University of Essex

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Robert D. Borsley
University of Essex
rborsley@essex.ac.uk

Mohamed Krer
University of Essex
mmkrer@essex.ac.uk

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Dept. of Language and Linguistics,
University of Essex,
Wivenhoe Park,
Colchester, Essex, UK,
CO4 3SQ

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AN HPSG APPROACH TO NEGATION IN LIBYAN ARABIC[1]

Robert D Borsley and Mohamed Krer
University of Essex

1. Introduction

Negation in Libyan Arabic, more precisely in the Arabic of Western Libya, including the Western mountains and the Tripoli area, involves a variety of complexities. It is marked on a number of different elements, it interacts in an important way with n-words and negative polarity items, and the copula has special present tense negative forms. In this paper we will set out the facts and then show how they can be accommodated within Head-driven Phrase Structure Grammar (HPSG).

The paper is organized as follows. In section 2, we look at negation on verbs and distinguish between a strong form and a weak form. In section 3, we consider negative forms of the copula, and in section 4, we look at other negative-marked words. Then, in section 5, we outline an analysis, providing relevant lexical descriptions, syntactic structures, and an account of weak negation. In section 6, we introduce a further restriction and show how it can be accounted for. Finally, in section 7, we summarize the paper.

2. Verbal negation, strong and weak

Like the other North African dialects of Arabic (Lucas 2007, 2009, Lucas and Lash 2010), Libyan Arabic has a bipartite realization of negation with the proclitic *ma-* and the enclitic *-š*. Most commonly they are attached to the main verb. Thus, the negative counterpart of (1a) and (2a) are (1b) and (2b).

(1) a. la-wlaad mšuu li-l-madrsa
the-boys go.PAST.3.PL to-the-school
'The boys went to the school.'

b. la-wlaad **ma**-mšuu-**š** li-l-madrsa
the-boys NEG-go.PAST.3.PL-NEG to-the-school
'The boys didn't go to the school.'

(2) a. l-ktaab kaan ƶdiid/ foog ṭ- ṭaawla/ riwaaya
the-book be.PAST.3.M.SG new.3.M.SG on the table novel
'The book was new/on the table/a novel.'

b. l-ktaab **ma**-kaan-**š** ƶdiid/ foog ṭ- ṭaawla/ riwaaya
the-book NEG-be.PAST.3.M.SG-NEG new.3.M.SG on the table novel
'The book was not new/on the table/a novel.'

[1] We are grateful to Chris Lucas for helpful comments on an early version of this paper. We have also benefited from the comments of Mike Jones and Andrew Radford.

For reasons that will become clear shortly we will refer to the combination of *ma-* and *-š* as strong negative marking. Normally these elements are attached to the main verb in the clause, but as we will see later, there are certain other possibilities.

An important complication arises when the negative clause contains an n-word such as *ħad* 'nobody' or *šay* 'nothing' or a negative polarity item (NPI) such as *ħatta ħad* 'anyone' or *ħatta šay* 'anything'. These elements are distinguished by the fact that the former but not the latter can be used as elliptical negative answers to questions (de Swart 2010). The following illustrate:

(3) A: min šuft?
who see.PAST.2.M.SG?
'Who did you see?'
B: ħad/ *ħatta waħad
nobody anyone

(4) A: šini derit?
what do.PAST.2.M.SG?
'What did you do?'
B: šay/ *ħatta ħaža
nothing anything

When a negative clause contains one of these items, *ma-* appears without *-š*:

(5) **ma**-šuft ħad/ šay/ ħatta ħad / ħatta ħaža.
NEG-see.PAST.1.SG nobody nothing anybody anything
'I saw nodody/nothing'/'I didn't see anything/anybody.'

We will refer to *ma-* without *-š* as weak negation. It is obligatory in (5). Thus, the various versions of (5) would be ungrammatical with *-š*:

(6) ***ma**-šuft-š ħad/ šay/ ħatta waħad/ ħatta ħaža
NEG-see.PAST.1.SG-NEG nobody nothing anybody anything

They would also be ungrammatical without *ma-* except in the case of *šay*.

(7) a. *šuft ħad/ ħatta waħad/ ħatta ħaža
see.PAST.1.SG nobody anybody anything
b. šuft šay.
see.PAST.1.SG something
'I saw something.'

We assume that this is because n-words and NPIs require a negative context.[2] We assume that (7b) is grammatical because *šay* is ambiguous and can be either an n-word or a positive quantifier meaning 'something'.

[2] Some but not all of these elements can also occur in conditional contexts.

A negative clause may have an n-word or an NPI in various positions. In (5) they are in object position. They can also appear in subject position as in the following:

(8) **ma**-ja ħad/ šay/ ħatta waħad/ħatta ħaža.
NEG-come.PAST.3.SG nobody nothing anybody anything
'Nobody/nothing came.'

They can also be part of a complement.

(9) a. **ma**-tkallamet [$_{PP}$ ʕan ħad/ ħatta waħad]
NEG-talk.PAST.1.M.SG about nobody anybody
'I talked about nobody.'/'I didn't talk about anybody.'
b. ma-xadiit [$_{NP}$ ktaab ħad / ħatta waħad]
NEG-take.PAST.1.SG book nobody anybody
'I didn't take anybody's book.'

Like other Arabic dialects Libyan allows both VSO and SVO order. However variants of (8) with SVO order are ungrammatical.

(10) *ħad/ šay/ ħatta waħad/ħatta šay **ma**-ja .
nobody nothing anybody anything NEG-come.PAST.3.SG
'Nobody/nothing came.'

It seems, then, that neither an n-word nor an NPI can precede the associated negative marking. Notice, however, that the following is possible:

(11) **ma**-ħad ja
NEG-nobody come.PAST.3.SG
'Nobody came.'

Here, the n-word *ħad* precedes the verb, but the negation is marked not on the verb but on *ħad* itself. Hence the n-word does not precede the associated negative marking. This is one of a number of situations in which negation is marked on something other than the verb. It is also one of a number of situations which show that negation must be marked as early as possible.

In the examples in (5) the n-words and NPIs are in the same clause as the negative verb. If the n-word or NPI is in an embedded clause, we have strong negation, as (12) shows.

