COMPLEMENTATION IN MOROCCAN ARABIC

by

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ABSTRACT

This dissertation presents an investigation of the phenomenon of complementation in the syntax of Moroccan Arabic, a language which has not been the subject of extensive research in theoretical syntax.

In particular, the present study examines a construction which I have termed "Matrix-Object Dislocation." This construction is similar to Left-Dislocation, in that the interpretive operation in both constructions is the same, namely anaphoric binding. Matrix-Object Dislocation differs from Left-Dislocation, however, in that, with the former, an element dislocated from a closed complement appears in the position of object of the matrix verb, while with Left-Dislocation the dislocated element does not occur in the domain of any verb.

Chapter I constitutes an introduction to the syntax of simple sentences in Moroccan, presented within the theoretical framework of Lexical-Functional Grammar (LFG) of Bresnan (1982a,b,c) and Kaplan and Bresnan (1982). Chapter II is a discussion of Moroccan complex sentences, and together Chapters I and II provide the theoretical assumptions and details of Moroccan grammar upon which the work in the final two chapters is based.

Chapter III presents an extensive study of the Matrix-Object Dislocation construction, in which the dislocated element is shown to be in matrix object position, but at the same time does not function as a normal object with respect to certain syntactic operations. This apparently anomalous behavior has its roots in the fact that, though the dislocated element is a constituent-structure object of the matrix verb, it is not, in most cases, a thematic argument of that verb. The dislocated element, bearing the function OBJ to the matrix verb, serves to give prominence to an argument in the complement clause, and therefore also bears the TOPIC function with respect to that clause. Verbs in Moroccan subcategorize for this TOPIC function, as not all verbs that take closed complements allow Matrix-Object Dislocation.

Chapter IV constitutes an investigation of complements to verbs other than the Matrix-Object Dislocation verbs. These complements superficially appear to be open complements, but closer examination
reveals that, for the most part, they are functionally closed complements. Only a small class of verbs are found to take open adjectival complements.

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CHAPTER I SIMPLE SENTENCES IN MOROCCAN

The language under investigation in this study is Moroccan Arabic, one of the Arabic colloquial languages, which is spoken in Morocco, North Africa. I will henceforth use the term "Moroccan" to refer to Moroccan Arabic.

This first chapter is a sketch of simple sentences in Moroccan, discussed in the framework of Lexical-Functional Grammar (LFG) of Bresnan (1982a,b,c) and Kaplan and Bresnan (1982). During the course of this discussion I will provide a brief introduction to the LFG framework; for detailed information about LFG and analyses of syntactic phenomena within that framework, however, I refer the interested reader to Bresnan, ed. (1982).

1.1 Word order

Moroccan is a language whose word order varies among speakers. For some Moroccans, SVO is the normal surface order of constituents, while other speakers consistently use a VSO order. All speakers accept either order, but usually have a preference for one order or the other. In this dissertation I will assume VSO to be the underlying word order for Moroccan, for the reasons to be detailed below, and as that is the order used by my principal informant.

There are several differences between the SVO and VSO orders. Speakers who prefer the VSO order feel that there is a difference in the
prominence of the NP muhend between the following two sentences.1,2

(1) a. ĥa muhend.
came(3sgf) Mohand
'Mohand came.'

b. muhend ĥa.
Mohand came(3sgf)
'Mohand came.'

The difference in the two sentences in (1) is that (1a) is a normal declarative sentence, while in (1b) the NP muhend has received prominence.3 For speakers who use the VSO order, sentence (1b) is an example of a sentence in which the subject NP has been left-dislocated. Left-Dislocation, which is discussed in detail in Chapter 3, usually involves a "resumptive" pronominal affix; however, there are no subject affixes in Moroccan other than the subject agreement markers, which are always obligatory on any verb. The status of these agreement markers is discussed below. With respect to (1b), this order of constituents would only be appropriate if Mohand were being discussed in some previous discourse. One could not start a conversation about him by using the order in sentence (1b). On the other hand, if Mohand is being discussed,

---

1 The third person singular masculine morpheme is not phonologically realized in the perfect; I have, therefore, glossed this morpheme with parentheses.

2 The phonetic symbols used in this dissertation are:

- \( \zeta \) = one of the "emphatic" (pharyngealized) consonants
- \( \varepsilon \) = the voiced pharyngealized fricative (\( \xi \))
- \( \eta \) = the voiceless pharyngealized fricative (\( \zeta \))
- \( \epsilon \) = schwa (\( \emptyset \))

Other symbols are standard phonetic symbols.

3 I use the term "prominence" in a non-technical manner here; I will later equate this term with the function TOPIC.
then (1a) would be an inappropriate order.

For many speakers, an indefinite non-specific subject NP may not precede its verb, as shown in (2) below.

(2) a. žat bent.
came-3sgf girl
'A girl came.'

b. *bent žat.
girl came-3sgf
'A girl came.'

It is a fact about Moroccan (and many other languages, as well) that non-specific NPs cannot receive prominence in a sentence. (This issue is discussed in Chapter III in some detail.) If, as I claim, the subject-first order puts prominence on the subject, then it is to be expected that (2b), where the subject is indefinite and non-specific, would be ungrammatical as a normal declarative sentence.

Questions provide yet another reason to assume that SVO is not the basic word order for Moroccan. 4 (3a) below is a simple transitive sentence with the VSO word order, and (3b) is the result of questioning the object NP in (3a). Similarly, in (4), the (a) sentence is an SVO sentence equivalent to (3a), and the (b) sentence is the result of questioning the object NP in (4a).

(3) a. šaf muḥend nažat.
saw(3sgm) Mohand Najat
'Mohand saw Najat.'

b. škun šaf muḥend?
who saw(3sgm) Mohand
'Who did Mohand see?'

4 This argument was pointed out to me by A. Fassi Fehri.
(4) a. muḥend šaf  naţat.
    Mohand saw(3sgm) Najat
    'Mohand saw Najat.'

   b. *škun muḥend šaf?
      who Mohand saw(3sgm)
      'Who did Mohand see?'

Questioning the object is not possible with the SVO order, as seen in (4b), but (3b), where the order is VSO, is a well-formed question. One possible explanation for the ungrammaticality of (4b) is that question formation triggers a rule of subject-verb inversion; this rule is not, however, motivated elsewhere in the grammar of Moroccan, and thus postulation of such a rule would unnecessarily complicate the grammar. The most likely explanation for the above facts is that VSO is the basic word order of Moroccan sentences, and a single phrasal constituent may precede the verb when it receives prominence. 5

There appears to be no difference between word order in main clauses and the order in subordinate clauses; those speakers for whom SVO is the preferred order accept SVO in subordinate as well as main clauses, as illustrated in (5) below.

(5) a. muḥend šaf  dik lbent ᵕsẹfụ.
    Mohand saw(3sgm) that the-girl in-Sefrou
    'Mohand saw that girl in Sefrou.'

There are some speakers for whom VSO is the preferred order that tend to use the SVO order in certain cases (which I have not yet clearly determined). One of these cases seems to be where the subject and the object are both definite NPs or names. Thus, (ii) is preferred to (i).

(1) šaf muḥend naţat.
(2) muḥend šaf naţat.  'Mohand saw Najat.'

I thank A. Fassi Fehri for bringing this fact to my attention.
b. ḍerf belli muḥend ʂaf dik lbent ṕṣefru.
   know-1sg that Mohand saw(3sgm) that the-girl in Sefrou
   'I know that Mohand saw that girl in Sefrou.'

c. mṣat 1fas dik lbent elli muḥend ʂaf ṕṣefru.
   went-3sgf to-Fes that the-girl that Mohand saw(3sgm) in Sefrou
   'The girl that Mohand saw in Sefrou went to Fes.'

Though both SVO and VSO word orders are possible in Moroccan, I will, as mentioned above, assume the VSO order in this dissertation.

1.2 Types of simple sentences

1.2.1 Intransitive verbs

The sentences given above are examples of sentences which consist of a verb and its subject (e.g. (1a)), and a verb with both a subject and an object NP ((3a) and (4a)). Several other types of sentences are possible in Moroccan.

Moroccan (and Arabic in general) is one of the languages which is referred to as a "subject PRO-drop" language. This name is used for languages in which a lexical subject NP is not required in a sentence. In Moroccan, a subject NP need not be present in a sentence, and subject agreement markers appear on each verb whether or not a subject NP is present. Therefore, a fully interpretable sentence in Moroccan may consist solely of a verb, as shown in (6) and (7) below.

(6) a. xa.
    came(3sgm)
    'He came.'

b. xat.
    came-3sgf
    'She came.'
c. ŋiti.
came-2sg
'You came.'

(7) a. kanekteb.
CONT-1sg-write
'I'm writing.'

b. kaykteb.
CONT-3sgm-write
'He's writing.'

c. Katketbu.
CONT-2pl-write
'You're (pl.) writing.'

The sentences in (6) consist of verbs in the perfect tense, while those in (7) are in the imperfect. In (6a) there is a Ø morpheme which indicates that the verb's subject features are third person masculine singular, and the -t suffix in (6b) indicates third person singular feminine. The -ti suffix in (6c) is the second person singular marker. In (7), the prefix ka- is the continuative morpheme, and the morpheme n- in (7a) indicates first person, while the y- prefix in (7b) indicates third person singular masculine. The t- prefix in (7c) refers to second person, and the accompanying -u suffix is the plural marker. Singular in the imperfect is indicated by the lack of a suffix (except for the second person singular feminine form, where the feminine -i suffix occurs).

Table I below gives the subject feature markers for perfect verbs, using the verb kteb 'write' as an example, and Table II gives the subject feature markers for imperfect verbs, again using the verb kteb.

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6 The third person singular masculine perfect form will be used throughout this dissertation as the citation form of verbs, following the traditional Arab grammarians. Moroccan has no infinitive verb form.
The verb pattern $C_1C_2eC_3$, as in kteb, is a very common pattern for perfect verbs. I will call the form of the verb represented by this pattern the "verb root" ($V_{\text{Root}}$). Other verbs, ža 'come,' mša 'go,' and šri 'buy,' for example, consist of one or two consonants and a vowel; these verbs are considered irregular in terms of conjugation. Other types of irregular verbs exist as well, but as this section is a brief introduction to simple sentences, rather than a study in morphology, I will not detail the patterns of the various verb types here.

Tables I and II show that each verb contains subject feature markers which indicate the person, number, and, in certain cases (third person singular perfect, and second person singular imperfect), the gender of the verb's subject. These features are expressed in a suffix on perfect verbs, and in both a prefix (person) and suffix (number or gender) on imperfect
verbs. All verbs have this same set of affixes attached to the $V_{\text{Root}}$, though their phonological shape (and that of the verb) will vary, depending on the phonological environments in which they occur. I will return shortly to the question of the interpretation of the subject markers.

Since in Moroccan verbs may occur with or without an overt subject NP, the following rule will generate both of the sentences in (9) below.

(8) $S \rightarrow V \ (NP)$

(9) a. ژا muḥend.
came(3sgm) Mohand
'Mohand came.'

b. ژa.
came(3sgm)
'He came.'

Rule (8) says that a verb may be followed by an optional NP, and thus (9a) has used the longer expansion if this rule, while (9b) has used the shorter expansion.

An analysis of a sentence in LFG consists (in part) of a constituent structure (c-structure) and a functional structure (f-structure). The c-structure is derived from Phrase Structure (P-S) rules, which contain functional annotations providing information necessary for the construction of f-structures. Information from the lexicon is also used in the construction of an f-structure, which in turn provides grammatical information for rules of semantic interpretation.

The annotated P-S rule for a simple Moroccan intransitive sentence is given in (10) below.
The arrows in the functional notation are used to instantiate values in f-structure. The \( \uparrow \) arrow refers to the f-structure of the "mother" node, i.e., the node immediately dominating the node in question. Here, the "mother" node is S. The \( \downarrow \) arrow refers to the f-structure of the node to which the equation is attached, the "daughter" node. These equations simply mean that information about the f-structure of the node on the right-hand of the "=" is information about the f-structure of the node on the left-hand side.

The equation \( \uparrow=\downarrow \) is usually (in the unmarked case) associated with heads of phrases. This equation means that the features of the daughter node f-structure (\( \downarrow \)) are transmitted up the tree to become features of the mother node f-structure (\( \uparrow \)). Thus, since V is the head of S, the properties associated with the verb will also be properties of the sentence. In the unmarked case, the \( \uparrow=\downarrow \) equation is usually omitted, though for clarity I will always include it.

The functional equation on the NP in (10) states that that NP's f-structure (\( \downarrow \)) is the subject of S, the mother node f-structure (\( \uparrow \)). This NP is in parentheses because it is optional.

The lexical entry for a predicate consists of three parts: the **predicate argument structure**, which sets forth the arguments on which a particular lexical item exerts selectional restrictions, the **grammatical function assignment**, which details the functions that are syntactically subcategorized by the lexical item, and the **lexical form**, which matches functions with arguments.
The lexical entry for the verb *see* in English, as in the sentence *Diane saw Bob*, is given in (11) below.

(11)  

<table>
<thead>
<tr>
<th>(11) see</th>
<th>a. predicate argument structure</th>
<th>SEE &lt;1,2&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b. grammatical function assignment</td>
<td>{(SUBJ)(OBJ)}</td>
</tr>
<tr>
<td></td>
<td>c. lexical form</td>
<td>SEE &lt;(SUBJ)(OBJ)&gt;</td>
</tr>
</tbody>
</table>

*See* has a dyadic predicate argument structure, whose first argument, the perceiver, is assigned the function SUBJ(ECT), and whose second argument, the thing/person perceived, is assigned the function OBJ(ECT) (cf. Bresnan (1982a:289)).

Modifying this model, the lexical form of the intransitive verb  'come' in Moroccan will be that of (12) below.

(12)  

| (12)  | V, \(\text{\textasciitilde}_{\text{\#A}}\) <(SUBJ)> |

In (12) the \(\text{\textasciitilde}\) refers to the f-structure of the V node, which is syntactically identified with the f-structure of the S through the \(\text{\textasciitilde}=\text{\textasciitilde}\) equation on the V. The lexical form in (12) means that the lexical item  'come' is a verb (V), and that its "meaning," indicated by the PRED feature, is  'come' with a monadic predicate argument structure, i.e., it subcategorizes only for the SUBJ function.

As mentioned above, all verbs must contain a subject marker. Since rule (10) can generate sentences without an overt subject NP, I assume that when the subject NP is absent, the subject markers function as the subject argument of the verb. When a sentence does contain an overt subject, then the subject markers are merely phonological realizations of the features of the subject NP, having no PRED (meaning) value. This situation is
reminiscent of clitic doubling in Spanish, and the analysis I adopt here for Moroccan subject affixes is based on the analysis of Spanish object clitic doubling given in Montalbetti (1981).

Sample lexical entries for the subject markers are given in (13) and (14) below (cf. Tables I and II). The imperfect markers are represented by the examples in (13), while (14) includes representative perfect subject markers.

