THE X-BAR STATUS OF NEG

Jumah Albayaty

Department of Linguistics
Simon Fraser University

1.0 THE PHENOMENON

In Standard Arabic negative sentences, the negative morpheme carries tense and manifests the following alternation depending on the type of tense:

(1) a. r-rijaal-u qaam-uu
the-men-nom stood.up-Agr
"The men stood up."

b. r-rijaal-u **lam** ya-quum-uu
the-men-nom not-past imp-stand.up-Agr
"The men didn't stand up."

c. r-rijaal-u sa-ya-quum-uuna
the-men-nom fut-imp-stand.up-Agr
"The men will stand up."

d. r-rijaal-u **lan** ya-quum-uu
the-men-nom not-fut imp-stand.up-Agr
"The men will not stand up."

e. r-rijaal-u ya-quum-uuna
the-men-nom imp-stand.up-Agr
"The men are standing up."

f. r-rijaal-u **laa** ya-quum-uuna
the-men-nom not-present imp-stand.up-Agr
"The men are not standing up."

The agreement morpheme is affixed on the verb in these sentences. Note that in the negative versions, the Tense element and the negative form a complex which is morphophonologically independent of the complex, which consists of the verb and the Agreement element. In the affirmative versions, however, both the Tense and the Agreement elements are hosted by the verb.

2.0 THE CATEGORIAL STATUS OF NEG

Suppose that the sentential negative, *lan*, *lam*, and *laa*, is a head, i.e. an X-zero category, and not a specifier (Rizzi 1990) or an adjunct. Such a hypothesis provides a straightforward explanation for the fact that the negative can host a tense affix in (1). Since only heads are eligible hosts, treating Neg as a head allows us to capture the fact that it can lexically support tense. The property of hosting affixes characterizes both lexical heads (Ns, Ps, Vs, Adjs) and functional heads (Cs and Qs).[1] Adding Neg to the list of functional heads is a step towards forming a natural class with respect to the ability of acting as a host.

3.0 THE BLOCKING EFFECT OF NEG

Suppose, then, that the sentences in (1) all instantiate a structure in which Neg heads a NegP projection which is C-selected by Tense. The prediction that should follow from this hypothesis is the familiar phenomenon that the verb cannot move to T across the negative head:

(2) *[ya-quum-uu] **lan** r-rijaal-u t
imp-stand.up-Agr not-fut the-men-nom

This account is valid only if *lan* is assumed to be a head category which also implies that T is a head category. Consequently, Neg-movement is a process of head-movement. Neg movement to Tense provides a host for the affixal Tense, thus obviating the need for V-movement to Tense. Head movement is subject to the Head Movement Constraint (HMC) of Travis (1984:131):

(3) An X may only move into the Y which properly governs it.

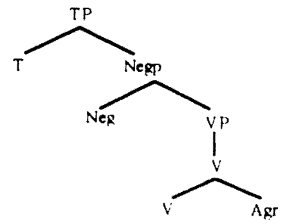
The main effect of the HMC is to block movement of a head category across another (m-commanding) category, thus guaranteeing that an affixal head attaches to the closest affixational host. Given the constraint on head movement expressed by the HMC or, more generally, by Relativized Minimality in the sense of Rizzi (1990) which prevents categories of the same type from moving across each other, the option of V-movement directly to Tense across Neg is not open. This option gives rise to a violation of Relativized minimality as it applies to head movement since the head category *ya-quum-uu* in (2) has moved across another (m-commanding) head category *lan*.

The picture that emerges from the blocking effect of Neg argues that the negative is a projected head. This is a standard claim based on X-bar theoretic assumptions that only a head category can block the movement of another head category.