(12) **ma**-nḍun-**š** [☜in-hum ħa-yalguu ħad / ħatta waħad]
NEG-think-PRES-1.SG-NEG that-3.PL FUT-find.PRES.3.PL nobody anybody
'I do not think that they will find anybody.'

A similar example with weak negation is ungrammatical:

(13) ***ma**-nḍun [ḍin-hum ħa-yalguu ħad / ħatta waħad]
NEG-think.PRES.1.SG that-3.PL FUT-find.PRES.3.PL nobody anybody

As we would expect, an example with no negation is also ungrammatical:

(14) *nḍun [ḍin-hum ħa-yalguu ħad / ħatta waħad]
think.PRES.1.SG that-3.PL FUT-find.PRES.3.PL nobody anybody

We conclude that it is only when the n-word or NPI is in the same clause as the negative marking that we have weak negation.

The appearance of weak negative marking in examples with an n-word or an NPI is not a particularly surprising phenomenon. It is quite common for languages to avoid 'too much' negation. Thus, in French, negation is normally expressed by the proclitic *ne* and the adverb *pas*, but only *ne* appears when the clause contains an n-word (see e.g. Rowlett 1998: chapters 4 and 5). Obviously, this is rather like Libyan. Even more like Libyan is Breton, where negation normally involves the proclitic *ne* and the enclitic *ket* but where only the former appears when an n-word is present (see Willis forthcoming).

There is another situation in which weak negative marking occurs. This is in oaths, where we have data like the following:[3]

(15) a. w-allahi **ma**-xdiit-ha
and-Allah NEG-took.1.SG-3.F.SG
'I swear to God I did not take it.'
b. *w-allahi **ma**-xdiit-ha-**š**
and-Allah NEG-took.1.SG-3.F.SG-NEG

(15a) shows weak negation and (15b) shows that it is obligatory in such examples. This too is not very surprising. As Chris Lucas points out to us. weak negation is an older pattern, closer to Classical Arabic. It is not surprising that the older pattern should survive in semi-formulaic oaths invoking God.

3. Negative present tense copulas

An important feature of Arabic are so-called nominal sentences consisting of a subject and an AP, PP or NP predicate.

(16) l-ktaab ẓdiid/ foog ṭ- ṭaawla/ riwaaya
the-book new.3.M on the table novel
'The book is new/on the table/a novel.'

Nominal sentences are normally negated by *miš* or by what looks like the combination of *ma-* and *-š* and a pronoun.

[3] Such examples are highlighted in Lucas (2007).

(17) l-ktaab **miš**/ **ma**-huu-**š** ẓdiid/ foog ṭ-ṭaawla/ riwaaya
the-book NEG NEG-3.M.SG-NEG new.3.M.SG on the table novel
'The book is not new/on the table/a novel.'

(We will see in the next section that certain nominal sentences allow a different form of negation.) We assume that *miš* is an invariant negative present tense copula and that the combination of *ma-* and *-š* and a pronoun is an inflected negative present tense copula. Evidence for the latter view come from the fact that the combination of *ma-* and *-š* and a pronoun appears in the same position as *miš* and from the fact that an unmarked pronoun cannot appear in this position. (18) illustrates:

(18) *l-ktaab huu ẓdiid / foog ṭ-ṭaawla/ riwaaya.
the-book 3.M.SG new.3.M.SG on the table novel

An important fact about these two elements is that they occur in sentences with no n-word or NPI and also in sentences with one, such as (19).

(19) ʔaħmad miš/ **ma**-huu-**š** zay ħad/ ħatta ħad.
Ahmad NEG NEG-3.M.SG-NEG like nobody anybody
'Ahmad is like nobody.'/'Ahmad isn't like anybody.'

This suggests that these are elements which can be either strongly or weakly negative. It provides evidence against the position advanced in Aoun, Benmamoun and Choueri 2010: 5) that *miš* is just a combination of the proclitic *ma-* and the enclitic *-š*. If it was, we would expect it to have a different form here since, as we have seen, *-š* does not appear when there is an n-word or NPI in the sentence. It also suggests that the inflected negative present tense copula does not really contain the proclitic and the enclitic.

4. Other negative marked words

There are two other positions in which negative marking may appear. Firstly, it can appear on the expletive *fiih* 'there', which appears in sentences with a following indefinite NP understood as a subject and a locative complement. Thus, the negative counterpart of (20a) is (20b).

(20) a. fiih ṭalaba fi-l-madrsa
there students in-the-school
'There are students in the school.'
b. **ma**-fii-**š** ṭalaba fi-l-madrsa
NEG-there-NEG students in-the-school
'There are no students in the school.'

Again we have weak negative marking when an n-word or NPI is present:

(21) **ma**-fiih ħad/ ħatta waħad fi-l-ħuuš.
NEG-there nobody anybody in-the-house
'There isn't anybody in the house.'

A past tense counterpart of (20a) contains a positive copula, as (22a) shows. Such an example can only be negated with negative marking on the copula, as in (22b). It is not possible to have negative marking on *fiih*, as in (22c).

(22) a. kaan fiih ṭalaba fi-l-madrsa
be.PAST.3.M.SG there students in-the-school
'There were students in the school.'
b. **ma**-kaan-**š** fiih ṭalaba fi-l-madrsa
NEG-be.PAST.3.M.SG-NEG there students in-the-school
'There were no students in the school.'
c. *kaan **ma**-fii-**š** ṭalaba fi-l-madrsa
be.PAST.3.M.SG NEG-there-NEG students in-the-school

This provides further evidence that negation must be marked as early as possible.

Secondly, negation may appear on a preposition with an attached pronominal clitic, which we will call a cliticized preposition. Thus, the nominal sentence in (23a), where the predicate is a cliticized preposition, can be negated with a strongly negative cliticized preposition, as in (23b).

(23) a. l-ktub fi-ha
the-books in-3.F.SG
'The books are in it.'
b. l-ktub **ma**-fi-ha-**š**
the-books NEG-in-3.F.SG-NEG
'The books are not in it.'

