) and Borsley (2011). It is also assumed more recently in Abeillé & Chaves 2021: 3.3).

(47) *correlative-cl* $\Rightarrow \begin{bmatrix} \text{CORREL } none \\ \text{DTRS} < [\text{CORREL } \neg none], [\text{CORREL } \neg none] > \end{bmatrix}$

(48) *ʔiðaa-fa-cl* ⇒ [DTRS <[CORREL *fa*], [CORREL *ʔiðaa*]>]

Together they give clauses with structures with following form for of (30a), (32), (33) and (34):

(49)



If both simple conditionals and ECs are [CORREL *ʔiðaa*], they will appear in these clauses.

The analysis needs one further component: a constraint to ensure that the main clause, marked with *fa-*, comes second in correlative clauses, including *ʔiðaa-fa* clauses. The following seems appropriate:

(50) *correlative-cl* $\Rightarrow \begin{bmatrix} \text{PHON } [1] \oplus [2] \\ \text{DTRS} < [\text{PHON } [2]], [\text{PHON } [1] > \end{bmatrix}$

With this, we have a fairly simple account of the distribution of ECs, which captures their similarity to simple conditionals and some other types of clause which can appear in correlative clauses.

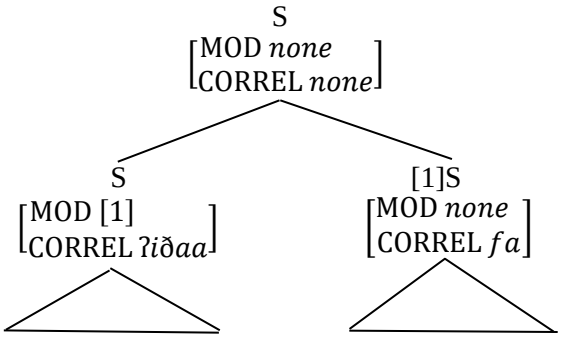
An important feature of this analysis is that [CORREL *ʔiðaa*] clauses do not always contain the lexeme *ʔiðaa*. But the following suggests that English [CORREL *if*] clauses do not always contain the lexeme *if*:

(51) Had I been there, then I would have seen you.

Thus, there is no obvious reason why clauses which do not contain *ʔiðaa* should not be [CORREL *ʔiðaa*].

Within this analysis, (32) and (33) will have structures of the following form:

(52)



(34) will have a similar structure in which the modifier is an NP.

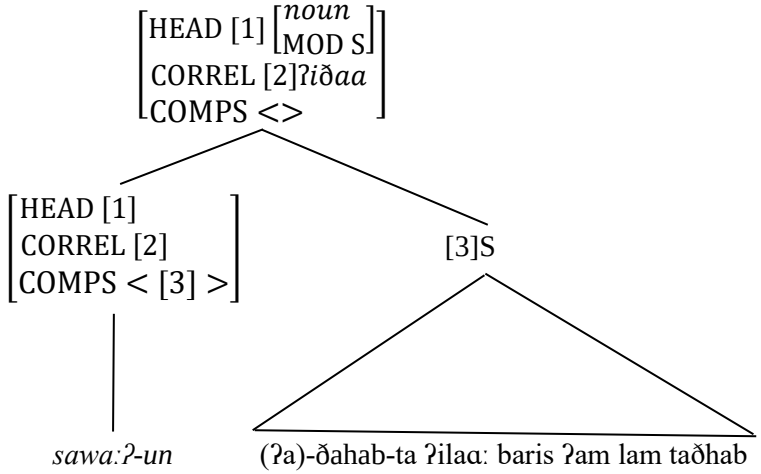
We can turn now to **the internal structure of ECs**. We will begin with **governed alternative ECs** such as those in (17). Essentially, all that is needed here is an appropriate analysis for *sawa:ʔ-un*.

Like *no matter*, as discussed in Arnold and Borsley (2014), *sawa:ʔ-un* can be analysed as a head which takes an interrogative and derives a conditional meaning from it, but unlike *no matter*, it only takes an alternative interrogative. Given the approach just proposed to the distribution of ECs, ECs and hence *sawa:ʔ-un*, must be [CORREL *ʔiðaa*]. This suggests an analysis of the following form for *sawa:ʔ-un*:

(53)
$$\begin{bmatrix} \text{SS|LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} noun \\ \text{MOD S: [1]} \end{bmatrix} \\ \text{CORREL } ʔiðaa \end{bmatrix} \\ \text{CONT } ex\text{–}cond\ ([2], [1]) \end{bmatrix} \\ \text{ARG–ST } \left\langle \begin{bmatrix} \text{LOC} \begin{bmatrix} \text{CAT S} \\ \text{CONT [2]} \end{bmatrix} \end{bmatrix} \right\rangle \end{bmatrix}$$

Following Arnold and Borsley (2014: 33), *ex-cond* ([2], [1]) is a condition which holds just in case [1] holds in every situation identified by [2]. Nothing here ensures that the complement is an alternative interrogative. This should probably be done with an appropriate CONT value, perhaps drawing on the analysis of Yoo (2000). With this analysis for *sawa:ʔ-un*, we will have a structure of the form in (54) for the EC in (17a) ('No matter whether you go to Paris or not').