4.0 THE RELATIVE ORDERING OF THE PROJECTIONS

The natural question that arises is whether T c-selects NegP, or Neg c-selects TP. Translating the two possibilities for c-selection into structural terms, we have (4) and (5):

(4)



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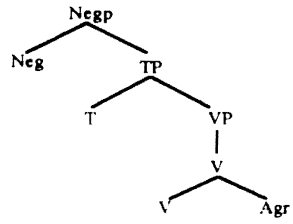
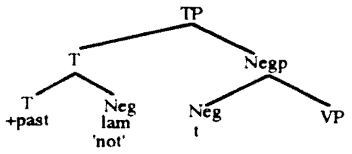


(6)



Assuming a clause structure as in (4) for Arabic negative sentences, the two separate complexes are derived in terms of Neg movement to T and base-generating Agr on the V node. This derivational step is represented in (6), where Neg is adjoined to T. The movement of Neg to T is motivated by the necessity to satisfy the requirements of the affixal T for lexical support. The availability of Neg to serve as a support for T explains why Arabic does not resort to a language-particular strategy similar to the process of "do-support" in English negative clauses.[2] The difference between the two constructions in the two languages relates to the nature of the Neg category in combination with an independent principle of UG. The principle in question is Minimality, its subpart which prevents the Neg category in English from moving to Tense on the assumption that Neg is not a head category in English. Given that the Arabic Tense can be supported in terms of a legitimate application of Move-alpha, the absence of a last resort strategy such as the insertion of an expletive verb is a small wonder. The insertion of a supportive verb in English should not come as a surprise either since the construction cannot be saved by a lawful application of Move-alpha.

That Agr(eement) is on the right side of/inside Tense in the derived verbal complex is seen from affirmative tensed clauses (7). Note that the reverse order of Tense and Agr produces ungrammaticality in (8):

(7) sa-ya-ʔkulu ar-rajulu
will-imp-eat the-man
'The man will eat'

(8) *ya-sa-ʔkulu ar-rajulu

In such clauses—that is, in the absence of a negative element—the [V+Agr] complex moves obligatorily to T, thus accounting for the fact that in sentences such as (7) the Tense and the Agreement elements appear attached to the verbal complex. In the presence of a negative element, given the HMC—which bans movement of a head across another head—movement of the [V+Agr] complex to T would violate the HMC. Since this movement would apply across another head, (2) is ungrammatical. Notice also that movement of the verbal complex through Neg, which is allowed by the HMC, would be unmotivated. Neither the verb nor the negative is affixal.

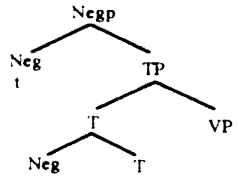
Structure (4) makes the prediction that the inflected negative can further move up to C in direct yes-no questions if C is filled by an affix. This prediction is borne out:

(9) ʔa-lam ta-ʔkul
Q-not-past 2imp-eat
'Didn't you eat'

(9) exemplifies successive cyclic movement of Neg to T and then to C to support the bound question morpheme *ʔa*. Structure (4), then, accounts for the the fact that T and Agr inflections appear on different head complexes, on the negative head and the verbal head respectively.

On the assumption that NegP dominates TP as in structure (5), V-movement to T should be expected since it would not violate the HMC. The prediction that follows from this hypothesis is that under all circumstances the Tense and Agreement elements together should appear affixed on the same head, contrary to fact. The remaining derivational alternative is to assume that the affixation involves Neg lowering to T:

(10)



While this derivation correctly attaches Tense and Agreement on separate complexes, it falls short of providing a theoretically coherent and empirically viable structure of the clause in Arabic. In addition to the oddity of moving a root head, i.e. Neg to an affixal head, it results in a trace m-commanding its antecedent. Also, the fact Neg can raise to C, as illustrated in (9) argues against a lowering analysis.

The conclusion that emerges from this discussion is that the property of Neg as a host for Tense in Standard Arabic receives a natural explanation only if Neg is attributed an autonomous status as a head situated between T and V as in (4). As such,Neg aborts V-movement to Tense and and carries the Tense inflection itself.