A past tense counterpart of (23a) contains a positive copula, as (24a) shows. It can only be negated with negative marking on the copula, as in (24b), and not with negative marking on the cliticized preposition, as in (24c).

(24) a. l-ktub kaanu fi-ha
the-books be.PAST.3.PL in-3.F.SG
'The books were in it.'
b. l-ktub **ma**-kaanu-**š** fi-ha
the-books NEG-be.PAST.3.PL-NEG in-3.F.SG
'The books were not in it.'
c. *l-ktub kaanu **ma**-fi-ha-**š**
the-books be.PAST.3.PL NEG.in.3.F.SG-NEG

Again, it seems that negation must be marked as early as possible.

Other sentences in which a verb takes a PP complement behave in the same way. Thus, (25a) has only (25b) and not (25c) as a negative counterpart.

(25) a. tkallamt ʕan-ha
talk.PAST.1.SG about-3.F.SG
'I talked about her.'
b. **ma**-tkallamt-**š** ʕan-ha
NEG-talk.PAST.1SG-NEG about-3.F.SG
'I did not talk about her.'
c. *tkallamt **ma**-ʕan-ha-**š**
talk.PAST.1SG NEG-about-3.F.SG-NEG
'I did not talk about her.'

This is as we might expect.

Another type of example where negation is marked on a cliticized preposition is exemplified by the following:

(26) a. š-šanṭa fi-ha ktub
the bag in-3.F.SG books
'The bag has books in it.'
b. š-šanṭa **ma**-fi-ha-**š** ktub
the bag NEG-in-3.F.SG-NEG books
'The bag does not have books in it.'

Here we have a different type of a verbless sentence, in which a cliticized preposition precedes an indefinite NP which is understood as its subject. Again, negation is marked on the cliticized preposition. Again too we have weak negative marking when an n-word or NPI is present:

(27) š-šanṭa **ma**-fi-ha šay/ hatta ħaža
the-bag NEG-in-3.F.SG nothing anything
'The bag has nothing in it.'/'The bag doesn't have anything in it.'

Again also a past tense counterpart of (26a) contains a positive copula, and it can only be negated with negative marking on the copula, and not with negative marking on the cliticized preposition. The following illustrate:

(28) a. š-šanṭa kaan fi-ha ktub
the bag be.PAST.3.M.SG in-3.F.SG books
'The bag had books in it.'
b. š-šanṭa **ma**-kaan-**š** fi-ha ktub
the bag NEG-be.PAST.3.M.SG-NEG in-3.F.SG books
'The bag did not have books in it.'
c. *š-šanṭa kaan **ma**-fi-ha-**š** ktub
the bag be.PAST.3.M.SG NEG-in-3.F.SG-NEG books
'The bag did not have a book in it.'

As before, negation must be marked as early as possible.

Although negation may be marked on a number of different elements it is never marked on more than one negative element in a clause. Hence, the following are ungrammatical:

(29) a. *__ma__-ħad __ma__-ja
NEG-nobody NEG-come.PAST.3.SG
b. *l-ktub __ma__-kaanu-__š__ __ma__-fi-ha-__š__ fi-ha
the-books NEG-be.PAST.3.PL-NEG NEG.in-3.F.SG-NEG
c. *__ma__-kaan- __š__ __ma__-fii-__š__ ṭalaba fi-l-madrsa
NEG-be.PAST.3.M.SG-NEG NEG-there-NEG students in-the-school

Thus, a negative clause may only contain one negative-marked element.

One further point to note here is that (23a) can also be negated with *miš* but this is not possible with (20a) or (26a). We will discuss this in section 6.

5. An analysis

We will now develop an HPSG analysis of the data that we have presented in the preceding sections. HPSG is a monostratal theory, in which the syntactic structure of a sentence is a single relatively simple constituent structure. Hence, there are no movement processes as in the various forms of transformational grammar, and what are seen as moved constituents in transformational work only ever occupy their superficial position. HPSG is also a constraint-based theory, in which a grammar consists of a set of word and phrase types, and a set of constraints to which they are subject. The constraints are implicational statements, saying that if a linguistic object has some property or properties then it must have some other property or properties. HPSG is also a framework in which the properties of lexical items play a central role. Hence a major part of a satisfactory analysis is appropriate lexical descriptions.

5.1. Negative words

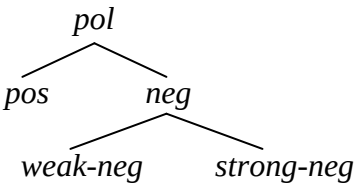
In the Minimalist literature the negative clitics are analysed as the realization of one or two separate syntactic elements (see Aoun, Benmamoun and Choueri 2010: 5.2). This approach is incompatible with HPSG assumptions since it involves movement processes. Moreover, it doesn't seem to have any advantages. It is still necessary to stipulate that one is a proclitic and the other an enclitic, and it is still necessary to stipulate which elements can be marked. We will assume, therefore that the negative clitics are affixes

If the negative clitics are affixes, we have a variety of words that may be either strongly or weakly negative. There seems to be no principle determining which elements may be negative marked. We assume, therefore, that this must be stipulated.[4] We will

[4] Which elements may be negative marked varies from dialect to dialect. Aoun, Benmamoun and Choueri (2010: 100, fn.4) report that predicative adjectives and nominals may be negative marked in Morrocan Arabic. This is not possible in Libyan Arabic.

distinguish between positive, weakly negative, and strongly negative forms with a feature POL(ARITY), which has the following values:

(30)



Most lexical items will be [POL *pos*]. Verbs, cliticized prepositions, and *fiih* will be [POL *pol*], and hence will be able to have any value for POL. *Miš* and the inflected negative present tense copula will be [POL *neg*], and hence will be able to be either [POL *weak-neg*] or [POL *strong-neg*].