(54)



There is no need for (52) to specify what the modified S can be. The grammar will allow either an S[CORREL *none*] in an ordinary head-adjunct clause or a *fa*-clause in an *ʔidaa-fa* clause.

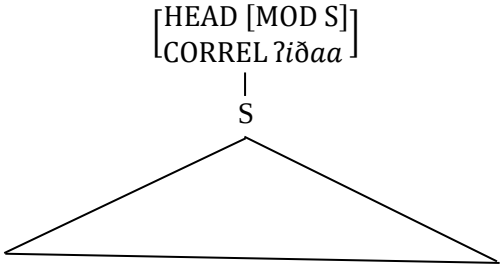
We can turn next to **ungoverned alternative ECs**. One possibility for ungoverned alternative ECs would be an analysis involving a phonologically null counterpart of *sawa:ʔ-un*. But if one shares the standard HPSG preference to avoid empty elements, the obvious alternative is a unary branching analysis in which the daughter has an interrogative meaning just like the complement of *sawa:ʔ-un* and the mother derives a conditional meaning from it in essentially the same way as *sawa:ʔ-un* does. We propose a phrase type *ungoverned-alternative-ec* subject to the following constraint:

(55) *ungoverned-alternative-ec* ⇒

$$\begin{bmatrix} \text{SS|LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD [MOD S: [1]]} \\ \text{CORREL } ʔiðaa \end{bmatrix} \\ \text{CONT } ex\text{–}cond\ ([2],[1]) \end{bmatrix} \\ \text{DTRS} \left\langle \begin{bmatrix} \text{LOC} \begin{bmatrix} \text{CAT S} \\ \text{CONT [2]} \end{bmatrix} \end{bmatrix} \right\rangle \end{bmatrix}$$

As with the complement in (45), it needs to be specified that the daughter is an alternative interrogative, probably with an appropriate CONT value. This will give a structure of the following form for the EC in (15a) (‘whether you go to Paris or not’):

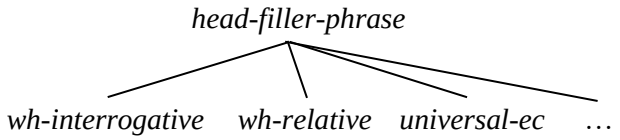
(56)



Finally, we can consider **ungoverned universal ECs** (which, as we have noted, are the only type of universal EC). We have seen that they involve head-filler phrases in which the filler contains one of a small number of EC words. If they were identical to *wh*-interrogatives like their English counterparts, it would be reasonable to propose a unary branching analysis like that we have proposed for ungoverned alternative ECs.[4] It is clear that they are not *wh*-interrogatives, but the analysis of *wh*-interrogatives is still of some relevance. As we noted above, they are like *wh*-interrogatives in identifying a set of possible situations, but unlike *wh*-interrogatives in indicating that all the situations are ones in which the modified clause is true.

We propose that ungoverned universal ECs involve a special subtype of *head-filler-phrase*, which we will call the subtype *universal-ec*. In other words, we assume a type hierarchy of the following form:

(57)



This subtype needs to have the following properties:

- It has a filler with one of a small number of EC words.
- It modifies a clause.
- It is [CORREL *ʔidaa*].
- It has conditional semantics.

We attribute these properties to the following constraint:

[4] However, not all English *wh*-interrogatives can be ECs. *Whatever he did* and *whether he did it or not* can be ECs, but *what he did* and *whether he did it* can't. Arnold & Borsley (2014: 34) note this, but do not discuss how overgeneration could be avoided.

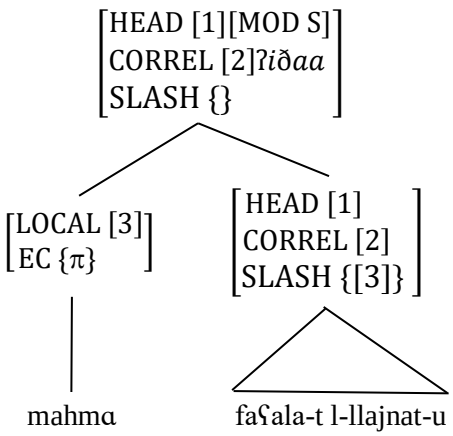
(58) *universal-ec* ⇒

$$\begin{bmatrix} \text{SS|LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD [MOD S: [1]]} \\ \text{CORREL } \textit{ʔidaa} \end{bmatrix} \\ \text{CONT } \textit{ex–cond } (\lambda\{\pi, \ldots\}[\lambda\mathbf{X}[\mathbf{Y}](\mathbf{Z})], [1]) \end{bmatrix} \\ \text{DTRS } \langle \begin{bmatrix} \text{EC } \{\pi\} \\ \text{CONT } \mathbf{Z} \end{bmatrix}, \begin{bmatrix} \text{SLASH } \{[\text{CONT } \mathbf{X}]\} \\ \text{CONT } \mathbf{Y} \end{bmatrix} \rangle \end{bmatrix}$$