5.0 VERB MOVEMENT IN THE CONTEXT OF NEGATION

In Iraqi Arabic sentential negation is expressed by the bound prefix *ma*:

(11) a. ma ʔakal ʔay shi
neg read-I many book
'I did not read many book'

b. ma qire-tʃidat kutub
neg eat anything
'He didn't eat anything'

(12) a. ma kint hna
neg have time
I don't have time'

b. ma ʃindi waqt
neg was here
'I wasn't here'

Based on the morphological evidence from Standard Arabic where the negative is an eligible host (thus a movable category) for Tense, let us assume, as suggested above, that the negative prefix *ma*

in Iraqi Arabic is also an independent syntactic category which heads its own maximal projection NegP. NegP is situated between TP and VP as in structure (4).

The syntactic relevance of the prefix *ma* is established by its licensing the negative polarity item *ʔay shi* in (11a) above and by its licensing the quantifier *ʕidat kutub* in (11b). Note that (11b) is ambiguous: The quantifier can be interpreted within the scope of *ma* or outside its scope.

Notice that the fact that the Tense element is morphologically null makes it impossible to determine its relative ordering in relation to Neg in the clause structure of Iraqi Arabic. Nonetheless, let us assume the following to be true for both Standard Arabic and Iraqi Arabic:[3]

(13) T c-selects NegP

as in (4) above. Given that T immediately dominates NegP, the HMC guarantees that the Tense inflection would always appear adjacent to Neg in the derived complex. The fact that the verbal root, the negative prefix and tense form a morphophonological unit at S-structure in the sentences in (11) can then be derived by successive cyclic movement of the verb to Neg and to T. Given the affixal nature of Neg in Iraqi Arabic, we correctly predict that it will not block V-movement to T. The verb does not move to T across Neg, but adjoins to Neg first. The verb in T, by raising to Neg, can antecedent-govern its trace through Neg. Consequently no HMC violation results. Notice that V-movement directly to T, that is across Neg, gives rise to a violation of the HMC, hence (14) is ungrammatical:

(14) *ʔakal ma.
ate not

The basic difference between Standard Arabic and Iraqi Arabic in this respect reduces to a difference in the morphological features of the negative head projection. More specifically, the negative head in the former is a non-affixal head, whereas in the latter it is affixal. This feature can be formulated in terms of the following parameter:

(15) The Neg parameter: (i) Neg is [+free]
(ii) Neg is [–free]

This minimal parametric difference accounts for the derivation of the two verbal complexes in the two languages. Taking value (i) of the Neg parameter first, the [+free] property of the Negative morphemes implies that the [V+Agr] complex cannot move to Neg since this movement would be unmotivated, hence excluded. Taking value (ii) of the Neg parameter, the [–free] property implies that the [V+Agr] complex can, and, in fact, must move to Neg, and further up to T.

In terms of this analysis, the distinction between the two languages with respect to V-movement in the context of negation is argued to follow from a parametric difference in the morphological features of Neg. The HMC is thus sensitive to the morphological status of the categories it applies to. Below we discuss evidence from infinitival clauses in Standard Arabic (SA) and Iraqi Arabic (IA) which lends significant support to the analysis suggested above.

6.0 INFINITIVAL CLAUSES IN STANDARD ARABIC AND IRAQI ARABIC

While Standard Arabic allows Neg-movement to T in tensed clauses as discussed above, it does not allow it in the context of the infinitive:

(16) a. qarrra-tu ʔan lan ʔusaafira
decided-I to not go
'I decided to not go'

b. *qarrra-tu lan ʔan ʔusaafira
decided-I not to go

V-movement to Neg is equally blocked in both contexts. The following shows the impossibility of V-movement to Neg in an infinitive context:

(17) *qarrra-tu ʔan ʔusaafira lan
decided-I to go not

Similarly, the same movement is aborted in the affirmative infinitival context:

(18) *qarrra-tu ʔusaafira ʔan
decided-I go to

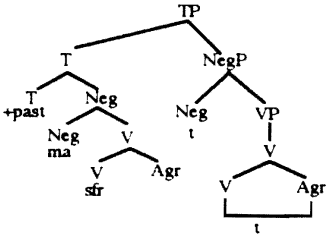
In this respect, Iraqi Arabic contrasts with Standard Arabic. V-movement to Neg is available in all contexts in the latter as is evident from the affirmative tensed clauses in (11) and from the non-tensed contexts in (19):