We will analyse Libyan negative clitics in the same way as Miller and Sag (1997) analyse French pronominal clitics. That is, we will analyse them as extra affixes attached to words which may already be inflected. (We will also analyse Libyan pronominal clitics in this way.) Following Miller and Sag, we assume that words have an I-FORM feature, whose value is the inflected form of the word (or its basic form if it is not inflected), and a FORM feature, which has the same value as I-FORM when there are no clitics but a more complex value when the word has one or more clitics. The two features are part of the value of a MORPH feature. We also assume, following much HPSG work, that the syntactic and semantic properties of expressions are encoded as the value of a SYNSEM feature. The value of this feature includes the feature LOC(AL) and the value of LOC(AL) includes the feature CAT(EGORY)[5]. The value of this feature includes the features HEAD, which encodes the basic categorical status of the expression, whether it is nominal, verbal, etc., SUBJ, which indicates what kind of subject the expression requires, and COMPS, which indicates what complements it takes.

Assuming this machinery, we can provide lexical descriptions for various negative-marked elements. We begin with verbs. For *mšuu* in (1a) we will have the description in (31a), while *ma-mšuu-š* in (1b) will have that in (31b).

(31) a.

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } \textit{mšuu} \\ \text{I-FORM } \textit{mšuu} \end{bmatrix} \\ \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{verb} \\ \text{POL } \textit{pos} \end{bmatrix} \\ \text{SUBJ} < \text{NP}_{[\textit{third,plur}]} > \\ \text{COMPS} < \text{PP}[\textit{li}] > \end{bmatrix} \end{bmatrix}$$

[5] The value of LOC also includes the feature CONTENT, whose value is the semantic content of the expression. We will refer to this below.

b.

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } ma\text{-}mšuu\text{-}š \\ \text{I-FORM } mšuu \end{bmatrix} \\ \text{SYNSEM LOC|CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} verb \\ \text{POL } strong\text{-}neg \end{bmatrix} \\ \text{SUBJ} < \text{NP}_{[third,plur]} > \\ \text{COMPS} < \text{PP}[li] > \end{bmatrix} \end{bmatrix}$$

They differ in their POL values and their FORM values. In (31a), FORM and I-FORM have the same value, but in (31b) they differ. We will not consider how to ensure that *ma-* is a proclitic and *-š* an enclitic, but there is no obvious difficulty here. Weak negative verbs also pose no problems. For *ma-šuft* in (5) we will have the following description:

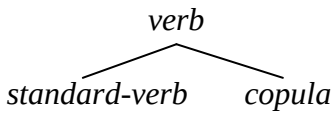
(32)

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } ma\text{-}šuft \\ \text{I-FORM } šuft \end{bmatrix} \\ \text{SYNSEM | LOC | CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} verb \\ \text{POL } weak\text{-}neg \end{bmatrix} \\ \text{SUBJ} < \text{NP}_{[first,,sing]} > \\ \text{COMPS} < \text{NP} > \end{bmatrix} \end{bmatrix}$$

Here the value of POL is *weak-neg* and hence the value of FORM includes *ma-* but not *–š*.

Next we can consider the negative present tense copulas that we looked at in section 3. Here we will assume a type *copula*, which is a subtype of *verb*, the other subtype being *standard-verb*, as follows:

(33)



We will also assume that all forms of the copula select a subject and a complement which is [PRED +], this being either an AP, a PP, or an NP. We will also assume that the subject functions as subject of the complement. Given these assumptions, we will have lexical descriptions of the following form for what we might regard as the basic use of the copula:

(34)

$$\begin{bmatrix} \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \; \textit{copula} \\ \text{SUBJ} < [1] > \\ \text{COMPS} < \begin{bmatrix} \text{HEAD}[\text{PRED} +] \\ \text{SUBJ} < [1] > \\ \text{COMPS} <> \end{bmatrix} > \end{bmatrix} \end{bmatrix}$$

The form of the copula in (2a) will have a description like this with *pos* as value of NEG and the same value for I-FORM and FORM, while the form in (2b) will have with *strong-neg* as value of NEG and different values for I-FORM and FORM. They will differ in the same way as (31a) and (31b). Turning to *miš*, we can propose the following description:

(35)

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM} \; \textit{miš} \\ \text{I-FORM} \; \textit{miš} \end{bmatrix} \\ \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{verb} \\ \text{POL} \; \textit{neg} \\ \text{TENSE} \; \textit{pres} \end{bmatrix} \\ \text{SUBJ} < [1] > \\ \text{COMPS} < \begin{bmatrix} \text{HEAD}[\text{PRED} +] \\ \text{SUBJ} < [1] > \\ \text{COMPS} <> \end{bmatrix} > \end{bmatrix} \end{bmatrix}$$

Here the value of POL is *neg*, allowing *miš* to be either strongly or weakly negative. Notice also that I-FORM and FORM have the same value, reflecting the fact that *miš* is inherently negative and not negative by virtue of the addition of negative clitics. The inflected negative present tense copula will involve descriptions of the form in (35) but with specific values for SUBJ. These forms will also have the same value for I-FORM and FORM. What look like negative clitics here are actually part of the inflected form of these forms.

Next we can look at the expletive *fiih*. Following Pollard and Sag (1994: 3.6) we assume that expletives are distinguished by a special nonreferential index. If we call this index *fiih*, we can propose the following descriptions for *fiih* and *ma-fiih-š* (where INDEX is part of the value of CONTENT, which is part of the value of LOC):

(36) a.

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } \textit{fiih} \\ \text{I-FORM } \textit{fiih} \end{bmatrix} \\ \text{SYNSEM} \mid \text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{noun} \\ \text{POL } \textit{pos} \end{bmatrix} \\ \text{SUBJ } \langle\rangle \\ \text{COMPS } \langle\rangle \end{bmatrix} \\ \text{CONTENT[INDEX } \textit{fiih}] \end{bmatrix} \end{bmatrix}$$

b.

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } \textit{ma-fii-š} \\ \text{I-FORM } \textit{fiih} \end{bmatrix} \\ \text{SYNSEM} \mid \text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{noun} \\ \text{POL } \textit{strong-neg} \end{bmatrix} \\ \text{SUBJ } \langle\rangle \\ \text{COMPS } \langle\rangle \end{bmatrix} \\ \text{CONTENT[INDEX } \textit{fiih}] \end{bmatrix} \end{bmatrix}$$

These differ in exactly the same way as (31a) and (31b). The weak negative form *ma-fiih* in (21) will have a description like (33b) but with *weak-neg* as the value of POL and *ma-fiih* as the value of FORM.