(13) a. \textit{n-}: AF, \((\uparrow \text{SUBJ PRED}='\text{PRO}')\)
\begin{itemize}
\item \(\uparrow \text{SUBJ PERS}=1\)
\item \(\uparrow \text{ASPECT}=\text{IMPERFECT}\)
\end{itemize}

b. \textit{t-}: AF, \((\uparrow \text{SUBJ PRED}='\text{PRO}')\)
\begin{itemize}
\item \(\uparrow \text{SUBJ PERS}=2\)
\item \(\uparrow \text{ASPECT}=\text{IMPERFECT}\)
\end{itemize}

Note: The \textit{i} second person singular feminine marker in the imperfect and the \textit{u} plural marker in the imperfect are dependent affixes, i.e., they must occur in conjunction with an imperfect affix which has a \text{PERS} feature. Thus, \textit{u} is marked with the features \(\uparrow \text{SUBJ NUM}=\text{PL}, \uparrow \text{ASPECT}=\text{IMPERFECT}\), and \textit{i} has the features \(\uparrow \text{SUBJ GEND}=\text{FEM}, \uparrow \text{SUBJ PERS}=2 \uparrow \text{ASPECT}=\text{IMPERFECT}\). These affixes also occur with \text{IMPERATIVES}.

(14) a. \textit{t-}: AF, \((\uparrow \text{SUBJ PRED}='\text{PRO}')\)
\begin{itemize}
\item \(\uparrow \text{SUBJ NUM}=\text{SG}\)
\item \(\uparrow \text{SUBJ PERS}=1\)
\item \(\uparrow \text{ASPECT}=\text{PERFECT}\)
\end{itemize}

b. \textit{ti}: AF, \((\uparrow \text{SUBJ PRED}='\text{PRO}')\)
\begin{itemize}
\item \(\uparrow \text{SUBJ NUM}=\text{SG}\)
\item \(\uparrow \text{SUBJ PERS}=2\)
\item \(\uparrow \text{ASPECT}=\text{PERFECT}\)
\end{itemize}

c. \textit{(a)t}: AF, \((\uparrow \text{SUBJ PRED}='\text{PRO}')\)
\begin{itemize}
\item \(\uparrow \text{SUBJ NUM}=\text{SG}\)
\item \(\uparrow \text{SUBJ PERS}=3\)
\item \(\uparrow \text{SUBJ GEND}=\text{FEM}\)
\item \(\uparrow \text{ASPECT}=\text{PERFECT}\)
\end{itemize}
The equations in the lexical entries given above for a representative set of subject affixes (of the category AF(FIX)) indicate information about the subject of the verb to which they are attached. If a lexical subject appears in a sentence, its features must match those of the subject affix appearing on the verb.

Pronouns and pronominal affixes have the PRED value 'PRO.' The equation +SUBJ PRED='PRO' appears in parentheses in the above lexical entries, indicating that this feature is optional. It is the optionality of this feature that allows the two interpretations of the subject affixes, one in which the affix actually functions as the pronominal subject of a verb, and the other in which the subject affix is merely an agreement marker. Principles governing the well-formedness of functional structures will assure that the correct option is chosen, as I will illustrate in the discussion to follow.

The subject affixes are attached to verb roots in the lexicon by morphological rules, and together they form a phonological word. Neither the affixes nor the V Root may stand alone as a phonological word; they must occur together, and are inserted as a unit into the verb (V) node in c-structure. This process is illustrated schematically in (15) below.

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7 I use the term "affix," rather than "clitic," to denote the subject (and object) markers, as the items in question attach directly to a V Root, and both the affixes and the V Root are dependent elements; that is, neither may occur independently of the other (see above). These affixes have been referred to as clitics elsewhere in the literature (e.g., Fassi Fehri (1982)).
(15) Ṣaṭ. 'She went.'

\[
\text{c-structure:} \quad \begin{array}{c}
S \\
\downarrow \\
V \\
\downarrow \\
mṣat
\end{array} \quad \text{(by rule (10))}
\]

\[
\text{lexicon:} \quad \begin{array}{c}
V_{\text{Root}} \\
\downarrow \\
\text{mṣa} \\
\downarrow \\
\text{AF} \\
\downarrow \\
\text{at}
\end{array}
\]

\[
\uparrow \text{PRED='MṢA<(SUBJ)>}' \\
\uparrow \text{SUBJ PRED='PRO'} \\
\uparrow \text{SUBJ NUM=SG} \\
\uparrow \text{SUBJ PERS=3} \\
\uparrow \text{SUBJ GEND=FEM} \\
\uparrow \text{ASPECT=PERFECT}
\]

The grammatical features of the affix thus become features of the V.

To show how the P-S rules and the lexical information interact to form f-structures, below are possible sentences generated by rule (10)(repeated here for convenience), and their possible f-structures.

(10) \( S \rightarrow V \) (NP) (10) a. \( S \rightarrow V \) (NP) \[\uparrow = \uparrow \] \( \uparrow \text{SUBJ}=\downarrow \) \[\uparrow = \downarrow \] \( \uparrow \text{SUBJ}=\uparrow \)

b. \( S \rightarrow V \) \[\uparrow = \uparrow \]

(16) mṣat Ṣaṭ. 'Najat left.' (by rule (10a)

a. lexical entries:

mṣa: \( V \), \( \uparrow \text{PRED='MṢA<(SUBJ)>}' \)

8 For a detailed discussion of the construction of f-structures, see Kaplan and Bresnan (1982).
-at : AF, (↑SUBJ PRED='PRO')
  ↑SUBJ NUM=SG
  ↑SUBJ PERS=3
  ↑SUBJ GEND=FEM
  ↑ASPECT=PERFECT

nażat : N, ↑PRED='NAJAT'
  ↑NUM=SG
  ↑PERS=3
  ↑GEND=FEM

b. c-structure (annotated with functional schemata)

Note: To facilitate comprehension of the formation of the f-structure, each node has been assigned a variable.

c. equations for instantiation in functional structure, given by the c-structure and the lexicon:

i. xl=x2
ii. x1SUBJ=x3
iii. x2PRED='MŠA<(SUBJ)>'
iv. (x2SUBJ PRED='PRO')
v. x2SUBJ NUM=SG
vi. x2SUBJ PERS=3

(vi. through viii. are given by the lexical entry for the subject affix -at, and ix. through xii. are given by the lexical entry for nażat.)
d. possible f-structures:

1. \[ \begin{array}{ccc}
   & \text{SUBJ} & x3 \\
   x1 & & \text{PRED 'NAJAT'} \\
   x2 & & \begin{array}{c}
   \text{PRED 'PRO'} \\
   \text{NUM} \quad \text{SG} \\
   \text{PERS} \quad 3 \\
   \text{GEND} \quad \text{FEM}
   \end{array} \\
   \text{PRED 'M\"{S}A<(SUBJ)>'} \\
   \text{ASPECT} \quad \text{PERFECT}
\end{array} \]

2. \[ \begin{array}{ccc}
   & \text{SUBJ} & x3 \\
   x1 & & \text{PRED 'NAJAT'} \\
   x2 & & \begin{array}{c}
   \text{NUM} \quad \text{SG} \\
   \text{PERS} \quad 3 \\
   \text{GEND} \quad \text{FEM}
   \end{array} \\
   \text{PRED 'M\"{S}A<(SUBJ)>'} \\
   \text{ASPECT} \quad \text{PERFECT}
\end{array} \]

The f-structure (16d1) is the result of having chosen the SUBJ PRED='PRO' equation for the affix. Since both the affix and the NP SUBJ were chosen, the SUBJ PRED has two values, as meaningful elements such as PRED are unique. The f-structure (16dii) is the result of not having chosen the optional SUBJ PRED='PRO' equation on the subject affix. The consistency condition, which is discussed below, will rule out (16d1) as an ill-formed f-structure, as the PRED feature does not have a unique value.

I will now demonstrate in detail the construction of an f-structure. F-structures consist of pairs of "fnames" and "fvalues." The fnames are the elements on the left in an f-structure, and their values are on the right, as indicated below.

(17) \[
\begin{array}{cc}
\text{fname} & \text{fvalue} \\
\vdots & \vdots
\end{array}
\]
Thus, in (16dii), one fname is SUBJ, whose fvalue is everything inside the brackets labeled x3. Another fname is PRED, whose fvalue is 'M\(\text{SA}<(\text{SUBJ})>\)'. NUM is an fname whose value in (16dii) is SG, just as the fnames GEND and PERS have the fvalues FEM and 3, respectively.

To illustrate the procedure for the construction of an f-structure, I return to the items in (16a, b, and c): the lexical entries, the c-structure, and the equations. Equation (16ci) is taken from the c-structure equation \(+=+\) on the V node. That equation states that the features of the V are the features of the S. Since V is associated with the variable x2, and S is associated with x1, the equation becomes \(x1=x2\), substituting the variables for the arrows, where x1 is the f-structure of the \(\uparrow\) node, and x2 is the f-structure of the \(\uparrow\) node. To construct an f-structure, therefore, the variables x1 and x2 are listed as follows:

\[
\begin{align*}
(18) & \quad x1 \\
& \quad x2
\end{align*}
\]

Next, (16cii) indicates that x1's SUBJ is the f-structure x3. This equation also comes from the c-structure, where x3 is associated with the NP node, and its mother node is the S node. Therefore, \(\uparrow\text{SUBJ}\) can be written as x1SUBJ, as the \(\uparrow\) referred to in the equation is the f-structure of S, which has been assigned the variable x1. The \(\uparrow\) refers to the f-structure of the NP, which is x3, and thus \(\uparrow\text{SUBJ}=\uparrow\) can be written x1SUBJ=x3. This equation is introduced into the f-structure as follows:

\[
\begin{align*}
(19) & \quad x1 \\
& \quad \text{SUBJ} \\
& \quad x2 \\
& \quad x3
\end{align*}
\]
This part of the f-structure indicates that the subject of the S (x1), and thus also the subject of the V (x2) by \( t=\), is the f-structure x3. Since the V has a subject affix attached to it, the properties of that affix become properties of the whole verb. The lexical entry for the affix -at indicates that its mother's subject's PRED value is (optionally) 'PRO,' its mother's subject's number is singular, its mother's subject's person is third, and its mother's subject's gender is feminine. The affix is attached to the verb, which bears the \( t=\) equation, and thus the properties of the affix are properties of the S. Therefore, the equations \( \dagger\text{SUBJ NUM=SG, } \dagger\text{SUBJ PERS}=3, \dagger\text{SUBJ GEND}=\text{FEM} \) can be written \( x_2\text{SUBJ NUM=SG, } x_2\text{SUBJ PERS}=3, \) and \( x_2\text{SUBJ GEND}=\text{FEM} \), respectively. Choosing the PRED='PRO' equation on the affix gives the equation \( x_2\text{SUBJ PRED}='\text{PRO}' \). These equations are now instantiated into the f-structure as follows:

\[
(20)\quad \begin{array}{c|c|c}
\begin{array}{c}
x_1 \\
\text{SUBJ} \ \ x_3 \left[ \begin{array}{c}
\text{PRED} \ '\text{PRO}' \\
\text{NUM} \ \ \text{SG} \\
\text{PERS} \ \ 3 \\
\text{GEND} \ \ \text{FEM}
\end{array}
\right]
\end{array} \\
x_2
\end{array}
\]

The lexical entry for the NP *nażat* reveals that its number is singular, its person is 3, and its gender is feminine. Since the SUBJ NP is assigned the variable x3, the above information may be written \( x_3\text{NUM=SG, } x_3\text{PERS}=3, \) and \( x_3\text{GEND}=\text{FEM} \). The NP *nażat* also has the equation \( x_3\text{PRED}='\text{NAJAT}' \). The partial f-structure using the lexical entry for *nażat* is given in (21) below.

\[
(21)\quad \begin{array}{c|c|c}
\begin{array}{c}
x_1 \\
\text{SUBJ} \ \ x_3 \left[ \begin{array}{c}
\text{PRED} \ '\text{NAJAT}' \\
\text{NUM} \ \ \text{SG} \\
\text{PERS} \ \ 3 \\
\text{GEND} \ \ \text{FEM}
\end{array}
\right]
\end{array} \\
x_2
\end{array}
\]
If the optional equation on the affix -at is chosen in the sentence mšat nažat 'Najat left,' then the resulting f-structure, that shown above in (16d1), is ill-formed. The partial f-structure is given in (22) below.

\[(22) \begin{array}{c} x_1 \text{SUBJ} \ x_3 \begin{bmatrix} \text{PRED 'NAJAT'} \\ \text{PRED 'PRO'} \\ \text{NUM SG} \\ \text{PERS 3} \\ \text{GEND FEM} \end{bmatrix} \\ x_2 \end{array}\]

The f-structure labeled x3 is ill-formed, as the PRED feature has two values, violating the consistency condition on the well-formedness of f-structures. The consistency condition is stated below.

\[(23) \text{Consistency requires that every grammatical feature have a unique value.}\]

Therefore, when a subject NP occurs and the PRED value is chosen for the subject affix, the f-structure will be ill-formed, a violation of consistency. (16dii) is the well-formed f-structure for the sentence mšat nažat 'Najat left,' as each of the features has a unique value.

I will now examine the possibilities for sentences generated by rule (10b).

\[(24) \text{mšat. 'She left.'}\]

a. lexical entries: same as in (16a).

b. c-structure:

\[
\begin{array}{c}
\text{S} \ x_1 \\
\downarrow \\
\text{mšat} \\
\end{array}
\]
c. equations for constructing f-structure:

i. \( x_1 = x_2 \)

ii. \((x_2\text{SUBJ PRED='PRO'})\)

iii. \(x_2\text{SUBJ NUM=SG}\)

iv. \(x_2\text{SUBJ PERS=3}\)

v. \(x_2\text{SUBJ GEND=FEM}\)

vi. \(x_2\text{ASPECT=PERFECT}\)

These equations are from the lexical entry for the affix -at, except \(x_1 = x_2\), which is from the V node in c-structure.

d. possible f-structures:

1. \[
\begin{align*}
\text{SUBJ} & \left[ \text{PRED 'PRO'} \right] \\
\text{NUM} & \text{SG} \\
\text{PERS} & \text{3} \\
\text{GEND} & \text{FEM} \\
\text{PRED} & \text{'MŠA<(SUBJ)>'} \\
\text{ASPECT} & \text{PERFECT}
\end{align*}
\]

2. \[
\begin{align*}
\text{SUBJ} & \left[ \text{NUM SG} \right] \\
\text{PERS} & \text{3} \\
\text{GEND} & \text{FEM} \\
\text{PRED} & \text{'MŠA<(SUBJ)>'} \\
\text{ASPECT} & \text{PERFECT}
\end{align*}
\]

The f-structure in (di) above is the result of having chosen the \text{SUBJ PRED='PRO'} equation on the affix -at; this f-structure is well-formed. (dii), on the other hand, the result of not having chosen the \text{SUBJ PRED='PRO'} equation on the affix, is not well-formed, as the \text{SUBJ} has no \text{PRED} value. When the optional equation is not chosen, the subject affix merely acts as an agreement marker; in the sentence \text{mšat 'She left,'} however, the subject affix must function as the pronominal subject of the sentence, not as an agreement marker, as no lexical subject occurs. Thus, the f-structure in (dii) above is not well-formed for semantic interpretation, as the subject
function has no PRED value. Well-formedness conditions on f-structures, then, will reject the cases where no subject NP is chosen, nor is the PRED value for the subject affix, and where both the subject NP and the PRED value for the affix are chosen.