(19) a. qarrar-it ʔasaafir
decided-I to go

b. qarrar-it ma ʔasaafir
decided-I not to go

Our analysis predicts that bound morphemes should not block head-movement. The negative head *ma* is affixal whereas *lan* is free. Like any projected bound heads, *ma* and the abstract infinitival T in Iraqi Arabic require a lexical host at SS. This morphological property of *ma* and the abstract zero T forces V-movement to Neg and then to the abstract T, taking Neg along with it without violating the HMC. V in its surface location in T binds its trace through Neg. This is schematized below:

(20)



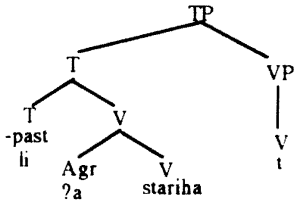
Neither the T head nor the negative head in Iraqi Arabic blocks V-movement because at SS, the level where the verb needs to antecedent-govern its trace, the negative is incorporated into the verb.[4] In standard Arabic, on the other hand, Neg-movement to the overt T is unmotivated since both Neg and the infinitive T are [+free]. This accounts for the contrast in (16). The ungrammaticality of (17) is also accounted for: V-movement can only apply across Neg since Neg is a free morpheme in this language. (18) also follows from the morphological property of the infinitival T *ʔan*, its being a free morpheme obviating the need for morphological well-formedness, thus blocking V-movement.

A similar conclusion is suggested by certain properties of purpose clauses in Standard Arabic. Their Tense marker, *li-*, is [-free] and appears prefixed on the [V+Agr] complex, contrasting with the infinitive clauses of this language discussed above:

(21) jalas-tu li-ʔastariha
sat-I to-rest
'I sat to take some rest'

It should be clear that the facts of purpose clauses, with respect to V-movement to the Tense marker *li-*, pattern with those of the affirmative tensed clauses in both Iraqi Arabic and Standard Arabic. The [-free] feature of T forces V-movement to satisfy its morphological requirement:

(22)



If T is non-affixal, naturally, the prediction should be that the verb would fail to move to the T position. This is attested in SA infinitivals of the type exemplified in (16), and in English infinitives where *to* is non-affixal:

(23) a. I bought a knife to cut the bread with.

b.*I bought a knife cut to the bread with.

Given this parallelism, it is only natural to state the reasons underlying the optionality of V-movement in these languages in terms of the following parameter:

(24) The T Parameter: (i) T is [+free]
(ii) T is [–free]

The [-free] Tense element appears as a constituent of the [V+Agr] complex or of the Neg element. The merger between the two constituents results from the process of head movement. The host for Tense, that is whether Tense appears inflected on the verbal complex or on Neg is determined by Minimality and the underlying hierarchical order of Tense and V, as discussed above.

In terms of the T Parameter (24) we accounted for the morphological versus the periphrastic nature of infinitives in Standard Arabic as opposed to the periphrastic nature of the English counterpart. Standard Arabic infinitives instantiate both values of the T Parameter, whereas English infinitives instantiate only the first value.

7.0 VERB MOVEMENT IN THE CONTEXT OF NEGATION IN FRENCH AND EGYPTIAN ARABIC

An equally principled explanation of the interaction of negation with V-movement in French and Egyptian Arabic can be provided along similar lines. The explanation relies in part on the assumption embodied in the Neg Parameter stated in (15) that there is a distinction between affixal and non-affixal negative categories. Affixal categories are subject to an SS requirement that they must attach to a base.[5] The facts of these languages in the context of negation are similar to those of Iraqi Arabic, and contrast with Standard Arabic.

Starting with French, negation in finite clauses is expressed by two discontinuous elements, *ne-*, which appears prefixed on the verb, and *pas* which follows the verb:

(25) a. Jean ne parle pas anglais.
"Jean does not speak English."
b. Jean n'a pas dormi.
"Jean has not slept."
c. Jean n'est pas fou.
"Jean is not stupid."

Note that Tense is realized on the verbal complex, not on Neg, unlike Standard Arabic. Pollock (1989) suggests that *ne* is the head of NegP and *pas* is a specifier.