We turn now to cliticized prepositions. Following Miller and Sag (1997), we assume that pronominal clitics are extra affixes reflecting special affixal *synsem* objects which have no counterparts in constituent structure. For Miller and Sag these only appear in the value of the ARG-ST feature, which encodes the basic combinatorial potential of a word and do not appear in SUBJ or COMPS lists. However, there is a reason for taking a rather different view in the case of Libyan and other varieties of Arabic. In Libyan and other varieties a clitic can realize a prepositional object, as in (23), a verbal object, as in (37), and a possessor, as in (38).

(37) šuft-ha
see.PAST.1.SG-3.F.SG
'I saw her'

(38) ktaab-ha
book-3.F.SG
'her book'

If affixal *synsem* objects appear in COMPS lists just like ordinary canonical *synsem* objects and if possessors are initial members of COMPS lists, there is a simple generalization about clitics highlighted by Borsley (1995). We can say that they can realize the first element in a COMPS list. There is no simple generalization if affixal *synsem* objects are confined to ARG-ST lists. Verbal objects will be second in ARG-ST lists while possessors will be first. Prepositional objects will be either first or second depending on whether the preposition is predicative.

If affixal *synsem* objects appear in COMPS lists, *fi-ha* in (23a) will have the description in (39a) and *ma-fi-ha-š* in (23b) will have that in (39b).

(39) a.

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } \textit{fi - ha} \\ \text{I - FORM } \textit{fi} \end{bmatrix} \\ \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{prep} \\ \text{POL } \textit{pos} \end{bmatrix} \\ \text{SUBJ} \langle\rangle \\ \text{COMPS} \langle \text{NP}[\textit{aff,3sgf}] \rangle \end{bmatrix} \end{bmatrix}$$

b.

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } \textit{ma - fi - ha - š} \\ \text{I - FORM } \textit{fi} \end{bmatrix} \\ \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{prep} \\ \text{POL } \textit{strong - neg} \end{bmatrix} \\ \text{SUBJ} \langle\rangle \\ \text{COMPS} \langle \text{NP}[\textit{aff,3sgf}] \rangle \end{bmatrix} \end{bmatrix}$$

Like the earlier pairs, these differ in their POL values and their FORM values. However, the pronominal clitic means that both have different values for FORM and I-FORM. We will not consider what ensures that the negative enclitic *-š* follows the pronominal clitic, but there is no reason to think that this is a problem. It is worth noting that we have the same order when a verb has both a pronominal clitic and *-š*. The following illustrates:

(40) ma-šuft-ha-š.
NEG-see.PAST.1.SG-3.F.SG-NEG
'I did not see her.'

The weak negative form *ma-fi-ha* in (27) will have a description like (39b) but with *weak-neg* as the value of POL and *ma-fi-ha* as the value of FORM.

Finally, we should consider *ħad* and *ma-ħad*. The former will have the description in (41a) while the latter has the description in (41b).

(41) a.

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } \textit{had} \\ \text{I-FORM } \textit{had} \end{bmatrix} \\ \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{noun} \\ \text{POL } \textit{pos} \end{bmatrix} \\ \text{SUBJ} \langle\rangle \\ \text{COMPS} \langle\rangle \end{bmatrix} \end{bmatrix}$$

b.

$$\begin{bmatrix} \text{MORPH} \begin{bmatrix} \text{FORM } \textit{ma-had} \\ \text{I-FORM } \textit{had} \end{bmatrix} \\ \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{noun} \\ \text{POL } \textit{weak-neg} \end{bmatrix} \\ \text{SUBJ} \langle\rangle \\ \text{COMPS} \langle\rangle \end{bmatrix} \end{bmatrix}$$

Like the earlier pairs these differ in their POL and FORM values.

5.2. Some structures

In this section, we will provide some structures. Before we do so, however, we need to say something about the distribution of the POL feature. If we assume the Generalized Head Feature Principle (GHFP) of Ginzburg and Sag (2000), which requires an expression and its head daughter to have the same SYNSEM value by default, both VP and S will have the same value for POL as V if no constraint requires anything different. However, we will assume that the GHFP is overridden by the following constraint:

(42) *clause* → [POL *pos*]

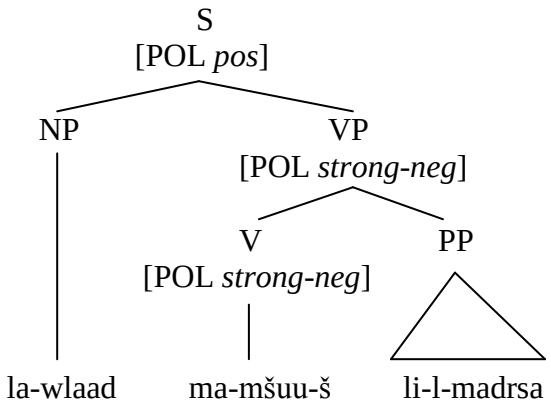
This will require all clauses to be [POL *pos*] even negative clauses with a [POL *neg*] head. This is necessary to allow an example like (43), where a negative clause contains another negative clause.

(43) **ma**-nḍun-**š** [ʔinna la-wlaad **ma**-mšuu-**š** li-l-madrsa]
NEG-think-PRES-1.SG-NEG that the-boys NEG-go.PAST.3.PL-NEG to-the-school
'I do not think that the boys didn't go to the school.'

If negative clauses were [POL *neg*] the main clause here would have two [POL *neg*] constituents. We noted earlier that it is impossible to have more than one negative element in a clause. We will formalize this later as a constraint that rules out two [POL *neg*] elements in a clause. Given such a constraint, negative clauses must not be [POL *neg*].