The following ungrammatical sentence will be ruled out by the consistency condition.

    went-3sgf Mohand
    *Mohand (she) went.

b. f-structure:

```
SUBJ [PRED 'MOHAND'
      NUM SG
      PERS 3
      GEND MASC
      GEND FEM
    [
      PRED 'MŠA<(SUBJ)>'
      ASPECT PERFECT
    ]]
```

Consistency, which requires that each feature have a unique value, will reject the f-structure in (25b), as there are two values for SUBJ GEND. In this way, agreement between the subject affix and the subject NP is ensured.

Two further conditions on the well-formedness of f-structures will be important in sentential analysis:

(26) a. **Completeness** requires that every grammatical argument subcategorized by a PRED must appear in the functional structure of that PRED;
b. **Syntactic coherence** requires that only the arguments that are subcategorized by a given PRED appear in the functional structure of that PRED.

An example of an incomplete sentence, and its f-structure, is given in (27) below, and an incoherence sentence and its f-structure is given in (28).

(27) a. *šeft.
    saw-1sg
    *I saw.

b. lexical entry:
   'šAF<(SUBJ)(OBJ)>'

c. f-structure of (a):

```
SUBJ [ PRED 'PRO'
    PERS 1
    NUM SG ]

PRED 'šAF<(SUBJ)(OBJ)>'

ASPECT PERFECT
```

(28) a. *mšat nažat muňend.
    went-3sgf Najat Mohand
    *Najat went out Mohand.

b. lexical entry:
   'MŠA<(SUBJ)>'
c. f-structure of (a):

\[
\begin{array}{c}
\text{SUBJ} \quad \text{PRED 'NAJAT'} \\
\text{NUM} \quad \text{SG} \\
\text{PERS} \quad 3 \\
\text{GEND} \quad \text{FEM}
\end{array}
\]

\[
\begin{array}{c}
\text{PRED 'MŚA<(SUBJ)>'} \\
\text{ASPECT} \quad \text{PERFECT}
\end{array}
\]

\[
\begin{array}{c}
\text{OBJ} \quad \text{PRED 'MOHAND'} \\
\text{NUM} \quad \text{SG} \\
\text{PERS} \quad 3 \\
\text{GEND} \quad \text{MASC}
\end{array}
\]

(27c) is an incomplete f-structure because the OBJ function subcategorized by the verb ġaf 'see' does not appear in that f-structure. (28c) is incoherent because there is an extra argument in the f-structure, the OBJ, which is not subcategorized for by the intransitive verb mśa 'go.' Therefore, each sentence in (27) and (28) will be ruled out because of ill-formed f-structures.

To summarize this section on intransitive verbs: In order to capture the facts that (a) an overt subject NP need not appear in a sentence, i.e., a sentence may consist of just a verb, and (b) subject affixes always occur on verbs, even when a subject NP is present, the following steps were taken:

(i) the subject NP is marked as optional in the sentence P-S rule;
(ii) the equation +SUBJ PRED='PRO' was introduced in the lexical entry of subject affixes as an optional value; if chosen, the subject affix functions as a pronominal subject; if not chosen, the subject affix merely acts as an agreement marker with no PRED value.
Independently motivated conditions on the well-formedness of f-structures will rule out the cases where neither the SUBJ PRED='PRO' value for the affix nor a subject NP is chosen, or where both the subject NP and the SUBJ PRED='PRO' value are chosen.

1.2.2 Transitive verbs

In Moroccan an object argument of a transitive verb may be represented either by an NP or a pronominal affix, but not both. These facts are illustrated in (29) below.

(29) a. šratu lbent 1xēwēb.  
   bought-3sgf-3sgm the-girl  
   'The girl bought it.'

b. šratu lbent.  
   bought-3sgf-3sgm the-girl  
   'The girl bought it.'

c. *šratu lbent 1xēwēb.  
   bought-3sgf-3sgm the-girl the-bread  
   *The girl bought it the bread.

In (29a) the object of the verb šra 'buy' is expressed by an NP, 1xēwēb 'the bread,' whereas in (29b) the object is the affix -u (third person singular masculine). (29c), where both the object affix and the object NP appear, is ungrammatical.

Sentences (29a) and (29b) can be generated by the revised sentence rule given below in (30).

(30) S + V (NP) (NP)  
    ↑=↑ ↑SUBJ=↑ ↑OBJ=↑

In rule (30), the NP marked with the OBJ function is optional. Thus, the
sentence in example (29b), where no object NP appears, will be generated as the shorter expansion of the rule. In that case, the object affix functions as the object argument of the verb, as demonstrated below.

The situation with respect to objects is unlike that of subjects; with the subject, both the subject affix and a subject NP may co-occur, whereas with objects, an object affix and an object NP are mutually exclusive. The natural way of accounting for these facts within the framework used here is to assign an obligatory +OBJ PRED='PRO' equation to the object affixes in the lexicon, as shown by the representative examples in (31) below.

Table III details the Moroccan object affixes.

<table>
<thead>
<tr>
<th>Person</th>
<th>Number 1</th>
<th>Number 2</th>
<th>Number 3m</th>
<th>Number 3f</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Singular</td>
<td>Plural</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>-ni</td>
<td>-na</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>-(e)k</td>
<td>-kum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3m</td>
<td>-u/-h</td>
<td>-hum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3f</td>
<td>-ha</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The third person singular masculine object affix is realized as -u when the verb ends in a consonant, and as -h when the verb ends in a vowel.

(31) a. -ni  : AF, +OBJ PRED='PRO'
       +OBJ NUM=SG
       +OBJ PERS=1

b. -kum : AF, +OBJ PRED='PRO'
          +OBJ NUM=PL
          +OBJ PERS=2

c. -u   : AF, +OBJ PRED='PRO'
          +OBJ NUM=SG
          +OBJ PERS=3
          +OBJ GEND=MASC
The object affixes (henceforth "suffixes," a special case of the category AF) cannot stand alone as phonological words; they must be bound to a verb (not a V\textsubscript{Root}). Thus, as with the subject affixes, the object suffixes combine with a verb to form a word, and this word is inserted into the V node in c-structure. All the features of the object suffixes thus become features of the verb, as is the case with the subject affixes.

Since, as shown in (31), the OBJ PRED='PRO' equation is obligatory on object suffixes, it must occur in the f-structure every time an object suffix appears. Consistency will then rule out the case where both an object suffix and an object NP occur together in a sentence. The resultant f-structure in such a case is given in (32).

(32) a. *§eftu muğend.
    saw-lsg-3sgm Mohand
    *I saw him Mohand.

b. f-structure of (a):

```
SUBJ PRED 'PRO'
    NUM SG
    PERS 1

PRED '§A<(SUBJ)(OBJ)>'
ASPECT PERFECT

OBJ PRED 'PRO'
    PRED 'MOHAND'
    NUM SG
    PERS 3
    GEND MASC
```

In (32b) the OBJ function has two PRED values, and so the f-structure is inconsistent, and thus rejected. Were neither an object suffix nor an object NP selected (cf. (27a)), the resultant f-structure would be incomplete ((27c)), and thus ill-formed and consequently rejected.
The difference, then, between the object suffixes and the subject affixes is that the latter are obligatory and may co-occur with a subject NP, while the former may never co-occur with an object NP. These differences are quite simply accounted for by the optionality of the SUBJ PRED='PRO' lexical equation associated with the subject affixes, and the obligatoryness of the OBJ PRED='PRO' equation in the lexical entry of the object suffixes.

The possibility of optional tG PRED='PRO' equations (where G=SUBJ or OBJ) predicts that the following three classes of languages would exist, for languages that utilize subject and/or object clitics or affixes.

(33) I. A language in which the tG PRED='PRO' equation is obligatory in the lexical entry of the clitic, i.e., a clitic may never co-occur with a corresponding lexical subject or object;

II. A language in which the tG PRED='PRO' equation is an optional part of the lexical entry of a clitic; i.e., a clitic may occur with a corresponding lexical subject or object; if it does, the tG PRED='PRO' equation is not chosen, and the clitic is merely an agreement marker. If no lexical subject or object appears in a sentence, the clitic functions as the pronominal subject or object, and the equation is chosen;

III. A language in which the tG PRED='PRO' equation does not appear in the lexical entry of the clitics; i.e., a clitic is merely an agreement marker at all times, never functioning as a pronominal subject or object.

All three types of languages are, in fact, found for the case where G=SUBJ. An example of a language in Class I is Irish (McCloskey and Hale (1982)). Moroccan is a Class II language, and German belongs to Class III.
The same three classes are also predicted for languages with object clitics, but Class III does not exist for the case where G=OBJ. Languages with object clitics always seem to allow the non-occurrence of a lexical object when an object clitic appears, and thus the object clitic never functions uniquely as an agreement marker. Classes I and II, on the other hand, do exist for languages with object clitics. An example of a Class I language is French, where an object clitic may never co-occur with a lexical object. Class II is represented by Spanish (cf. Montalbetti (1981)) and Swahili, where in some cases a lexical NP object and an object affix do co-occur.

The analysis of subjects and objects proposed in this chapter treats both functions in an identical fashion in terms of subcategorization. Such an analysis is supported by LFG, in which neither subjects nor objects have special status with respect to subcategorization and government; agreement and government symmetries are thus expected in languages. The Government-Binding (GB) theory of Chomsky (1981), on the other hand, a theory in which sentences are analyzed in terms of structural configurations rather than grammatical relations, claims that there are subject-object asymmetries in languages. GB accords subjects a special status, as they do not necessarily behave in the same manner as objects with respect to certain linguistic processes.

The lack of a Class III language for objects may indicate that there is in fact a difference between subjects and objects in terms of what types of processes languages allow with respect to each function. Although asymmetries are expected in GB, however, that theory does not predict the asymmetry in the language classes discussed here, the lack of a Class III
language with respect to the object relation.

1.2.3. Prepositional arguments

In Moroccan as well as English, some verbs subcategorize for a prepositional argument in addition to the SUBJ (and OBJ) functions they may take. A prepositional, or oblique, argument is assigned either the function OBL_θ or OBL_θ OBJ, where θ refers to one of the set of thematic roles, AG(ENT), INSTR(UMENTAL), EXP(ERIENCER), SO(URCE), GO(AL), etc. 9

The function OBL_θ OBJ is subcategorized for by verbs which can generally occur with only one particular preposition, where that preposition is merely a case-marker, having no PRED value. Thus, one lexical entry for the preposition l- 'to' is that given in (34) below.

(34) l- : \text{tpCASE=}OBL \{\text{GO} \}
\{\text{EXP} \}

The above lexical entry indicates that the preposition l- is a case-marker whose value is an OBL with the thematic role GOAL or EXPERIENCER. Since the preposition merely functions as a case-marker, the argument of the verb that takes an OBL_θ OBJ is the OBJ, the function associated with the NP in the PP.

Verbs that subcategorize for an OBL_θ OBJ argument differ as to whether that argument is obligatory or optional. Verbs in Moroccan that take an obligatory OBL_θ OBJ include \text{etā l-} 'give to,' \text{eqel elā} 'remember,' \text{ậa mea} 'be suitable, go with,' \text{ậa l-} 'strike as,' \text{ttshab l-} 'seem to,

9 See Chapter IV for evidence that a PP is not an XCOMP in Moroccan.
think (contrary to fact),' and mša l- 'lose.' Without the preposition,
four of these verbs have a completely different meaning: ēqel 'recognize'
(vs. ēqel ēla 'remember'), žā 'come' (vs. žā mča 'be suitable,' and ža l-
'strike as'), and mša 'go' (vs. mša l- 'lose'). Thus, with the meanings
given above, the prepositions are obligatory. The other two verbs čta l-
'give' and ttshāb l- 'seem to' never occur without the preposition (except
with the "Dative"; see below). 10

Example sentences for each verb are given in (35) through (40) below.

(35) čtaw lefīlus lmuḥend.
gave-3pl the-money to-Mohand
'They gave the money to Mohand.'

(36) ēqel t ēla dik āttiq.
remembered-lsg on that the-road
'I remember that road.'

(37) žāt had lkeswa mča nažat. (vs. žāt had lkeswa.
came-3sgf this the-dress with Najat
'This dress came.')

(38) žāt lmuḥend zwina.
came-3sgf to-Mohand beautiful-f
'She struck Mohand as beautiful.'

(39) ttshābli xeržū.
seemed(3sgm)-to-lsg went out-3pl
'I thought (contrary to fact) they went out.'

(40) mšaw lefīlus lmuḥend.
went-3pl the-money to-Mohand
'Mohand lost the money.'

10 The subject of the verb ttshāb l- is invariably an abstract third per­
son singular masculine in the perfect, rather like the "dummy" subject
it in English.
Representative examples of the class of optional OBL₀ OBJ verbs include xaf 'be afraid,' gal (l-) 'say (to),' and eya (men) 'be tired of, from.' xaf may occur with one of two prepositions, while the other two verbs each select only one particular case-marker. Examples of the use of these verbs are given in (41) through (43) below.

(41) a. xeft men ssbeε. feared-lsg from the-lion
    'I was afraid of the lion.'

b. xeft ela ṭaṣi ṳṭiḥ. feared-lsg on myself lsg-fall
    'I was afraid for myself that I'd fall.'

(42) galt lmuḥend ymāi 3lḥanut. said-3sgf to-Mohand 3sgm-go to-the-store
    'She told Mohand to go to the store.'

(43) eyit men dak ṣṣdaε. tired-lsg from that the-noise
    'I got tired from that noise.'

Sample lexical entries for representatives of the class of OBL₀ OBJ verbs are given in (44) and (45) below.

(44) ɛتا : V, ↑PRED='ɛTA<(SUBJ)(OBJ)(OBL_GO OBJ)>' (= 'give')

(45) ʍa l- : V, ↑PRED='ʍA L-<(SUBJ)(OBL_EXP OBJ)>' (= 'lose')

These lexical entries, together with that of the preposition l- given in (34) above, are used to construct the f-structures given below for sentences (35) and (40), which are repeated here for convenience.
(35)  StyleSheet. 'They gave Mohand the money.'

(46)  

The PCASE θ value in the OBLθ f-structure must match the θ value given in the subcategorization requirement of the verb; if the two values do not match, the f-structure will be ill-formed. Thus, a sentence such as *mshaw leflus men muhend is ill-formed, as the preposition men has the PCASE
value $OBL_{SO}$, and the verb $mâa$ (with the meaning 'lose') requires an $OBL_{EXP}$
PCASE value.

As mentioned above, an oblique argument may be assigned the $OBL_{\emptyset}$ OBJ
function, or the $OBL_{\emptyset}$ function. The sentences in (35) through (40) provide
examples of verbs that subcategorize for an $OBL_{\emptyset}$ OBJ. In this type of
oblique argument, the preposition is a case-marker and has no PRED value.
With $OBL_{\emptyset}$ arguments, on the other hand, the entire PP is the argument of
the verb, and the preposition is a meaningful element. It thus has a PRED
value, and itself subcategorizes for an object, as illustrated in the
lexical entry below.

(48) $L-$ : $P$, $\uparrow$PRED='L-<(OBJ)>'

The lexical entry in (48) indicates that $L-$ is a preposition (not a
case-marker in this instance), and that it takes an object argument.

$OBL_{\emptyset}$ arguments are usually locatives or directionals, and verbs that
subcategorize for an $OBL_{\emptyset}$ generally take a range of locative or directional
prepositions. Verbs in this class in Moroccan include $saâf$ 'send,' $mâa$ 'go,'
$wâel$ 'arrive,' and $dxel$ 'enter.' Example sentences with these verbs are
given in (49) through (52) below.