We have an EC feature here where *wh*-interrogatives have WH, and we assume that its value, like that of WH, is a set containing a single parameter, a combination of an index and a restriction. Building on Sag's (2010: 5.3) analysis of *wh*-interrogatives, we assume that the semantics involves a propositional abstract constructed from the semantics of the daughters, but unlike with *wh*-interrogatives, this is the first argument of *ex-cond*, and the modified clause is the second argument as before. This is also somewhat like Sag's (2010: 5.4) analysis of *wh*-relatives, in which a modifying semantics is based on a clausal semantics.

With this analysis, we will have a structure of the following form for the EC in (6):

(59)



With this we have an analysis of all three types of EC.

4. Concluding remarks

In this paper, we have outlined analyses of both the distribution of MSA ECs and the internal structure and interpretation of the three different types. We have argued for the following positions:

- Like simple conditionals, ECs can be the adjunct in both an ordinary head-adjunct clause and a *ʔiðaa-fa* subtype of correlative clause.

- Governed alternative ECs are head-complement phrases, in which a head takes an alternative interrogative as its complement and derives a conditional meaning from it.

- Ungoverned alternative ECs have a unary branching analysis in which the daughter is an alternative interrogative and the mother derives a conditional meaning from it.

- Ungoverned universal ECs involve a subtype of head-filler phrase, which derives a conditional meaning from its daughters.

We have developed three rather different analyses here for the three types of ECs that occur in MSA. We think this is justified by their rather different properties. However, the analyses share certain features reflecting the shared properties. All have a MOD value allowing them to modify a clause, all have the [CORREL *ʔidaa*] specification allowing them to be the adjunct daughter in an either an ordinary head-adjunct clause or an *ʔidaa-fa* clause, and all have conditional semantics, based on EX-COND. We think, then, that the analyses capture both the differences and the similarities among MSA ECs.

Naturally, there are further issues that merit discussion here. We have emphasized similarities between ECs and simple conditionals, which are greater in MSA than English. There are, however, important differences in MSA, as in Engish. One involves *faqatˁ* 'only'. This can be added to a simple conditional, as the following illustrate:

(60) a. saʔaraː-ka ʔiðaː kunta fi bariːs ʔaw
will-see.1SG.F/M-2SGM if was.2SGM in Paris or
ruːma
Rome
'I will see you if you are in Paris or Rome.'

b. saʔaraː-ka faqatˁ ʔiðaː kunta fi bariːs
will-see.1SG.F/M-2SGM only if was.2SGM in Paris
ʔaw ruːma
or Rome
'I will see you only if you are in Paris or Rome.'

But *faqatˁ* cannot be added to an EC. Hence, only (a) is acceptable in the following:

(61) a. saʔaraː-ka kunta fi bariːs ʔaw ruːma
will-see.1SG.F/M-2SGM was.2SGM in Paris or Rome
'I will see you whether you are in Paris or Rome.'

b. *saʔaraː-ka faqatˤ kunta fi bariːs ʔaw ruːma
will-see.1SG.F/M-2SGM only was.2SGM in Paris or Rome
'*I will see you only whether you are in Paris or Rome.'

There is nothing in our analysis that suggests there should not be differences as well as similarities between ECs and simple conditionals. As the translations indicate, the same contrast is found in English, and we assume that it will be explained in the same way in the two languages.

There is at least one important limitation of our discussion. We have focused throughout on ECs modifying declarative clauses. But in MSA, as in English, both simple conditionals and ECs can also modify interrogatives and imperatives, as the following show:

(62) a. [ʔiðaː ðahab-ta hunaːk]maðaː sa-tafʕal?
if go.PAST.2SGM there, what will-do.2SG.M?
'If you go there, what will you do?'

b. [ʔiðaː ðahab-ta hunaːk] sallim ʕalay-him
if go.PAST.2SGM there greet.2SGM to-him.
'If you go there, greet him.'

(63) a. [ʔaynmaː ðahab-ta] hal sa-taʕuːdu sariːʕ-an?
wherever go.PAST.2SGM Q will-back quickly-ACC
'Wherever you go, will you come back quickly?'

b. [ʔaynmaː ðahab-ta] badir bi-tˤrħ-I
wherever go.PAST.2SGM initiate.2SGM with-ask-GEN
l-ʔsʔilat-i
DEF-questions-GEN
'Wherever you go, ask questions.'

The approach to conditionals assumed here seems to deal well with declaratives, but on the face of it, it needs to be revised or extended in some way to accommodate interrogatives and imperatives. But this is an issue that is not specific to MSA. The facts are essentially the same in English, and no doubt other languages. We assume, therefore, that whatever approach seems appropriate elsewhere could be extended to MSA.[5]

[5] For some discussion, see e,g. Isaacs & Rawlins (2008) and Kaufmann & Schwager (2009).

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