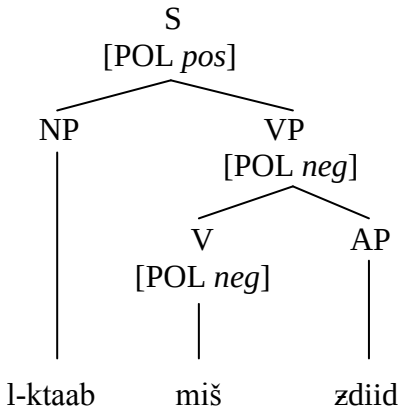
We can now provide some structures. For HPSG, all aspects of linguistic expressions including their internal structure are analyzed in terms of features. However, it is convenient to use the traditional tree format to represent constituent structure. We will use VP and S as abbreviations for [HEAD *verb*, SUBJ <[]>, COMPS <>] and [HEAD *verb*, SUBJ <>, COMPS <>] respectively. First we consider (1b), where negation is marked on the verb. The lexical description in (31b) will interact with standard constraints on head-complement and head-subject phrases to give the following structure:

(44)



Next we can consider the negative present tense copulas. Given the lexical description in (35), we will have the following structure for one version of (17):

(45)



Next we can look at some examples where negation is marked on something other than a verb. These are examples where there is no overt verb. We assume that they

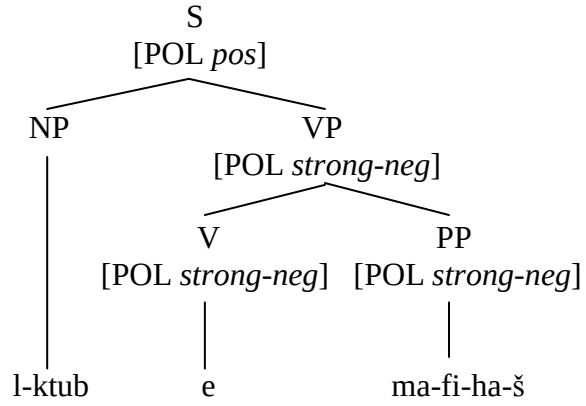
contain a phonologically empty form of the copula. This accounts for the fact that they contain the same constituents as copula sentences except for the copula.[6] We assume this has the following description:

(46)

$$\begin{bmatrix} \text{SYNSEM} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{copula} \\ \text{TENSE } \textit{pres} \\ \text{POL}\,[2] \end{bmatrix} \\ \text{SUBJ} < [1] > \\ \text{COMPS} < \begin{bmatrix} \text{HEAD} \begin{bmatrix} \text{PRED} + \\ \text{POL}\,[2] \end{bmatrix} \\ \text{SUBJ} < [1] > \\ \text{COMPS} <> \end{bmatrix} > \end{bmatrix} \end{bmatrix}$$

This is essentially (34) with the additional information that this form is present tense and that it has the same value for POL as its complement. Given this description, (23b) will have the structure in (47).

(47)



We assume that (20b) and related examples with an overt copula contain no subject but three complements: *fiih*, an indefinite NP interpreted as a subject, and a locative PP. This means that we need a lexical description of the following form (where we omit the features SYNSEM, LOC and CAT and represent *fiih* as $\text{NP}_{\textit{fiih}}$):

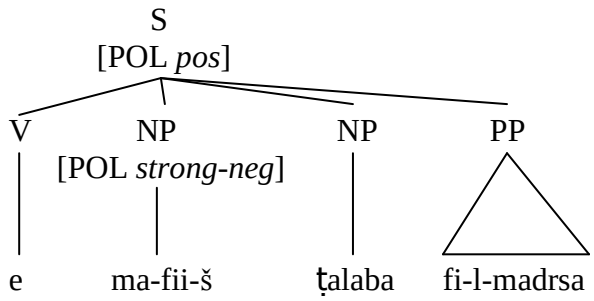
[6] There is at least one notable difference between nominal sentences and sentences with a form of the copula in Standard Arabic. Unlike the various dialects Standard Arabic has morphological case. A nominal or adjectival predicate in a nominal sentence has nominative case whereas a nominal or adjectival complement of a form of the copula is accusative. This is a complication for an empty copula analysis of Standard Arabic nominal sentences, but not, we think, a major problem.

(48)

$$\begin{bmatrix} \text{HEAD} & \textit{copula} \\ \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle \text{NP}_{\textit{fiih}}, [1]\text{NP}[\text{DEF -}], \text{PP}[\textit{loc}, \text{SUBJ} \langle [1] \rangle] \rangle \end{bmatrix}$$

This will give the following structure for (20b):

(49)



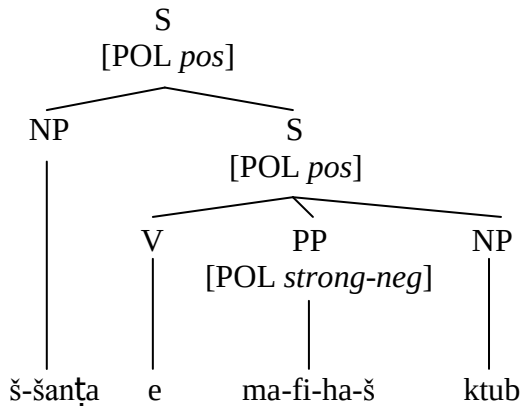
Finally, we assume that (26b) and related examples with an overt copula contain no subject but two complements: a locative PP, and an indefinite NP interpreted as its subject. Here, then, we will have lexical descriptions of the following form:

(50)

$$\begin{bmatrix} \text{HEAD} & \textit{copula} \\ \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle \text{PP}[\textit{loc}, \text{SUBJ} \langle [1] \rangle], [1]\text{NP}[\text{DEF -}] \rangle \end{bmatrix}$$

This will give the structure in (51) for (26b), where we assume that *š-šanṭa* is a topic.

(51)



5.3. Weak negative marking

We must now consider weak negative marking. We have seen that it appears when there is an n-word or NPI in the same clause as the negative marking or when the clause expresses an oath. It is not hard to capture this fact.