(49) a. $giffṭṭ$ $lebra$ $lmuḥend.$
 sent-lsg the-letter to-Mohand
 'I sent the letter to Mohand.'

b. $giffṭṭ$ $l\tilde{e}webz$ $mca$ $mmu.$
 sent-lsg the-bread with mother-3sgm
 'I sent the bread with his mother.'

c. $giffṭṭu$ $me\tilde{n}$ $kaza$ $lṣefṭṭu.$
 sent-lsg-3sgm from Casa to-Sefrou
 'I sent it from Casa(blanca) to Sefrou.'
d. _since,  _muḥend  _murahum.  
     sent-1sg Mohand behind-3pl  
     'I sent Mohand after them.'

(50) a.  _mšat  _llwad  _baṣṭ ṭe็บben.  
     went-3sgf to-the-river to 3sgf-wash  
     'She went to the river (in order) to wash (clothes).'

b.  _mšit  _meahum  ṭeṭta  llwad.  
     went-lsg with-3pl until to-the-river  
     'I went with them until the river.'

c.  _mšit  _men  kaza  ṭeʃru.  
     went-lsg from Casa to-Sefrou  
     'I went from Casa to Sefrou.'

(51) a.  _wšelna  _leğdaṣ  _bekri.  
     arrived-lpl to-the-house early  
     'We arrived at the house early.'

b.  _wšelna  _hdahum.  
     arrived-lpl next to-3pl  
     'We arrived next to them.'

c.  _wšelna  _feʃṭumubil.  
     arrived-lpl in-the-car  
     'We arrived in the car.'

(52) a.  _dxelna  _leğdaṣ.  
     entered-lpl to-the-house  
     'We entered the house.'

b.  _dxelt  _mea  ṭmi.  
     entered-1sg with mother-1sg  
     'I went in with my mother.'

c.  _dxelu  _men  ṭeʃerṭem.  
     entered-3pl from the-window  
     'They came in through the window.'
A representative lexical entry for the verbs in the \( \text{OBL}_0 \) class is given in (53) below, for the verb \( \text{saft} \) 'send.'

(53) \( \text{saft} : V, \uparrow \text{PRED}='\text{SAFT}<(\text{SUBJ})(\text{OBJ})(\text{OBL}_0)>' \)

The above lexical entry and the lexical entry for \( \_ \_ \) in (48) together are used to construct the \( \text{f} \)-structure given below for sentence (49a).

(49a) \( \text{giff} \text{t lebra lmubend}. \) 'I sent the letter to Mohand.'

(54) \[
\begin{array}{c}
\text{SUBJ} \quad \left[ \begin{array}{c}
\text{PRED} \ '\text{PRO}'
\end{array} \right] \\
\text{NUM} \ SG \\
\text{PERS}\ 1 \\
\text{OBJ} \quad \left[ \begin{array}{c}
\text{PRED} \ '\text{LEBRA}'
\end{array} \right] \\
\text{NUM} \ SG \\
\text{PERS}\ 3 \\
\text{GEND} \ \text{FEM}
\end{array}
\right]
\]

\( \text{OBL}_0 \quad \left[ \begin{array}{c}
\text{PRED} \ '\text{L-<(OBJ)>}' \\
\text{OBJ} \quad \left[ \begin{array}{c}
\text{PRED} \ '\text{MOHAND}'
\end{array} \right] \\
\text{NUM} \ SG \\
\text{PERS}\ 3 \\
\text{GEND} \ \text{MASC}
\end{array} \right] 
\]

Verbs that subcategorize for an \( \text{OBL}_0 \) often allow more than one such argument, though if more than one does occur, each must have a different \( \theta \) value. The sentence below illustrates a case of a verb with several \( \text{OBL}_0 \) arguments.

(55) \( \text{saftat lebra mea mmu men kaza l}\text{gefru}. \) sent-3sgf the-letter with mother-3sgm from Casa to Sefrou

'She sent the letter with his mother from Casa to Sefrou.'
In sentence (55) the verb *saft* occurs with three OBL\_\_ arguments. Thus, another possible lexical entry for *saft* is that given in (56) below.

(56) *saft* : V, ↑PRED=’SAFT<(SUBJ)(OBJ)(OBL\_SO)(OBL\_GO)(OBL\_MNR)>’

The sentence P-S rule must now be expanded to include the prepositional arguments. The revised rule is given in (57) below.

(57) \[ S \rightarrow V \quad (NP) \quad (NP) \quad PP^* \]
\[ \uparrow=\downarrow \quad \uparrow\text{SUBJ}=\downarrow \quad \uparrow\text{OBJ}=\downarrow \quad \left\{ \uparrow\text{OBL\_SO}=\downarrow \right\} \]
\[ \uparrow\text{OBL\_GO OBJ}=\downarrow \right\} \]

The * notation on the PP indicates that any number of oblique arguments, including none, may appear in a sentence. The number, of course, is restricted to the number of oblique arguments subcategorized for by a given verb. The number of OBL\_OBJ arguments that a verb can take is restricted to one, but, as seen above, verbs that subcategorize for an OBL\_ may take several such arguments.

When a prepositional phrase (with both OBL\_ and OBL\_OBJ functions) is pronominal, it consists of a suffix (one of the set of the object suffixes given in Table III) attached to the preposition.\(^{11}\) The resulting PP is usually a clitic appearing in the position immediately following the verb, to the left of the subject. When the preposition involved is 1- 'to,' f- 'in,' or b- 'with,' the cliticization is obligatory; with the other prepositions the cliticized position is preferred. The following sentences

\(^{11}\) The first person singular suffix is -i when attached to a preposition, rather than the verbal suffix -ni.
illustrate the behavior of the pronominal clitic PPs.

(58) a. ɛɛta muḥend lektab ledderri.
gave(3sgm) Mohand the-book to-the-boy
'Mohand gave the book to the boy.'

   b. ɛɛtalih muḥend lektab.
gave(3sgm)-to-3sgm Mohand the-book
'Mohand gave to him the book.'

   c. *ɛɛta muḥend lektab lih.
gave(3sgm) Mohand the-book to-3sgm
'Mohand gave the book to him.'

   d. *ɛɛta muḥend lih lektab.
gave(3sgm) Mohand to-3sgm the-book
'Mohand gave to him the book.'

(59) a. ɡaft muḥend lebɾa mea muϕu.
sent(3sgm) Mohand the-letter with mother-3sgm
'Mohand sent the letter with his mother.'

   b. ɡaft meaḥa muḥend lebɾa.
sent(3sgm) with-3sgf Mohand the-letter
'Mohand sent with her the letter.'

   c. ɡaft muḥend lebɾa meaḥa.
sent(3sgm) Mohand the-letter with-3sgf
'Mohand sent the letter with her.'

   d. ɡaft muḥend meaḥa lebɾa.
sent(3sgm) Mohand with-3sgf the-letter
'Mohand sent with her the letter.'

(60) a. galt naẓat lmuḥend ymṣi llḥanut.
said-3sgf Najat to-Mohand 3sgm-go to-the-store
'Najat told Mohand to go to the store.'

   b. galtlih naẓat ymṣi llḥanut.
said-3sgf-to-3sgm Najat 3sgm-go to-the-store
'Najat said to him to go to the store.'
c. *galt na'at lih ymši liḥanut.
   said-3sgf Najat to-3sgm 3sgm-go to-the-store
   'Najat said to him to go to the store.'

(61) a. mšaw leflus ḫmuhend.
   went-3pl the-money to-Mohand
   'Mohand lost the money.'

b. mšawlih leflus.
   went-3pl-to-3sgm the-money
   'He lost the money.'

c. *mšaw leflus lih.
   went-3pl the-money to-3sgm
   'He lost the money.'

In (58), (60), and (61), the preposition l- with an attached suffix may not appear in the position in which its non-pronominal counterpart occurs; instead, the pronominal PP with l- must appear in the position immediately following the verb. In (60), the cliticization of the pronominal PP is optional, though preferred, as the preposition involved is not an obligatory cliticizer.

Example (62) below illustrates schematically the lexical formation of prepositional clitics, while (63) is the revised P-S rule that will generate the prepositional clitics in their proper position.

(62)

\[ \text{c-structure:} \]

\[
\text{lexicon:} \begin{cases} 
\{\uparrow \text{PCASE=OBL}_0\} & \uparrow \text{OBJ PRED='PRO'} \\
\{\uparrow \text{PRED='a'} \} & \uparrow \text{OBJ NUM=x} \\
\end{cases} \]
\[
\uparrow \text{OBJ PERS=y} \\
\uparrow \text{OBJ GEND=z} \\
\]
Note: In the above schema, x, y, and z are variables ranging over the values of NUM, PERS, and GEND, and 'a' is a variable ranging over the possible PRED values of the prepositions.

\[(6\hat{a}) \quad S \rightarrow V \quad (PP) \quad \{ \{ \uparrow \text{OBL}_\emptyset = \downarrow \} \quad \{ \{ \uparrow \text{OBL}_\emptyset \text{ OBJ} = \downarrow \} \quad \{ \{ \uparrow \text{OBJ} = \downarrow \} \quad \{ \{ \uparrow \text{OBL}_\emptyset \text{ OBJ} = \downarrow \} \quad \{ \{ \uparrow \text{OBL}_\emptyset = \downarrow \} \quad \{ \{ \uparrow \text{OBJ} = \downarrow \} \quad \{ \{ \uparrow \text{OBL}_\emptyset \text{ OBJ} = \downarrow \} \quad \{ \{ \uparrow \text{PRED} = \text{c pron} \} \quad \{ \{ \uparrow \text{SUBJ} = \downarrow \} \quad \{ \{ \uparrow \text{OBJ} = \downarrow \} \quad \{ \{ \uparrow \text{PRED} = \text{c pron} \} \}
\]

The "c" in the equation \[\text{c PRED} = \text{c pron}\] indicates that that equation is a constraint equation. A constraint equation does not aid in the construction of an f-structure, but rather it specifies a particular value that must appear for a certain feature if the f-structure in question is to be well-formed. The term 'pron' is a grammatical feature indicating that the item in question is a syntactic pronoun; it does not specify a particular value for PRED.

The c-structure PP in (62) above includes all the information from both the preposition and the affix. I have labeled the object affixes AF₂, and shall refer to the subject affixes as AF₁, for reference purposes only. The rule in (63) generates the prepositional clitic in the position immediately following the verb in c-structure; a PP is a clitic only when its OBJ is pronominal.

In analyzing oblique arguments in this section, I have assumed the compound function analysis for the cases in which the preposition functions as a case-marker. That is, I have called such an argument an OBL₀ OBJ, rather than an OBL₀. Such a compound (or "layered") function analysis
was proposed in Bresnan (1982b), in which certain PPs were assigned, for example, the function "TO-OBJ" or "BY-OBJ." The use of the compound function for obliques was subsequently rejected in Bresnan (1982a), as its language-specific properties created problems for the functional locality principle in the sentential analysis of languages other than English (see Bresnan (1982a:303) for details).

An analysis of obliques in which the compound function $\text{OBL}_\theta \text{OBJ}$ is used, however, is not at all ruled out on theoretical grounds, and is, in fact, preferable in the case of Moroccan obliques, as I will demonstrate below. First, however, I must note that the adoption of the compound function analysis entails a revision of the coherence condition; as stated above, coherence requires that all subcategorizable functions appearing in an $f$-structure must be subcategorized by a PRED in the same $f$-structure. The OBJ in the compound function $\text{OBL}_\theta \text{OBJ}$, however, does not occur in the same $f$-structure as its subcategorizing PRED; rather, it occurs in the $f$-structure of the $\text{OBL}_\theta$, one $f$-structure level down from the PRED that subcategorizes for it. Thus, the $f$-structure that contains that OBJ is incoherent. Bresnan (1982a:388 FN5) notes that coherence has another possible interpretation, which makes use of the functional locality principle: "an $f$-structure is locally coherent if and only if the values of all the subcategorizable functions that it contains are subcategorized by a PRED," in which "local" is taken to mean "in the $f$-structure that immediately contains or is contained in this $f$-structure." Thus, since the PRED that subcategorizes the OBJ that appears in the $\text{OBL}_\theta$ $f$-structure is in the $f$-structure that immediately contains the $\text{OBL}_\theta$ $f$-structure,
coherence is satisfied. Functional locality ensures that at most two levels of f-structure may be involved (see Bresnan (1982a) for a discussion of the issues mentioned here).12

As I noted above, the compound function analysis for obliques in Moroccan is preferable to the possible alternatives. Using the function $\text{OBL}_g \text{ OBJ}$ rather than $\text{OBL}_o$ allows a unified treatment of the object affixes in Moroccan; if the function $\text{OBL}_o$ were used, then the object affixes would require one set of features for their occurrence as verbal affixes, and another set when attached to prepositions, as I will demonstrate below.

When a preposition is a case-marker, it has no PRED value; if this type of PP has the $\text{OBL}_o$ function, then the NP bears the PRED value and is the head of the construction (cf. Bresnan (1982a:303) for justification of this claim). If the NP bears the PRED value, then naturally when it is a pronominal affix it must also bear the PRED value. The lexical entry for a representative pronominal affix attached to a preposition would thus be as in (64) below.

(64) \[ \begin{array}{l}
-u : \text{AF}, \ \uparrow\text{PRED}='\text{PRO}' \\
\uparrow\text{NUM}=\text{SG} \\
\uparrow\text{PERS}=3 \\
\uparrow\text{GEND}=\text{MASC}
\end{array} \]

Since the affix is the PRED of the oblique argument under this analysis, rather than its object, it must not specify the features of the object of the construction, as do the verbal object affixes $\text{AF}_2$ in (31) above. (31c)

12 Levin (1983) adopts the compound function analysis of obliques, and proposes a revision of the coherence condition that makes reference to the "clause nucleus" of an f-structure; see the cited work for details. A definition of "clause nucleus" is given in Chapter II of this dissertation.
is repeated below for convenience.

\[(31c) \ -u \ : \ \text{AF}, \ \uparrow \text{OBJ PRED=PR} \]
\[\uparrow \text{OBJ NUM=SG} \]
\[\uparrow \text{OBJ PERS=3} \]
\[\uparrow \text{OBJ GEND=MASC} \]

Since the verbal object suffix is not the head of the verb of which it forms a part, it must merely specify the feature values of the verb's object, not the verb's PRED value. If the features in (31c) are used, however, with the affix \(-u\) attached to a preposition in an OBL\(_g\) argument, an ill-formed f-structure would result; the affix in that case would be the PRED of the argument, not its object.

Thus, assuming that PPs have the function OBL\(_g\) requires the postulation of two sets of features for the object affixes, those in (31) for the verbal affixation, and those represented by (64) for prepositional affixation.

The f-structures below for sentence (61b), repeated here, show that if the PP has the function OBL\(_g\), where the P is merely a case-marker, as in (34), then the object affix must not have the features in (31), but rather those of (64).

\[(61b) \ \text{ma\=awlih le\=flus.} \ 'He lost the money.' \]
The f-structure in (65a) is incoherent, as the function OBJ does not occur in the argument list of the PRED 'MšA L-'. The OBJ features appear in this f-structure from the feature specifications of the affix -u in (31). If the object affix features from (64) are used, on the other hand, then the well-formed f-structure (65b) results.