Egyptian Arabic displays the same discontinuous pattern, a prefix *ma* and a suffix *sh*:

(26) a. ma-ʃraf-sh
not-know I-not
'I don't know

b. ma-ʃindi-sh
not-have I-not
'I don't have'

c. ma-fi-sh
not-there-not
'There isn't'

As in French, and on the basis of its similarity with Iraqi Arabic, we assume that *ma* in Egyptian Arabic is the head of NegP, while *sh* occupies the specifier of NegP, or is adjoined to the head category to its left.

The fact that the head *ne* and the head *ma* both appear attached to the verbal complex suggest that they are affixal. In other words, they have value (ii) of the Neg Parameter (15) repeated below:

(27) The Neg parameter: (i) Neg is [+free]
(ii) Neg is [–free]

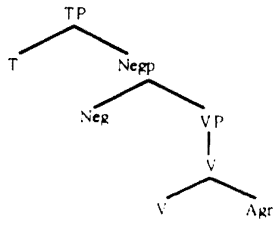
The implication that this value has for the derivation of negative clauses in French and Egyptian Arabic is that it forces the verb to move to Neg. The situation described here contrasts with SA where Neg has value (i) which implies that the verb is forced to remain inside VP.

In order to discuss the derivation of negative clauses in French and Egyptian Arabic, we need to determine the position of Neg and T in relation to the verb in the clause structure. That is, we need to establish the issue of representation of these head categories.

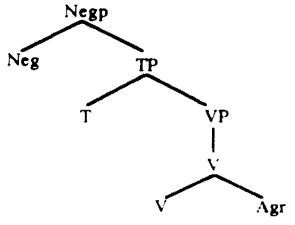
8.0 THE ORDER OF NEG AND TENSE

Two possibilities suggest themselves. The first is the Standard Arabic and the Iraqi Arabic type of clausal structure where T governs Neg as in (28) below. The second possibility is a clausal structure in which Neg governs T as in (29). The two structures are schematized below:

(28)



(29)



Notice that the two structures are compatible with the requirements imposed by the HMC. Cyclic V-movement to the highest head attaches the negative heads, the french *ne* and the Egyptian Arabic *ma* on the verbal complex, hence the prefixal nature of the negative head. The verb at SS according to both structures can bind its trace since in moving to the topmost head it drags the intervening head along with it rather than moving across it. Insofar as the derivation of the data in (25-26) is concerned, the two structures are equally plausible. On universalist grounds, it is also tempting to assume that the Neg category occupies the same position in the clause structure of French, Egyptian Arabic, Standard Arabic and Iraqi Arabic, always governed by T as in (28). However, structure (28) where T immediately dominates NegP, cannot be right as shown by fact that the future Tense marker *ha* 'will' appears inside Neg in Egyptian Arabic:

(30) a. ma-ha-yktib
not-will-write
'He will not write'

b. ma-ha-ykuun waadih
not-will-be clear
'it will not be clear

This fact is not accounted for by structure (28) since it makes the incorrect prediction that the future Tense affix should appear outside Tense. The following are the ungrammatical counterparts of the examples in (30). In each case *ha* is external to Neg:

(31) a. *ha-ma-yktib
will-not-write

b. *ha-ma-ykuun waadih
will-not-be clear

c. *ma-yktib-ha
not-write-will

d. *ma-ykuun-ha waadih
not-be-will- clear

The examples in (30-31) provide the motivation for adopting structure (29) instead of (28). Since (29) base-generates Neg in a position governing T, it not only derives the correct form of the verbal complex with Neg being outside Tense instead of inside it, but it also accounts naturally for sentences displaying incorrect order of affixes. In the absence of evidence to the contrary, we assume that French patterns with Standard Arabic and Iraqi Arabic. Both select structure (28) over (29). Egyptian Arabic differs from this group of languages in selecting (28), more specifically in encoding the following ordering constraint:

(32) The Neg Parameter: Neg is c-selected by T in Egyptian Arabic

9.0 CONCLUSION

To summarize, we provided justification based on morphological evidence for placing Neg in different positions in the clause structure of two sets of languages. The two sets of languages differ not only in the relative position of Neg but along another related property. Neg in Iraqi Arabic, French and Egyptian Arabic is affixal. It is non-affixal in Standard Arabic and English. The typological distinction that this difference gives rise to is that in the former type of languages the verb in clauses that contain a negative element has a complex morphological form, while in the latter type it has a simplex morphological form. The proposed analysis, if correct, depends crucially on the assumption that Neg is a head in its own right and therefore interacts with V-movement.