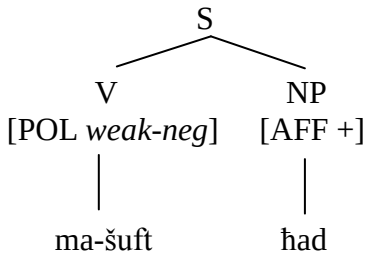
Assuming the GHFP and the lexical description in (45) for the empty copula. all negative sentences will have a daughter which is [POL *neg*]. To capture the facts we need to ensure that negative clauses have a daughter which is [POL *weak-neg*] if and only if they contain an n-word or an NPI or express an oath. To accommodate the first possibility, we need to ensure that negative clauses containing an n-word or an NPI also have some distinctive marking on a daughter. We will assume a feature AFF(ECTIVE) here, subject the following constraints:

(52)
$$\begin{bmatrix} \textit{phrase} \\ \text{DTRS} < \ldots [\text{AFF}+] \ldots > \end{bmatrix} \rightarrow / \, [\text{AFF} +]$$

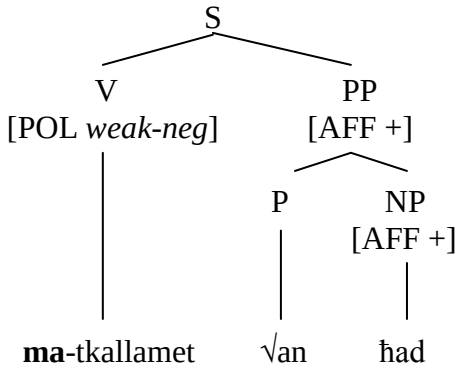
(53) *clause* $\rightarrow$ [AFF –]

The first of these says that by default a head with an [AFF +] daughter is itself [AFF +]. The second says that a clause is [AFF –] and may override the first. These constraints ensure that a constituent that contains an n-word or an NPI is marked [AFF +] unless the n-word or an NPI is inside a subordinate clause. We will have the structure in (54) for one version of (5) and the slightly more complex structure in (55) for one version of (10a).

(54)



(55)



We will assume that oaths have a distinctive value for the CONTENT feature of type *oath*. Given this assumption and the constraints in (52) and (53) we can account for the main cases of weak negation with the following constraint:

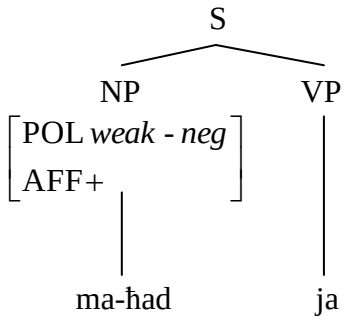
(56)
$$\begin{bmatrix} \textit{neg - clause} \\ \text{DTRS} < \ldots [\text{POL } \textit{weak - neg}] \ldots > \end{bmatrix} \leftrightarrow ([\text{DTRS} < \ldots [\text{AFF} +] \ldots >] \vee [\text{CONT } \textit{oath}])$$

This says that a negative clause has a [POL *weak-neg*] daughter if and only if it has an [AFF +] daughter or expresses an oath.

One point to note about this constraint is that it does not predict weak negative marking in (12). The main clause is negative but does not have an [AFF +] daughter and the subordinate clause has an [AFF +] daughter but is not negative.

Another point to note about (56) is that it does not require the daughter which is [POL *weak-neg*] to be distinct from the daughter which is [AFF +]. Hence, we allow the following structure for (11):

(57)



A further point to note is that there is nothing in (56) to ensure that the n-word or an NPI does not precede the associated weakly negative marked element. We need a separate constraint for this. If we assume that word order is defined in terms of order domains which are the value of the DOM(AIN) feature, we can propose the following:

(58) DOM $\neg$<…[AFF +]…[POL *weak-neg*]…>

This simply says that the value of DOM must not include an [AFF +] element before a [POL *weak-neg*] element.

The constraint in (56) deals successfully with a range of examples. However, there is one case where it gets the facts wrong. This is in elliptical negative answers to questions such as that in (59):

(59) A: min šuft?
who see.PAST.2.M.SG
'Who did you see?'
B: ħad / ***ma**-ħad
nobody NEG-nobody.
'Nobody'

The answer here must be *ħad* and cannot be *ma-ħad*. Following Ginzburg and Sag (2000), we assume that such answers are clauses with a single phrasal daughter (see also Arnold and Borsley 2008). On this view the grammatical answer in (59) has the analysis in (60).

(60)

Here, then, we have a negative clause without a negative-marked daughter. It seems, then, that the constraint in (56) must be revised so that it doesn't affect fragment clauses. We will reformulate as a constraint on negative full clauses as follows:

(61)

$$\begin{bmatrix} \textit{neg - full - clause} \\ \text{DTRS} < \ldots [\text{POL } \textit{weak - neg}] \ldots > \end{bmatrix} \leftrightarrow ([\text{DTRS} < \ldots [\text{AFF} +] \ldots >] \vee [\text{CONT } \textit{oath}])$$

5.4. Two more constraints

We need two further constraints. Firstly, we need one to ensure that negation is realized as early as possible, in other words to ensure that it is not marked on some word if there is an earlier word on which it could be marked. To do this we need a way to identify elements that could be negative marked even when they are not and hence are [POL *pos*]. We will use the feature NEGATABLE for this purpose. This will allow us to propose the following constraint:

(62) $[\text{POL } \textit{neg}] \; < \; \begin{bmatrix} \text{NEGATABLE} + \\ \text{POL } \textit{pos} \end{bmatrix}$

This will rule out (10), (22c), (24c), (25c), and (28c), all of which have a word which is [NEGATABLE +] and [POL *pos*] before a [POL *neg*] word. (10) is also ruled out by (58) because it has an [AFF +] element before a [POL *weak-neg*] element.

Finally, we need a constraint to ensure that only one negative element may appear in a clause. It is quite easy to provide such a constraint. The distribution of the POL feature is such that if there are two negative elements in the same clause there will be sister constituents which are [POL *neg*]. Consider the examples in (29), repeated here as (63).