(65a) would be well-formed if the oblique argument of the PRED 'MšA L-' were assigned the function OBL₂ OBJ, rather than OBL₂. (65b) is the correct f-structure if the function OBL₂ is adopted, but this analysis requires that the affixes AF₂ have two different sets of features, one used when they are attached to verbs (specifying the OBJ features), and another for when
they are attached to prepositions, as in (64). Since the compound function \( \text{OBL}_\theta \text{ OBJ} \) analysis provides a unified treatment of the affixes \( \text{AF}_2 \) in Moroccan, I have adopted that analysis in this study. As shown above, the \( \text{OBL}_\theta \text{ OBJ} \) function is assigned to PPs whose preposition is a case-marker; when the preposition is meaningful, however, the oblique argument has the function \( \text{OBL}_\theta \).

One prepositional clitic in Moroccan actually seems to attach directly to the verb as a suffix. This case involves the preposition \( l_\theta \) 'to.' The other prepositions are not clearly suffixed to the verb when pronominal, as is \( l_\theta \). There is, for instance, a difference in acceptability between the sentence in (66) below and those in (67), where material intervenes between the verb and the prepositional clitic.

(66) \( m\mathring{s}\text{at} \text{ be}\text{da} \text{ m\v{e}ah} \text{ lbaar}\text{h}. \)
\( \text{went-3sgf by the way with-3sgm yesterday} \)
\'She went, by the way, with him yesterday.'

(67) a. \( *m\mathring{s}\text{aw} \text{ be}\text{da} \text{ lih} \text{ leflus}. \)
\( \text{went-3pl by the way to-3sgm the-money} \)
\( \text{vs. m\v{s}\text{aw}}\text{lih} \text{ be}\text{da} \text{ leflus}. \)
\( \text{went-3pl-to-3sgm by the way the-money} \)
\'He lost, by the way, the money.'

b. \( *galt \text{ be}\text{da} \text{ lih} \text{ ym\v{s}i} \text{ ll\v{a}nanut}. \)
\( \text{said-3sgf by the way to-3sgm 3sgm-go to-the-store} \)
\( \text{vs. galtlih} \text{ be}\text{da} \text{ ym\v{s}i} \text{ ll\v{a}nanut}. \)
\( \text{said-3sgf-to-3sgm by the way 3sgm-go to-the-store} \)
\'She told him, by the way, to go to the store.'

(66) above, where material intervenes between a verb and a prepositional clitic with \( \text{mea} \), is grammatical, while similar examples in (67), with the
preposition 1-, are ungrammatical. The only material that may intervene between a verb and a PP clitic with 1- is the negative marker -š, as shown below.

Facts of negation provide further evidence that 1- is more closely bound to the verb when pronominal than are the other prepositions, including f- and b-, which obligatorily cliticize (see above). The discontinuous negative marker ma...š is usually placed around a verb and prepositional clitic containing 1- for normal negation. If the -š is attached to the right of any other PP clitic, however, the meaning is not mere negation, but an emphatic negation of the whole sentence, with special intonation required. The examples below illustrate this difference.

(68) a. ma şafṭałihš.
   NEG sent(3sgm)-3sgf-to-3sgm-NEG
   'He didn't send it to him.'

   b. ma şafṭhašlih.
   NEG sent(3sgm)-3sgf-NEG-to-3sgm
   'He didn't send it to him.'

(69) a. ma ēṭīṭuliš.
   NEG gave-lsg-3sgm-to-3sgm-NEG
   'I didn't give it to him.'

   b. ma ēṭīṭušlih.
   NEG gave-lsg-3sgm-NEG-to-3sgm
   'I didn't give it to him.'

(70) a. ma dxelṭ menuš.
   NEG entered-lsg from-3sgm-NEG
   'I did not go in through it!'
(71) a. ma eqelt Elihš.
    NEG remember-lsg on-3sgm-NEG
    'I do not remember him!'

b. ma eqeltš Elih.
    NEG remember-lsg-NEG on-3sgm
    'I don't remember him.'

For (68) and (69), the (b) sentences exhibit the marked form of negation, while the (a) sentences involve normal negation. In (70) and (71), on the contrary, the (b) sentences exhibit the normal form of negation, and the (a) sentences are only acceptable with a special emphatic meaning, a negation of the entire sentence, rather than the normal negative meaning. In other words, though all the sentences above in (68) through (71) are acceptable, (70b) and (71b) have the equivalent negative meaning to (68a) and (69a). (70a) and (71a) have an emphatic negation reading, and are less commonly used.

The sentences in (68) and (69) show that when an object suffix appears on a verb, a co-occurring prepositional suffix follows the object suffix. The ungrammaticality of the (b) sentences in (72) and (73) below show that this order is the only possible order of these suffixes when they both appear together.

(72) a. €titulih.
    gave-lsg-3sgm-to-3sgm
    'I gave it to him.'

b. *€titlihu.
    gave-lsg-to-3sgm-3sgm
    I gave to him it.
(73) a. ʕifṭahalih.
sent(3sgm)-3sgf-to-3sgm
'He sent it to him.'

b. *ʕaftlihha.
sent(3sgm)-to-3sgm-3sgf
He sent to him it.

(74) a. ma ʕituliḥš.
NEG gave-lsg-3sgm-to-3sgm-NEG
'I didn't give it to him.'

b. ma ʕitušliḥ.
NEG gave-lsg-3sgm-NEG-to-3sgm
'I did not give it to him.'

c. *ma ʕitliḥšu.
NEG gave-lsg-to-3sgm-NEG-3sgm

d. *ma ʕitliḥuš.
NEG gave-lsg-to-3sgm-3sgm-NEG

e. *ma ʕitšulih.
NEG gave-lsg=NEG-3sgm-to-3sgm

The sentences in example (74) show that when the negative marker is present, the order of the suffixes must again be object suffix-prepositional suffix, as shown in (74a-d). Example (74) also shows that the negative marker -š may only occur either following the object suffix or following the prepositional suffix, but it may not intervene between the verb and the object suffix. This behavior is to be expected if the verb and its object, joined together in the lexicon, form a single unit, a V.

Since the prepositional clitic with l- is not normally separable from the verb, I assume that it is an affix (AF), and that it is attached to the verb in the lexicon in the position following the object suffix AF. A sentence such as (74b), however, indicates that this affixation is not
obligatory, though it is preferable.

The preposition \( l^- \) is distinguished from the other prepositions in yet another way: certain verbs permit the omission of this preposition when it occurs as a prepositional suffix, rather like the Dative alternation in English. In Moroccan a PP suffix with the preposition \( l^- \) is usually realized with certain verbs as what appears to be an object suffix \( AF_2 \), rather than the prepositional suffix \( AF_3 \). Not all verbs that take the preposition \( l^- \) allow it to be deleted (e.g. \( gal l^- \) 'say to,' \( saft l^- \) 'send to'), but those verbs that do permit the suppression of the preposition \( l^- \) include \( \\epsilon ti l^- \) 'give to,' \( werra l^- \) 'show to,' \( za l^- \) 'come to, strike as,' and \( t\tilde{t}shab l^- \) 'think (seem to).' I shall call this class of verbs "dative" verbs for convenience, though their behavior is not exactly like that of the dative verbs in English. The following examples illustrate the alternation that occurs in Moroccan between sentences in which the preposition \( l^- \) occurs, and those in which it is absent.

(75) a. \( \epsilon ti \tilde{ti} \text{ lektab.} \)
gave-lsg-to-3sgm the-book
'I gave (to) him the book.'

b. \( \epsilon ti tu \text{ lektab.} \)
gave-lsg-3sgm the-book
'I gave him the book.'

c. \( \epsilon ti t \text{ lektab } \text{lmu\text{	extendash}hend.} \)
gave-lsg the-book to-Mohand
'I gave the book to Mohand.'

d. *\( \epsilon ti t \text{ mu\text{	extendash}hend lektab.} \)
gave-lsg Mohand the-book
'I gave Mohand the book.'

\*\( \epsilon ti t \text{ lektab mu\text{	extendash}hend.} \)
gave-lsg the-book Mohand
'I gave the book Mohand.'
(76) a. *werraliha lektab.
    showed(3sgm)-to-3sgf the-book
    'He showed (to) her the book.'

    b. werraha lektab.
    showed(3sgm)-3sgf the-book
    'He showed her the book.'

    c. werra lektab 1nažat.
    showed(3sgm) the-book to-Najat
    'He showed the book to Najat.'

    d. *werra nažat lektab.
    showed(3sgm) Najat the-book
    'He showed Najat the book.'

(77) a. žatihi zwina.
    came-3sgf-to-3sgm beautiful
    'She struck tlim as beautiful.'

    b. žatu zwina.
    came-3sgf-3sgm beautiful
    'She struck him as beautiful.'

    c. žat 1muḥend zwina.
    came-3sgf to-Mohand beautiful
    'She struck Mohand as beautiful.'

    d. *žat muḥend zwina.
    came-3sgf Mohand beautiful

(78) a. žalihi nmmel.
    came(3sgm)-to-3sgm the-ants
    'The ants came to him.'

    b. žah nmmel.
    came(3sgm)-3sgm the-ants
    *The ants came him.

    c. ža nmmel 1muḥend.
    came(3sgm)the-ants to-Mohand
    'The ants came to Mohand.'
In the (a) sentences in (75) through (79) above, the PP suffix with
the preposition leccion appears, and in the (b) sentences the leccion has disappeared,
and its object appears to be the verb's object. If the verb was already
transitive, as in (75) and (76), the verb's original object appears to be a second object. The (c) and (d) sentences above show that when the prepo-
sitional object is a lexical NP, the preposition is obligatory. On the
contrary, when the PP is pronominal (AF3), the (b) sentences, where the
preposition does not appear, are the normal unmarked form, and are preferable
to the (a) sentences, which are rarely used.

It might appear that some sort of dative rule is involved in the
alternations above. A dative rule could be formulated as follows:
(80) Dative lexical rule

\[
\begin{align*}
\{ & (OBL_{GO}) \\
\{ & (OBL_{GO} \quad EXP) \\
\{ & (OBL \quad OBJ) \\
\{ & (OBL \quad OBJ \quad EXP) \\
\} & \leftrightarrow (OBJ) \\
\} & \leftrightarrow (OBJ2)
\end{align*}
\]

Condition: The oblique argument is the affix AF₂.

Rule (80) is an operation on lexical forms that states that a pronominal oblique affix alternates with an OBJ argument, while an OBJ is to be associated with an OBJ2. This rule relates the second lexical form for the verb ᵇta 'give' to the first, in the example below.

(81) ᵇta : V, ↑PRED= '(ᵍTA<(SUBJ)(OBJ)(OBL_GO OBJ)>'

↑PRED= '(ᵍTA<(SUBJ)(OBJ2)(OBJ)>'

The two lexical forms given in (81) would then be used to derive sentences (75a) and (75b).

A dative rule is not, however, motivated as an explanation of the object suffix-prepositional suffix alternation in Moroccan. Such a rule, as stated above, would mean that when a preposition appears, the verb has an oblique object, and when the preposition does not appear, the verb has a direct object. The fact is, however, that in Moroccan the grammatical relations remain the same whether or not the preposition occurs; in both cases the suffix represents an oblique object, not a direct object.

In English the Dative rule does affect grammatical relations. The
NP Diane in the following (a) sentence functions as an object with respect to rules such as Passive ((82b)), which makes an object a subject.

(82) a. Bob gave Diane the book.
     b. Diane was given the book by Bob.

In Moroccan, however, rules that affect objects do not affect certain object suffixes, those (among others; see Chapter III) which are not in fact objects, but oblique objects. Such rules include question formation, relativization, and clefting.

Question formation, relativization, and clefting of an object that is subjacent to the head leaves a gap in Moroccan, as shown in (83) below. 13

(Since the facts are the same for all three constructions mentioned here, as the same operation is involved in the interpretation of all three, I will illustrate examples using only question formation as a representative of this class of constructions.) If an object is more deeply embedded, even one clause down, a pronominal suffix appears in place of the questioned item ((84)).

(83) a. țeftu ftalterţ ā.
saw-lsg-3sgm in-Talterga
     'I saw him in Talterga.'

13 Harrell (1962:164) states that in certain constructions a suffix rather than a gap is possible, but less common. He cites the following example:

țerbț lmaganə elli nsitiha feţdar.
found-lsg the-watch that forgot-2sg-3sgf in-the-house
'I found the watch that you forgot (it) in the house.'
b. *škun elli šefṭi חבר שָּׁלֶּמֶר?
who that saw-2sg in-רתגא
*Who did you see in Talterga?

c. *škun elli _EOL כר שָּׁלֶּמֶר?
who that saw-2sg-3sgm in-רתגא
*Who did you see him in Talterga?

(84) a. galt ʰbelli ʾšaftu ʾפֶּפֶּרּוּ.
said-3sgf that saw-3sgf-3sgm in-סַפְרוּא
'She said that she saw him in Sefrou.'

b. *škun elli ʾgalt ʰbelli ʾšaft ʾפֶּפֶּרּוּ?
who that said-3sgf that saw-3sgf in-Sefrou
*Who did she say that she saw in Sefrou?

c. *škun elli ʾgalt ʰbelli ʾšaftu ʾפֶּפֶּרּוּ?
who that said-3sgf that saw-3sgf-3sgm in-Sefrou
*Who did she say that she saw him in Sefrou?

In (83b) a gap occurs in place of the questioned item, and the sentence is grammatical. When a suffix appears in place of the questioned object, as in (83c), the sentence is ill-formed. On the other hand, when an object occurs in an embedded clause, an object suffix must appear in its place when it is questioned, as shown by sentences (84b) and (84c).

A suffix is obligatory in two other questioned environments: when the questioned NP is the object of a preposition, or when it is a possessor. These facts are illustrated in (85) and (86) below.

(85) a. ʾeqelt ʾela ʾdak ʾEFRאֶפל.
remembered-1sg that the-man
'I remember that man.'

b. *škun elli ʾeqelti ʾela?
who that remembered-2sg
*Who do you remember?
c. ṣkun elli eqelti elih?
   who that remembered-2sg-3sgm
   *Who do you remember him?

d. elli eqelti?
   on-who remembered-2sg
   'Who do you remember?'

(86) a. ṣeft ṣu mhend ṣeфru.
   saw-1sg mother Mohand in-Sefrou
   'I saw Mohand's mother in Sefrou.'

b. *ṣkun elli ṣefti ṣu ṣeфru?
   who that saw-2sg mother in-Sefrou
   *Who did you see mother in Sefrou?

c. ṣkun elli ṣefti ṣu ṣeфru?
   who that saw-2sg mother-3sgm in-Sefrou
   'Whose mother did you see in Sefrou?'

d. ṣu men elli ṣefti ṣeфru?
   mother whose that saw-2sg in-Sefrou
   'Whose mother did you see in Sefrou?'

When a prepositional object is questioned, as in (85), a suffix must appear with the preposition, just as a questioned possessor must also leave a pronominal suffix in its place, as shown in (86). The (d) sentences above represent an alternative (and more usual) form of questioning prepositional objects and possessors.

If PP and NP are considered bounding nodes in Moroccan, then the generalization involved with question formation, relativization, and clefting is that a gap only occurs when it is subjacent to the fronted position, and COMP-to-COMP movement is not possible in these cases.