NOTES

1 Facts relating to the ability of quantifiers in Standard Arabic to host clitics and to receive Case receive a simple and a principled explanation once quantifiers are assumed to head a maximal projection, QP.

2 'do support': the insertion of a verbal expletive auxiliary in the presence of *not* to host the Tense inflection is expected in English given that Neg does not have the ability to host the Tense inflection:

(i) a. I didn't eat.
b.*I not eat

We assume that "do-support" applies as a repair strategy when the legitimate process of T lowering, rather than V-raising, fails to apply. The reason we adopt lowering, not raising, for English is due to the effect that V-movement would have on the derived word order of clauses containing VP-adverbs:

(i) a. John slowly touched the sword.
b.*John touched slowly the sword.

A raising analysis makes the false prediction that the verb would always leave the adverb behind giving rise to unattested structures as in (ib).

In the context of sentence negation, the strategy inserts *do* at S-structure, that is subsequent to the failure of T-lowering. This suggestion has important consequences for head movement in English. In particular, failure of V-movement to T in the context of negation in English is not a case of minimality, i.e. is not due to Neg being an intervening head category with a blocking effect. A minimality based account of "do insertion" is adopted in a number of recent analyses (Laka 1990, Pollock 1989, and Chomsky 1988, among others). We treat Neg in English as an

adjunct, and assume with Pollock (1989) that only modals, due to their strength, are raised to T. Lexical verbs are weak and thus remain inside VP.

3 The prediction that this assumption makes is that, if the Tense element were overt, it should appear at the periphery of the [Neg+V+Agr] adjunction structure, not inside it. Evidence from the Baghdadi dialect disconfirms this prediction:

(i) ma-da-y-ktib
not-present-Agr-write
'He is not writing'

Notice that the present Tense morpheme *da* appears inside the complex, not outside. This fact argues against postulating a uniform structure for negative clauses in Standard Arabic and Iraqi Arabic. The postulated structure gives rise to unattested order of affixes: *[da-ma-y-ktib] with uniform right adjunction, *[y-qra-ma-da] with uniform left adjunction, *[ma-y-ktib-da] with non-uniform right then left adjunction, and *[da-y-ktib-ma] with non-uniform left then right adjunction. There are three possibilities in which the correct surface order of the affixes can be derived from structure (4). The first possibility is direct movement of the verb to T followed by Neg raising to T. The direct V-movement, however, is excluded by the HMC. The second possibility is is to assume that Neg first moves to T followed by V-movement. The third alternative is to assume a lowering analysis with T lowering to the verb first followed by Neg lowering. Since lowering is not subject to the HMC, the issue of the specific order on affixes does not arise. This alternative, however, is ruled out by a general ban against lowering. These problems do not arise if negative clauses in Iraqi Arabic are assumed to derive from an underlying structure in which NegP dominates TP. In terms of head selection, then, the difference between Standard Arabic and Iraqi Arabic would be as follows:

(ii) Standard Arabic: T c-selects NegP.
(iii) Iraqi Arabic: Neg c-selects TP.

4 A ban is needed to block the movement of V alone from inside the complex head category. Extraction out of complex head categories would give rise to unattested orders of affixes. Such orders may be excluded if we assume that Move-alpha may not move a part of a derived head. This can be stated in terms of the following filter:

*[X-zero ... t ...].

Assuming this filter, the only possible material that may undergo successive cyclic head movement is the entire unit.

5 The requirement is proposed in Lasnik (1981:164) in terms of the following filter:

A morphologically realized affix must be a syntactic dependent of a morphologically realized category at Surface Structure.

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