(63) a. ***ma**-ħad **ma**-ja
NEG-nobody NEG.come.PAST.3.SG

b. *l-ktub **ma**-kaanu-**š** **ma**-fi-ha-**š** fi-ha
the-books NEG-be.PAST.3.PL-NEG NEG.in-3.F.SG-NEG
c. ***ma**-kaan- **š** **ma**-fii-**š** ṭalaba fi-l-madrsa
NEG-be.PAST.3.M.SG-NEG NEG-there-NEG students in-the-school

In (63a), the subject NP and its VP sister will be both be [POL *weak-neg*]. In (63b), the verb and its PP complement will be [POL *strong-neg*]. Finally, in (63c), the verb and its expletive complement will be [POL *strong-neg*]. We can rule out all such cases with the following linear precedence constraint:

(64) [POL *neg*] < [POL *neg*]

This says that if there are two negative marked elements which are sisters each must precede the other. Since this is impossible, there cannot be two negative marked elements which are sisters.

With the constraints in (62) and (64) we now have an account of all the facts that we set out in sections 2-4.

6. A further restriction

There seems to be a further important restriction involving *miš* and the inflected negative present tense copula. One might expect that they would be able to appear wherever the negative past tense copula can appear. However, it seems that this is not the case.

We saw earlier that (23a) can be negated as (23b). The examples are repeated here in (65).

(65) a. l-ktub fi-ha
the-book in-3.F.SG
'The books are in it.'
b. l-ktub **ma**-fi-ha-**š**
the-books NEG-in-3.F.SG-NEG
'The books are not in it.'

An alternative negative counterpart of (23a)/(65a) is the following with a negative present tense copula:

(66) l-ktub **miš/ ma**-hum-**š** fi-ha
the-books NEG NEG-3.PL-NEG in-3.F.SG
'The books are not in it.'

Here, then, we have two possible forms of negation. The situation is different elsewhere.

We saw earlier that (20a) can be negated as (20b). The examples are repeated here in (67).

(67) a. fiih ṭalaba fi-l-madrsa
there students in-the-school
'There are students in the school.'
b. **ma**-fii-**š** ṭalaba fi-l-madrsa
NEG-there-NEG students in-the-school
'There are no students in the school.'

Here we do not have (68) as an alternative to (20b)/(67b)

(68) ***miš**/**ma**-hum-**š** fiih ṭalaba fi-l-madrsa
NEG NEG-3.SG-NEG there students in-the-school
'There are no students in the school.'

Here, then, there is just one negative counterpart.

We also saw earlier that (26a) can be negated as in (26b). Again, we repeat the examples.

(69) a. š-šanṭa fi-ha ktub
the bag in-3.F.SG books
'The bag has books in it.'
b. š-šanṭa **ma**-fi-ha-**š** ktub
the bag NEG-in-3.F.SG-NEG books
'The bag does not have books in it.'

Here we do not have (70) as an alternative to (26b)/(69b).

(70) *š-šanṭa **miš** / **ma**-huum-**š** fi-ha ktub.
the bag NEG NEG-3.PL-NEG in-3.F.SG books
'The bag does not have books in it.'

Again, then, there is just one type of negative sentence.

It seems, then, that some verbless sentences but not others can be negated with *miš* and the inflected negative present tense copula. What is the crucial difference between between (66) on the one hand and (68) and (70) on the other? Given the analyses that we outlined above, there is an obvious difference – (66) involves a single complement whereas (68) involves three complements and (70) two. Hence, we just need to ensure that *miš* and the inflected negative present tense copula may only have a single complement. The following constraint does this:

(71)

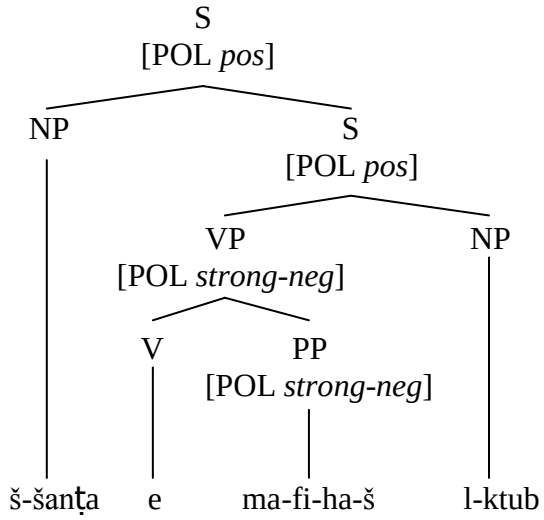
$$\left[\text{HEAD}\left[\begin{array}{l}\textit{copula}\\ \text{POL}\ \textit{neg}\\ \text{TENSE}\ \textit{pres}\end{array}\right]\right] \rightarrow [\text{COMPS} <[]>]$$

There is some further data that we need to consider here. While (70) is ungrammatical, the following, in which the final NP is definite is grammatical:

(72) s-šanṭa **miš** / **ma**-huum-**š** fi-ha l-ktub
the bag NEG NEG-3.PL-NEG in-3.F.SG the-books
'The books are not in the bag.'

This might seem problematic. Crucially, however, this example has an intonation break before the final definite NP. We take this as evidence that such examples have a rather different structure. We assume that the final NP is not an extra complement but a subject in a noncanonical position. In other words, we assume that (72) has the following structure:

(73)



On this analysis there is just a single complement in (72) and it is only to be expected that it is grammatical.

7. Concluding Remarks

We have now outlined a detailed HPSG analysis of the syntax of negation in Libyan Arabic. As far as we are aware, it is the first detailed analysis of this domain. Central to the analysis are certain types of lexical description and small number of constraints. We have made crucial use of three features. Most important is the POL feature, which identifies strong and weak negative words and certain constituents that contain them. Then there is the AFF feature, which identifies n-words and NPIs and certain constituents that contain them. Finally there is the NEGATABLE feature, which identifies words which can be negative even when they are not negative. We have proposed constraints to ensure the correct distribution of the POL and AFF, a constraint to ensure that weak negation appears under the right conditions, a constraint to ensure that a weak negative word is not preceded by the associated n-word or NPI, a constraint to ensure that negation is marked as early as possible, and a constraint to ensure that it is only marked once in a

clause. We have also proposed a constraint to restrict the complements of *miš* and the inflected negative present tense copula. It may be that plausible analyses can be developed in other frameworks. It may also be that a better analysis can be developed within HPSG. However, it seems to us that the analysis we have proposed has significant virtues and that it makes a real contribution to the understanding of Libyan Arabic.

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