If the object suffixes in the (b) sentences of (75) through (79) do indeed function as objects, then they would be expected to leave a gap when
questioned, as did the object in (83b). The fact is, however, that these object suffixes do not question with a gap as normal objects do, but rather a suffix must appear in their place when they are questioned (or relativized or clefted). These facts are illustrated in (87) through (89) below.

(87) a. ęτitu lektab.
gave-lsg-3sgm the-book
'I gave him the book.'

b. *škun elli ęτiti lektab?
who that gave-2sg the-book
*Who did you give the book?

c. škun elli ęτitih lektab?
who that gave-2ag-3sgm the-book
'Who did you give (him) the book?'

(88) a. werritu lektab.
showed-lsg-3sgm the-book
'I showed him the book.'

b. *škun elli werriti lektab?
who that showed-2sg the-book
*Who did you show the book?

c. škun elli werritih lektab?
who that showed-2ag-3sgm the-book
'Who did you show (him) the book?'

(89) a. żah nnumel.
came(3sgm)-3sgm the-ants
'The ants came over to him.'

b. *škun elli ża nnumel?
who that came(3sgm) the-ants
'Who did the ants come over to?'

c. škun elli żah nnumel?
who that came(3sgm)-3sgm the-ants
*Who did the ants come over to him?
In each case of (87) through (89) above, the questioned object leaves an obligatory pronominal suffix in its place. Normal objects, as in (83), do not leave a pronominal suffix, but rather an obligatory gap occurs in their within-clause position.

The "objects" in (87) through (89), then, do not function as objects with respect to question formation. The reason for this apparently anomalous behavior is that, though they have the shape of direct object suffixes, the "dative" objects are not, in fact, objects, but are functionally oblique objects. Oblique objects do not question with a gap, but with a pronominal suffix, just as do the "objects" in (87) through (89). These "objects" are, then, functional oblique objects in which the preposition is not phonologically realized, and the omission of the preposition does not affect the grammatical relations involved.

I assume that the "dative" alternation is simply the result of a morphological rule that (optionally) deletes the preposition 1- prior to lexical insertion. This deletion is only possible when 1- occurs in an AF3 which directly follows a V (and not an AF2). Only morphological, not functional, material is deleted by this rule, and thus the f-structure of -lih 'to him,' for example, will be identical to that of -u/-h 'to' him,' after deletion of the preposition 1-.

At this point I have not, unfortunately, determined a satisfactory way of marking the dative verbs in the lexicon to specify that they allow the morphological rule of 1- deletion.

The lexical formation of a Moroccan verb with its affixes can thus be represented by the schema in (90) below.
Note: a through i are variables ranging over the values of NUM, PERS, and GEND, and X is a variable ranging over the possible PREDs for a V.

Though the verbal affixes AF₂ and AF₃ and the preposition 1- are all optional, certain combinations of the affixes do not occur in Moroccan, as the following examples indicate.

(91) a. ěṭitu lebrawn._
gave-lsg-3sgm the-letters
'I gave him the letters.'

b. *ěṭithum._
gave-lsg-3sgm-3pl
'I gave him them.'

c. *ěṭithumu._
gave-lsg-3pl-3sgm
*I gave them him.

d. ěṭithumlih._
gave-lsg-3pl-to-3sgm
'I gave them to him.'
(91) demonstrates that an AF$_2$ and a prepositionless AF$_3$ may not occur together in any order; (91b) is ungrammatical because, contrary to the specifications of (90), the AF$_3$ precedes the AF$_2$. (91c) is ill-formed because the 1- deletion rule is only applicable when the AF$_3$ immediately follows the V; in (91c) the AF$_3$ follows an AF$_2$, and so the deletion that has taken place in this example is not allowed. Only (91d) is a well-formed sentence, where an object affix AF$_2$ occurs preceding a prepositional affix AF$_3$, and the preposition in AF$_3$ has not been deleted.

1.2.4 Equational (verbless) sentences

Simple transitive and intransitive sentences in Moroccan can be produced using the lexical entries and phrase-structure rules provided in this chapter, along with the principles of well-formed functional structures. Sentences in which no overt subject NP appears are accounted for, as well as those with no object NP; in those cases, pronominal affixes function as the arguments of the verb. Thus, a sentence in Moroccan may consist of just one verb with its affixes, the subject markers being obligatory on every verb.

In addition to transitive and intransitive sentences, Moroccan also allows sentences in which no verb at all is present in the constituent structure. These sentences are present tense equational sentences, containing a subject and a complement; the present tense copula is never phonologically realized. Sentences such as (92) through (94) below illustrate the type of equational sentence that occurs in Moroccan.

(92) a. lweld zwin.
   the-boy beautiful(m)
   'The boy is beautiful.'
b. lbent zwina.
   the-girl beautiful-f
   'The girl is beautiful.'

c. ddrari zwinin.
   the-children beautiful-pl
   'The children are beautiful.'

(93) a. xuya muğewwiḥ.
    brother-lsg photographer(m)
    'My brother is a photographer.'

b. xWti terżmana.
    sister-lsg translator-f
    'My sister is a translator.'

c. duk rržal muḥamyin.
    those the-men lawyer-pl
    'Those men are lawyers.'

(94) a. xuya fešḏaḥ.
    brother-lsg in-the-house
    'My brother is in the house.'

b. xWti fbariz.
    sister-lsg in-Paris
    'My sister is in Paris.'

c. lwalidin fežžamiḥa.
    the-parents in-the-university
    'My parents are at the university.'

In (92) above, an adjectival complement is predicated of each subject NP. In (93) the complement is an NP, while in (94) the subject NPs are modified by a PP.

There are at least two possible ways of analyzing the above sentences; one possibility is to assume that present tense equational sentences have a functional verb that does not appear in c-structure, and the other is to
assume that they are verbless in f-structure as well as c-structure.

I will first examine the latter alternative. If these sentences are verbless in both c-structure and f-structure, then the (unannotated) P-S rule would be (95):

\[(95) \quad S \rightarrow NP \quad XP\]

XP refers to a phrasal category in which X can be N, A, or P.

The assignment of functional annotations to the rule in (95) gives rule (96) below.

\[(96) \quad S \rightarrow NP \quad XP \quad \uparrow \text{SUBJ} = \downarrow \quad \downarrow \text{TENSE} = \text{PRESENT}\]

The rule in (96) states that the NP is the subject of the sentence, and that the XP is the predicate. This rule, plus lexical entries, would produce the following f-structure for sentence (92a), repeated below for convenience. The lexical entry for the adjective zwin is given in (97b).

\[(92a) \quad \text{lwe} l \quad \text{zwin}. \quad \text{The boy (is) beautiful.}'

\[(97) \quad \text{a.} \begin{array}{c|c|c}
\text{SUBJ} & \text{PRED} & \text{NUM} \\
\hline
\text{PRED} & \text{LWELD}' & \text{SG} \\
\text{PERS} & 3 & \text{MASC} \\
\text{TENSE} & \text{PRESENT} &
\end{array}
\quad \text{b.} \quad \text{zwin} : \text{A}, \uparrow \text{PRED} = 'ZWIN<(SUBJ)>'\]
The lexical entry in (97b) states that the adjective zwin subcategorizes for a SUBJ argument, and by rule (96) its SUBJ is the NP lweld.

(97a) is a well-formed f-structure; adopting this analysis of the sentences in (92) through (94), however, would mean that their f-structures and those of their corresponding past tense sentences would be very different.

In Moroccan, as mentioned above, there is no present tense form of the copula verb kan 'be.' The past tense does, however, exist, in the perfect form, used to indicate a state which existed in the past but no longer exists in the present. Therefore, the past tense of the sentence muḥend twil 'Mohand is tall,' for example, would only make sense if Mohand were no longer tall (i.e., he became short). Since such a transformation is unlikely, the past tense sentence kan muḥend twil 'Mohand was tall' would not normally be used.

The sentences in (92) through (94), however, do have past tense forms that make sense. These forms are given in (98) through (100) below.

(98) a. kan lweld zwin.
    was(3sgm) the-boy beautiful
    'The boy was beautiful.'

b. kant lbent zwina.
    was-3sgf the-girl beautiful-f
    'The girl was beautiful.'

c. kanu ddrar1 zwinin.
    was-3pl the-children beautiful
    'The children were beautiful.'
(99)  a.  kan  xuya  muşewwiŋ.
    was(3sgm) brother-lsg photographer(m)
    'My brother was a photographer.'

    b.  kant  x'⁵ti  terţmana.
    was-3sgf sister-lsg translator-f
    'My sister was a translator.'

    c.  kanu  duk  rržal  muḥamyīn.
    was-3pl those the-men lawyer-pl
    'Those men were lawyers.'

(100) a.  kan  xuya  feḏdaŋ.
    was(3sgm) brother-lsg in-the-house
    'My brother was in the house.'

    b.  kant  x'⁵ti  fbariz.
    was-3sgf sister-lsg in-Paris
    'My sister was in Paris.'

    c.  kanu  lwalidin  fežamīca.
    was-3pl the-parents in-the-university
    'My parents were in the university.'

The P-S rule for introducing the past tense sentences in (98) through (100) above is given in (101) below.14

\[(101) \quad S \rightarrow V \quad NP \quad XP \]
\[\quad \uparrow T\downarrow \quad \uparrow \text{SUBJ} \downarrow \quad \uparrow \text{XCOMP} \downarrow \]

The above rule, along with the lexical entries for the lexical items in (98a), will produce the following f-structure for that sentence. (I use the feature TENSE rather than ASPECT in these f-structures; ASPECT is not involved in the interpretation of equational sentences, as kan does exist in the imperfect, but not in the present tense.)

---

14 This rule will be modified in Chapter IV.
The lexical entry for kan 'be' in (102a) includes the equation
\[ \text{↑SUBJ} = \text{↑XCOMP SUBJ}. \]
This equation is a control equation. It is derived from the Lexical Rule of Functional Control (Bresnan (1982a:322)). This rule, stated below, stipulates which element in a sentence may be the controller of an XCOMP (an open function) which itself subcategorizes for a SUBJ.\(^{15}\)

\[ \text{(103) Lexical Rule of Functional Control} \]

Let \( L \) be a lexical form and \( F_L \) its grammatical function assignment. If \( \text{XCOMP} \notin F_L \), add to the lexical entry of \( L \):

\[
\begin{align*}
\text{(↑OBJ2)} &= \text{(↑XCOMP SUBJ)} \text{ if OBJ2} \notin F_L; \text{ otherwise:} \\
\text{(↑OBJ)} &= \text{(↑XCOMP SUBJ)} \text{ if OBJ} \notin F_L; \text{ otherwise:} \\
\text{(↑SUBJ)} &= \text{(↑XCOMP SUBJ)}. 
\end{align*}
\]

\(^{15}\) XCOMPs are referred to in GB as "small clauses"; see Chomsky (1981).
In the functional structure of (102b), the SUBJ of kan has been coindexed with the SUBJ of zwil; this marking indicates the effect of the control equation, that the SUBJ of zwil, the XCOMP, is identified with the SUBJ of the verb kan. This identification means that the f-structures in question are identical in all features, including functional markings.

Functional control involves identifying the non-overt (in c-structure) subject of an XCOMP, which is an argument of a verb, with an item in the sentence with which it has identity of all features. An XCOMP does not have a structural subject, but it does have a functional subject, whose controller is determined by the lexical item which subcategorizes for the XCOMP argument. The lexical rule of functional control is a redundancy rule that adds a control equation to the lexical entries of certain verbs, unless they already have a control equation in their lexical entry. Thus, the verb promise in English, as it is irregular with respect to control facts, is marked in the lexicon with the equation ⊤SUBJ=⊤XCOMP SUBJ, even though it has an object. In the sentence "I promised Mary to go," the object Mary is not controlling the XCOMP SUBJ, contrary to the stipulation of the Lexical Rule of Functional Control. It is the subject of the verb promise that controls its complement.

Returning to Moroccan, the two f-structures (97a) and (102b), present and past tense equational sentences, appear to be completely different. The two f-structures are repeated below for convenience as (104) and (105), respectively.
In (104), the AP is the head of the S, providing the PRED, whereas in (105), the past tense sentence, the AP is an XCOMP, a complement to the verbal predicate kan. Since the difference in meaning between the present tense sentences in (92) through (94) and their past tense counterparts in (98) through (100) is merely one of tense, the two sets of sentences should not have radically different f-structures. F-structure is the part of the grammar in which grammatical relations are represented, and the relation between boy and beautiful is basically the same in (92) as it is in (98). Since, therefore, there need not be a one-to-one correspondence between constituents in c-structure and functions in f-structure, it would be entirely possible for the f-structures of the sentences in (92) through (94) to contain a verbal PRED, while their c-structures do not.

This possible asymmetry between f-structure and c-structure is the basis of one analysis for the "verbless" sentences in (92) through (94). The rule given in (106) below, which includes only a functional PRED, will generate these sentences.
Since the equation introducing the PRED value in the above rule is not attached to a labeled node, it will not appear in c-structure, and the sentence will be phonologically verbless. In f-structure, however, the PRED kan will appear, and thus the f-structures of (92) through (94) will be exactly like those of (98) through (100), as shown below (except for the feature TENSE).

\[
\begin{align*}
(107) & \quad \text{SUBJ} & \begin{bmatrix}
\text{PRED 'LWELD'} \\
\text{NUM SG} \\
\text{PERS 3} \\
\text{GEND MASC}
\end{bmatrix} \\
& \quad \text{TENSE} & \text{PRESENT} \\
& \quad \text{XCOMP} & \begin{bmatrix}
\text{SUBJ} & \begin{bmatrix}
\text{PRED 'ZWIN< (SUBJ)>'}
\end{bmatrix}
\end{bmatrix} \\
& & \begin{bmatrix}
\text{PRED 'KAN< (SUBJ) (XCOMP)> '}
\end{bmatrix}
\end{align*}
\]

Since kan takes an XCOMP, and its only other argument is the SUBJ function, the lexical rule of function 1 control will coindex the subject of kan and the subject of its XCOMP.

Thus, rule (101) will generate past tense equational sentences, while rule (106) produces their present tense counterparts. Sentences generated by rule (106) are verbless in c-structure, but have a functional PRED in f-structure. Sentences generated by rule (101), on the other hand, include
a verb in both c-structure and f-structure. Both rules, however, will produce f-structures differing only in the value of the feature TENSE, thereby preserving the symmetry between past and present tense equational sentences.

Though the above analysis might seem appealing, I will reject it in favor of the analysis represented by rule (96) and the f-structure (97a).

One problem with the analysis using rule (106) is that it involves introducing the predicate kan into the f-structure through a P-S rule. Bresnan (1982a) has proposed a constraint on the source of semantically meaningful entities in grammar, which would rule out an analysis based on rule (106). The constraint allows semantically meaningful elements to be introduced only in the lexicon; any analysis, therefore, which proposes introducing semantically meaningful material in levels of the grammar other than the lexicon would be incompatible with the proposed constraint.

The status of the verb kan 'be' is another factor that bears on the choice of analysis of equational sentences. The copula verb in many languages is relatively semantically meaningless, merely bearing the identity relation meaning (cf. Halvorsen (to appear) and references cited therein). If the verb kan in Moroccan past tense equational sentences is a verb of this type, then these sentences would have basically the same semantic interpretation as the present tense verbless equational sentences. That is, if the predicate kan has little semantic content and merely functions to identify a particular state of affairs, it thereby has basically the same meaning as its complement; the semantic interpretation of sentences with or without kan will thus be the same as long as the grammatical relations in the two
f-structures are the same.

In fact, an examination of (104) and (105) reveals that the grammatical relations of (104) are contained as a subset (the XCOMP f-structure) of (105). The two f-structures are given below in (109) and (110), using the modified lexical entry for kan given in (108).

(108)  \text{kan} : V, \uparrow \text{PRED} = 'KAN<(XCOMP)>'(\text{SUBJ})
\uparrow \text{SUBJ}=\uparrow \text{XCOMP} \text{ SUBJ}

(109) \begin{align*}
\text{SUBJ} & \begin{bmatrix}
\text{PRED} & 'LWELD' \\
\text{NUM} & \text{SG} \\
\text{PERS} & 3 \\
\text{GEND} & \text{MASC}
\end{bmatrix} \\
\text{PRED} & 'ZWIN<(\text{SUBJ})>' \\
\text{TENSE} & \text{PRESENT}
\end{align*}

(110) \begin{align*}
\text{SUBJ} & \begin{bmatrix}
\text{PRED} & 'LWELD' \\
\text{NUM} & \text{SG} \\
\text{PERS} & 3 \\
\text{GEND} & \text{MASC}
\end{bmatrix} \\
\text{XCOMP} & \begin{bmatrix}
\text{SUBJ} & \begin{bmatrix}
\end{bmatrix} \\
\text{PRED} & 'ZWIN<(\text{SUBJ})>' \\
\text{TENSE} & \text{PAST}
\end{bmatrix}
\end{align*}

The lexical entry for \text{kan} has been modified in (108) above. The verb \text{kan}, as an operator on a state of affairs, exerts selectional restrictions only on its XCOMP; its SUBJ argument is, therefore, non-thematic (see Chapter III for a discussion of non-thematic arguments).

Assuming \text{kan} to have the identity relation meaning, then, the two above f-structures are not as different as they might at first appear, as the grammatical relations are basically the same in each case. Any difference in semantic interpretation may be due to the scope of the tense feature; in (109) the tense feature is on the same level in f-structure as the subject of the adjectival PRED, and in (110) the tense feature is on the same level
as the subject of the PRED \textit{kan}.

I therefore assume that present tense equational sentences in Moroccan are generated by rule (96), rather than by rule (106), and that they have f-structures of the type of (109) rather than (110).

Moroccan, then, has various types of simple sentences: those consisting of just a verb, others having a verb and its overt arguments, and still others containing no overt verb. The P-S rules for generating simple sentences in Moroccan are repeated below in (111).

\begin{align*}
\text{(111) a. } S & \to V (PP) (NP) (NP) PP^* \\
& \uparrow=\downarrow \{ \uparrow \text{OBL}_0=\downarrow \} \uparrow \text{SUBJ}=\downarrow \uparrow \text{OBJ}=\downarrow \{ \uparrow \text{OBL}_0 \text{ OBJ}=\downarrow \} \\
& \uparrow \text{PRED}=c \text{ pron} \\
\text{b. } S & \to V \text{ NP XP} \\
& \uparrow=\downarrow \uparrow \text{SUBJ}=\downarrow \uparrow \text{XCOMP}=\downarrow \\
\text{c. } S & \to \text{ NP XP} \\
& \uparrow \text{SUBJ}=\downarrow \uparrow=\downarrow \\
& \uparrow \text{TENSE}=c \text{ PRESENT} \\
\end{align*}

The rules (111b) and (111c) generate the equational sentences in Moroccan.

The next chapter will provide an introduction to complex sentences in Moroccan, sentences in which more than one verb is involved.
The last chapter provided an introduction to sentences in which only one (or no) verb occurred. The present chapter constitutes a discussion of complex sentences in Moroccan, those in which more than one verb appears.

Since, as seen in Chapter 1, an obligatory subject affix on a verb functions as a pronominal subject when no lexical subject occurs, and since a verb itself consists of a verb root together with a subject affix, I assume that any verb may constitute a sentence. Thus, I will refer to complements which consist of (at least) a verb as sentential, not verbal, complements. A sentential complement is one of the closed complements (COMP), those complements which have an internal subject, as opposed to the closed function XCOMP (mentioned in Chapter I), which has no internal subject.

Verbs in Moroccan which subcategorize for a sentential complement differ as to whether or not they take a complementizer, and as to the tense selected in their complement verb. Those complements in which no complementizer occurs have restricted reference for their PRO subject; the SCOMP SUBJ must be identified with one of the arguments of the matrix verb. Those complements which do include a complementizer, however, allow the possibility of an extra-sentential antecedent for their subjects.

### 2.1 No-complementizer COMPs

Verbs that take COMPs with no complementizer usually select the imperfect or continuative in their complement verb. The verb *kan* 'be,' however, is an exception. It selects the perfect, continuative, future,
and participial form in its complement verb. The verb kan with a COMP is one of the verbs referred to in Harrell (1962) as "auxiliary verbs."

Its use is illustrated below in (1).

(1) a. kan ḥisel qbel ma yziw. (perfect complement)
    was(3sgm) arrived(3sgm) before 3pl-come
    'He had arrived before they came.'

b. kan kayfiq bekri. (continuative complement)
    was(3sgm) CONT-3sgm-awake early
    'He used to wake up early.'

c. kan ẓadi yfiq bekri. (future complement)
    was(3sgm) FUT 3sgm-awake early
    'He was going to wake up early.'

d. kan gals mellī żaw. (participial complement)
    was(3sgm) sitting(m) when came-3pl
    'He was sitting when they came.'

In (1a), the complement verb ḥisel is in the perfect; in (1b) the complement is in the continuative, in (1c) it is in the future, and in (1d) the complement verb is an active participle.

2.1.1 Participles

Active participles in Moroccan usually have the consonantal pattern C₁aC₂C₃ for regular triliteral (three-consonantal root) verbs. The active participles do not have the same subject affixes as tensed verbs. In fact, the participles have adjectival affixes, which agree in number and gender with their subject. As seen in Chapter I (Section 1.2.4), masculine adjectives have no marker for gender, while the feminine adjectives have an -a suffix; plural is marked in adjectives by the suffix -in. Since adjectives agree with their subjects in gender and
number, the lexical entries of the adjectival affixes will include information about the subject of the adjective in question. The lexical entries for the adjectival suffixes are given in (2) below.

(2) a. \( -a \) : \( AF_4 \), \( \uparrow \text{SUBJ NUM=SG} \)
\( \uparrow \text{SUBJ GEND=FEM} \)

b. \( -\text{in} \) : \( AF_4 \), \( \uparrow \text{SUBJ NUM=PL} \)

The feminine adjective zwina 'beautiful' is therefore formed in the lexicon as follows.

(3)

\begin{align*}
\text{c-structure:} & \\
\text{zwina} & \\
\downarrow & \\
\text{\( \uparrow=\downarrow \)} & \\
\text{A} & \\
\downarrow & \\
\text{zwina} & \\
\downarrow & \\
\text{\( \uparrow \text{PRED='ZWIN<(SUBJ)>'} \)} & \\
\text{\( \uparrow \text{SUBJ GEND=FEM} \)} & \\
\text{\( \uparrow \text{SUBJ NUM=SG} \)} & \\
\text{\( \uparrow \text{SUBJ GEND=FEM} \)} & \\
\text{\( \uparrow \text{SUBJ NUM=SG} \)}
\end{align*}

The features of the affix will become features of the entire AP by the process illustrated above, and thus a sentence such as (4a) below will have the f-structure in (4b).

(4) a. lbent zwina.
\( \text{th\&-girl beautiful-f} \)
'The girl is beautiful.'

b. \[
\begin{array}{c}
\text{SUBJ} \\
\text{PRED 'LBENT'} \\
\text{NUM SG} \\
\text{PERS 3} \\
\text{GEND FEM} \\
\text{PRED 'ZWIN<(SUBJ)>'} \\
\text{TENSE PRESENT}
\end{array}
\]
Since both the affix _-a and the NP _lbent_ have the feature values NUM=SG and GEND=FEM, the f-structure in (4b) is well-formed. An ill-formed f-structure results, however, if the features of the subject do not match those of the adjective; such an ill-formed example is illustrated in (5) below.

(5) a. *lbent zwinin.
the-girl beautiful-pl

b. 

<table>
<thead>
<tr>
<th>SUBJ</th>
<th>PRED 'LBENT'</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUM</td>
<td>SG</td>
</tr>
<tr>
<td>NUM</td>
<td>PL</td>
</tr>
<tr>
<td>GEND</td>
<td>FEM</td>
</tr>
<tr>
<td>PERS</td>
<td>3</td>
</tr>
<tr>
<td>PRED</td>
<td>'ZWIN&lt;(SUBJ)&gt;'</td>
</tr>
<tr>
<td>TENSE</td>
<td>PRESENT</td>
</tr>
</tbody>
</table>

In the f-structure in (5b), the SUBJ f-structure contains two different values for the feature NUM—one given by the lexical entry for _lbent_, and the other given by the affix _-in_ on the predicate adjective. The consistency condition will therefore rule out the f-structure in (5b) as ill-formed.

Active participles have the adjectival affixes AF₄ rather than the verbal subject affixes AF₁. They behave, however, as verbs, taking the object affixes AF₂ (see (7a) below), and occurring with the same argument structure as their corresponding tensed verbs. One lexical entry for the participle _mayb_ 'be bringing (m)' is given in (6a) below, with its corresponding tensed counterpart given in (6b). Example sentences with each are given in (7).
(6) a. \( \ddot{z}ayb \) : V, ↑PRED='\( \ddot{z}AB<(\text{SUBJ})(\text{OBJ})> \)'
   ↑PARTICIPLE=ACTIVE

   b. \( z\dot{ab} \) : V, ↑PRED='\( \ddot{z}AB<(\text{SUBJ})(\text{OBJ})> \)'

   (7) a. \( \ddot{z}aybhum \) mu\( \ddot{h} \)end.
   bringing(m)-3pl Mohand
   'Mohand is bringing them.'

   b. \( z\dot{ab}hum \) mub\( \ddot{h} \)end.
   brought(3sgm)-3pl Mohand
   'Mohand brought them.'

   The active participle in (6a) has the same PRED value as the tensed verb
   \( \ddot{z}ab \ 'he brought,' \) and thus its argument structure is the same as that of
   its tensed counterpart.

   Since a participle can stand alone as a sentence, i.e., with no
   lexical subject, as in (8) below, it would appear that the affixes \( AF_4 \)
   function as pronominal subjects when no lexical subject NPs are present
   in a sentence, just as do the subject affixes \( AF_1 \).

   (8) a. \( \ddot{z}ayy. \)
   coming(m)
   'I (m) am / you (m) are / he is coming.'

   b. \( \ddot{z}ayb\dot{inh}um. \)
   bringing-pl-3pl
   'We are / you (pl) are / they are bringing them.'

   c. c\( \ddot{a}\ddot{r} \)fa bell\( \ddot{i} \) m\( \ddot{h} \)aw.
   knowing-f that went-3pl
   'I (f) / you (f) / she knows that they left.'

   d. ba\( \ddot{y} \)ya nem\( \ddot{s} \)i.
   wanting-f lsg-go
   'I (f) want to go.'
In each case of (8) above, no lexical subject appears, and thus the affixes on the participles must be functioning as the subject of the participial verb. However, the affixes AF₄ provide no PRED value for the subject, only its GEND and NUM feature values. In order, therefore, for the adjectival affixes AF₄ to function as pronominal subjects for participles, they must specify that the SUBJ PRED='PRO.' This equation is added as an optional feature to the lexical entries of the affixes AF₄, as shown in (9) below.

(9) a. -ä : AF₄, (↑SUBJ PRED='PRO')
↑SUBJ NUM=SG
↑SUBJ GEND=FEM

b. -in : AF₄, (↑SUBJ PRED='PRO')
↑SUBJ NUM=PL

Conditions on the well-formedness of f-structures will prevent the optional feature from being chosen in an inappropriate environment, i.e., one in which a lexical subject occurs. In that case, the optional equation in (9) on AF₄ must not be chosen; if it is chosen, the following inconsistent f-structure will result.

(10) a. ٍayy  mu hend.
coming(m) Mohand
'Mohand is coming.'

b. [SUBJ [PRED 'MOHAND'
PRED 'PRO'
NUM SG
PERS 3
[GEND MASC]]
PRED 'َأ<(SUBJ)>'
PARTICIPLE ACTIVE
In (10b) the NUM and GEND features from the subject NP and the affix $A_{f4}$ match, but the SUBJ f-structure includes two different values for the PRED feature. The f-structure (10b) is thus ill-formed, violating the consistency condition.

When the affixes $A_{f4}$ are affixed to participles, which have the possibility of no lexical subject, then the SUBJ PRED=$'PRO'$ value is chosen for the affix if no lexical subject appears, as shown in (11) below.

(11) a. żayya.
      coming-f
      'I (f) am / you (f) are / she is coming.'

b.          [ PRED 'PRO' ]
  [ SUBJ [ NUM SG ]
    [ GEND FEM ]
    PRED 'żA<(SUBJ)>'
  PARTICIPLE ACTIVE

The f-structure in (11b) is well-formed, as the SUBJ has a PRED value, none of the feature values clash, and all the arguments subcategorized by the verb ża appear in the f-structure.

Since the participles are verbs, they would be expected to take closed (propositional) complements, as in fact they do. Examples of propositional complements of participles were given in (8c) and (8d), and further examples are given in (12) below.

(12) a. gals kanxemmeme.
      sitting(m) CONT-lsg-think
      'I'm sitting thinking.'

b. baγya nak'el waḥd etteffaḥa.
      wanting-f lsg-eat one the-apple
      'I want to eat an apple.'
2.1.2 Verbs that subcategorize for COMP

The participial verb form is selected by verbs, just as are the
inflected verb tenses. The verb *kan*, seen above, takes a participial
sentential complement, among other complement types, as does the verb
*bqa* 'remain, keep on,' illustrated below.

(13) a. bqit galaa feg esseddari.
   remained-lsg sitting-f on the-sofa
   'I remained / kept on sitting on the sofa.'

b. bqa waqf.
   remained(3sgm) standing(m)
   'He remained / kept on standing.'

In each of the sentences in (13), the complement to the matrix verb is a
participle. The verb *bqa* also takes a continuative and sometimes imperfect
complement, and does not take a complementizer, as indicated in (14) below.

(14) a. bqit kaneqra / neqra betta nēest.
   remained-lsg CONT-lsg-read lsg-read until slept-lsg
   'I kept on reading until I fell asleep.'

b. *bqit belli / waq / yak ma kaneqra.
   remained-lsg that whether perhaps CONT-lsg-read

c. *bqit qfit, / yadi neqra.
   remained-lsg read-lsg FUT lsg-read
   (perfect) (future)

The verb *bdita* 'start, begin,' on the other hand, takes a continuative
complement, but not a participial one, nor does it take a complementizer.

(15) a. bdit kanemāi lessuq kull nhar.
   started-lsg CONT-lsg-go to-the-market every day
   'I started going to the market every day.'
b. *bdit  **bella** / waș  / yak mu kanemșî ləssuq.
started-lsg that whether perhaps CONT-lsg-go to-the-market

c. *bdit  **mət** / nemșî  / yadi nemșî / yadi  ləssuq.
started-lsg went-lsg lsg-go FUT lsg-go going(m) to-the-
(perfect) (imperfect) (future) (participle) market

The verb wella 'become, end up' also takes a continuative complement and no complementizer, as shown in (16) below.

(16) a. wellit  kanemșî  kull nhar lqafhum.
became-lsg CONT-lsg-go every day to-house-3pl
'I ended up going to their house every day.'

b. *wellit  **bella** / waș  / yak ma kanemșî lqafhum.
became-lsg that whether perhaps CONT-lsg-go to-house-3pl

c. *wellit  **mət** / nemșî  / yadi nemșî / yadi  lqafhum.
became-lsg went-lsg lsg-go FUT lsg-go going(m) to-house-3pl
(perfect) (imperfect) (future) (participle)

The following three verbs, bya 'want,' qder 'be able,' and xesq 'be necessary,' take only an imperfect complement verb, and no complementizer, as indicated in (17) through (19) below.

---

1 According to Harrell (1962), the dialect of the town of Fes regularly uses the imperfect as the complement to bda. My principal informant, however, who does not speak the Fes dialect, uses both the imperfect and the continuative in the complement of bda, but in two different senses:
(1) bda kayhâr. 'He started talking.'
(ii) bda yədâr. 'He started to talk (for the first time, e.g. a baby).' 

2 The active participle of the verb mşa 'go' is yadi; it, like other participles, takes the affixes AF: yadya 'I (f) / you (f) / she is going.'
(ii) yadyîn 'We are / you (pl) are / they are going.' The future marker yadi is invariable; it is not a verb, and never takes any affixes. The contracted form is frequently used instead of the full form yadi:
(iii) yadi nemşî 'I'm going to go.' = (iv) yannemşî.
In each case of (17) through (19), the (c) sentence has the complement verb in the imperfect, and the sentence is well-formed. The (b) sentences illustrate that these verbs do not select a complementizer, and the (c) sentences indicate that the only tense selected by these verbs in their complements is the imperfect.

The verb xesg in (19) takes an invariable third person singular
masculine subject affix (Ø) (rather like the "dummy" subject it in English), and it takes an obligatory object suffix which acts as the antecedent to the complement verb's PRO subject.

2.1.3 Obligatory anaphoric control

It might appear that the operation involved in the interpretation of the sentences in this chapter is functional control; as I will demonstrate directly, the control is obligatory, it involves agreement between controller and controller, and when a matrix object occurs it must control the complement subject. This last fact is reminiscent of the lexical rule of functional control, which involves a hierarchy of functional controllers (OBJ2, otherwise OBJ, otherwise SUBJ).

In the discussion that follows, however, I will provide evidence that the type of control involved in the sentences in this chapter is anaphoric, rather than functional, control. In certain well-defined cases the anaphoric control is obligatory; I thus propose a rule of obligatory anaphoric control for Moroccan. I will also demonstrate that certain properties of the control operation involved in the sentences in question are incompatible with functional control: an OBL may be the (obligatory) controller of a complement subject, and verbs of the same form permit both obligatory and arbitrary control. Arbitrary control refers to the possibility of an extra-sentential antecedent to a PRO subject; this type of control is a special case of anaphoric control, and is not possible with functional control.

If a COMP PRO subject is subject to obligatory anaphoric control, its set of possible antecedents is strictly limited. In each sentence seen so
far, except for those with xesq, the antecedent of the COMP PRO subject must be the subject of the matrix verb. The following examples illustrate this restriction.

(20) a. kan kayfiq bekri.
    was(3sgm) CONT-3sgm-awake early
    'He used to wake up early.'

   b. *kan katfiq / kanfiq / kayfiq bekri.
    was(3sgm) CONT-3sgf-awake CONT-lsg-awake CONT-3pl-awake early

(21) a. bqa kayxemmem.
    remained(3sgm) CONT-3sgm-think
    'He kept on thinking.' (Also means: 'He sat there thinking. ')

   b. *bqa katxemmem / kanxemmmu / kayxemmmu.
    remained(3sgm) CONT-3sgf-think CONT-lpl-think CONT-3pl-think

(22) a. yqder ymśi mēahum.
    3sgm-can 3sgm-go with-3pl
    'He can go with them.'

   b. *yqder temśi / nemśi / ymśiw mēahum.
    3sgm-can 3sgf-go 1sg-go 3pl-go with-3pl

In (20) through (22) above, when the subject of the COMP is not the same as the matrix subject, the sentences are ungrammatical. Since the COMP subjects are PRO, anaphoric (rather than functional) control is involved, and the Obviation Principle of Bresnan (1982a:331) predicts that the subject of the matrix clause will be the antecedent of the subject of the complement clause. The Obviation Principle is stated below.

(23) Obviation Principle

If P is the pronominal SUBJ of an obviative clause C, and A is a potential antecedent of P and is the SUBJ of the minimal clause
nucleus that properly contains C, then
a. P is bound to A if P is unexpressed and
b. P is not bound to A if P is expressed.  

I assume for the moment that the type of COMP discussed here, that
which can never include a complementizer, constitutes an obviative clause.
Since P in these COMPs is unexpressed, part (a) of the Obviation Principle
is the part relevant to the discussion of COMPs. To see how the Obviation
Principle predicts the antecedent of sentence (21a), consider the f-structure
in (24) below.

(21a) bqa kayxemmem. 'He kept on thinking.'

(24)

\[
\begin{array}{l}
\text{SUBJ} \quad [\text{PRED 'PRO'}} \quad \text{A, SUBJ of the minimal clause nucleus containing } C \\
\quad \quad \quad \left[ \begin{array}{l}
\text{NUM} \quad \text{SG} \\
\text{PERS} \quad 3 \\
\text{GEND} \quad \text{MASC} \\
\end{array} \right] \\
\end{array}
\]

\[
\begin{array}{l}
\text{PRED 'BQA<(SUBJ)(COMP)>'} \\
\text{COMP} \quad \text{SUBJ} \quad [\text{PRED 'PRO'}} \quad \text{P} \quad \text{Obviative clause C} \\
\quad \quad \quad \left[ \begin{array}{l}
\text{NUM} \quad \text{SG} \\
\text{PERS} \quad 3 \\
\text{GEND} \quad \text{MASC} \\
\end{array} \right] \\
\quad \quad \quad [\text{PRED 'XEMMEM<(SUBJ)>'}] \\
\text{ASPECT} \quad \text{PERFECT} \\
\end{array}
\]

The SUBJ features of both the matrix and COMP subjects are obtained from
the subject affixes on each verb. Since P and A are in the relation
defined by the Obviation Principle, P is bound to A, indicated by the
co-indexed SUBJ f-structures.

3 A clause nucleus consists of a PRED and its arguments, and must include
a SUBJ.
The ungrammatical (b) sentences in (20) through (22), however, must be ruled out. The Obviation Principle will not reject these sentences, as the conditions for its application are met. The f-structure for the ungrammatical sentence \(21b'\) is given in (25).

\(21b'\) *bqa kanxemmmu. *He kept on we were thinking.

\[
(25) \begin{array}{c}
\text{SUBJ} \\
\text{PRED 'PRO'} \\
\text{NUM SG} \\
\text{PERS 3} \\
\text{GEND MASC} \\
\text{PRED 'BQA<(SUBJ)(COMP)>'} \\
\text{ASPECT PERFECT} \\
\text{COMP} \\
\text{SUBJ} \\
\text{PRED 'PRO'} \\
\text{NUM PL} \\
\text{PERS 1} \\
\text{PRED 'XEMMEM<(SUBJ)>'}
\end{array}
\]

The two SUBJs in (25) are in the correct relation for application of the Obviation Principle, and therefore P is bound to A. Sentence \(21b'\) is, however, ungrammatical, as the features of the two SUBJs do not match.

A condition on binding in general, stated in (26) below, will rule out the ungrammatical (b) sentences in (20) through (22) above.

(26) All inherent features (as opposed to functional markings) of items bound by a binding operation must not clash.

Since the values for NUM and PERS in the two SUBJ f-structures in (25) do clash, the binding required by the Obviation Principle is not possible, according to the condition in (26). The sentence \(21b'\), therefore, will
be ruled out, as no possible antecedent for P exists in the matrix sentence.

Since PRED is not an inherent feature, two different PRED values do not count as clashing with respect to condition (26). The sentence in (27a) below is well-formed, and binding of the COMP SUBJ to the matrix SUBJ is possible, even though the two PRED values are not the same.

(27) a. bqa muḥend kayxemmem.
    remained(3sgm) Mohand CONT-3sgm-think
    'Mohand kept on thinking.'

b. 

| SUBJ [PRED 'MOHAND']
| NUM SG PERS 3 GEND MASC |
| PRED 'BQA<(SUBJ)(COMP)焗 |
| ASPECT PERFECT |
| COMP [SUBJ [PRED 'PRO']
| NUM SG PERS 3 GEND MASC |
| PRED 'XEMMEM<(SUBJ)焗 |

In (27b) all the feature values except the PRED values match, and therefore the PRO subject of the COMP is bound to its antecedent, the matrix subject.

The condition in (26) is stated negatively, i.e., "the feature values must not clash," rather than positively, "feature values must match," to include the participles. Participial subject affixes do not specify the same number of features as do tensed verb subject affixes. The participles are not specified for SUBJ person, for instance, and thus, if the feature values were required to match for the participial subject to be bound to
an antecedent matrix subject, the binding could not take place. The
participial subject lacks a feature that the matrix subject specifies, as
shown in (28) below.

(28) a. bqa gals.
      remained(3sgm) sitting(m)
      'He kept on sitting.'

   b. SUBJ [ PRED 'PRO']
       NUK   SG
       PERS  3
       GEND  MASC

       PRED 'BQA<(SUBJ)(COMP)>'
       ASPECT PERFECT

       COMP [ SUBJ [ PRED 'PRO']
              NUK   SG
              GEND  MASC

              PRED 'GLES<(SUBJ)>'
              PARTICIPLE ACTIVE

In (28b), the feature values in the two SUBJ f-structures do not clash, so
the COMP SUBJ can be bound to the matrix SUBJ. The features are not
identical, however, as the COMP SUBJ has no PERS value.

If the participle is the matrix verb, as in (8d), the Obviation
Principle again specifies that its subject will bind its COMP subject.
The f-structure for (8d), repeated below, is given in (29).

(8d) bəyya nemși.
    wanting-f 1sg-go
    'I (f) want to go.'
In (29), the matrix subject's NUM and GEND features are specified, while the COMP SUBJ has its NUM and PERS features specified. The feature values do not clash, however, and thus the COMP SUBJ can be bound to the matrix subject.

Certain of the verbs that subcategorize for a COMP are transitive, as illustrated in (30) and (31) below.

(30) a. byitek temši.
    want-lsg-2sg 2sg-go
    'I want you to go.'

    b. *byitek nemši / nemšiw / ymšiw.
       want-lsg-2sg lsg-go 1pl-go 3pl-go
       *I want you I go / we go / they go.

(31) a. xexšhum ymšiw daba.
    necessary(3sgm)-3pl 3pl-go now
    'They have to go now.'

    b. *xexšhum ymši / nemši / temši daba.
       necessary(3sgm)-3pl 3pl-go lsg-go 2sg-go now
       'They have to he go / I go / you go now.'
The ungrammaticality of the (b) sentences in (30) and (31) above, and the grammaticality of the (a) sentences, indicates that when a matrix object is present with a COMP, that object must be the antecedent of the COMP subject. No other antecedent for the complement PRO subject is possible.

The Obviation Principle, however, does not account for the (a) sentences in (30) and (31); it would still predict that the antecedent of the complement PRO subject would be the matrix subject. Since, in fact, the process involved in the interpretation of the COMP PRO subjects is not obviation (which specifies disjoint reference), but rather obligatory anaphoric control, the Obviation Principle is not appropriate for the discussion in this chapter. I thus propose a rule of obligatory anaphoric control for Moroccan, stated in (32) below.

(32) Obligatory anaphoric control

If P is the pronominal unexpressed subject of an anaphoric control clause C, and A is a possible antecedent of P, then P is bound to A

(i) if A is the OBJ of the minimal clause nucleus that properly contains C; otherwise

(ii) if A is the SUBJ of the minimal clause nucleus that properly contains C.

The rule of obligatory anaphoric control in (32) states that if a matrix object occurs with an anaphoric control (a-control) clause, that object must be the antecedent of the complement PRO subject; if no OBJ occurs, then the SUBJ is the antecedent. In Moroccan, an a-control clause is a closed complement which cannot contain an initial complementizer.

The f-structure of sentence (30a), repeated below for convenience, is
given in (33), to illustrate the functioning of the rule of obligatory anaphoric control.

(30a) *byitek temši*. 'I want you to go.'

(33)

```
(33) [SUBJ [PRED 'PRO']
    NUM SJ
    PERS 1]
A
PRED 'BYA<(SUBJ)(OBJ)(COMP)>'
ASPECT PERFECT
OBJ [PRED 'PRO' 1]
    NUM SG
    PERS 2]
A
COMP [SUBJ [PRED 'PRO' 1]
    NUM SG
    PERS 2]
P
PRED 'MŠA<(SUBJ)>'
```

Though both the matrix SUBJ and OBJ are possible antecedents of P, the rule of obligatory anaphoric control requires that the OBJ be the antecedent. Thus, P is bound to the OBJ, and this binding is permitted because the features of the OBJ match those of the COMP SUBJ, in accordance with the condition in (26) above. If the features of the COMP SUBJ matched those of the matrix SUBJ and not the matrix OBJ, then the sentence would be ill-formed, as the rule of obligatory control would be required to bind two items whose features clash.

Certain verbs may lexically specify the antecedent of a COMP PRO subject. For example, the verb *gal* 'say' requires that its OBLGO argument be the COMP SUBJ antecedent, as shown in (34) below.
(34) a. galt lmuhend ymši 1lḥanut.
said-3sgf to-Mohand 3sgm-go to-the-store
'She told Mohand to go to the store.'

b. *galt lmuhend temši 1lḥanut.
said-3sgf to-Mohand 3sgf-go to-the-store
*She told Mohand she go to the store.

The only possible antecedent of the COMP SUBJ in (34) is the OBLGO argument, muhend. Since an OBL is the obligatory controller of the COMP SUBJ in this sentence, the operation involved cannot be functional control, and must therefore be anaphoric control.

When a complex sentence consists of more than two verbs, as in (35) through (37) below, the antecedent of the embedded verbs must be the same in each case.

(35) a. byit nemši neqra.
want-lsg lsg-go lsg-read
'I want to go read.'

b. *byit nemši teqra / yqra.
want-lsg lsg-go 2sg-read 3sgm-read
*I want you to go you read / he read.

(36) a. byitek temši tšufhum.
want-lsg-2sg 2sg-go 2sg-see-3pl
'I want you to go see them.'

b. *byitek temši nšufhum / yšufhum.
want-lsg-2sg 2sg-go 1sg-see-3pl 3sgm-see-3pl
*I want you to go I see them / he see them.
The (a) sentences in (35) through (37) above, in which each embedded PRO subject has the same antecedent, are grammatical, whereas the (b) sentences, in which the embedded PRO subjects have different antecedents, are ungrammatical.

The rule of obligatory anaphoric control predicts just these facts, as the f-structure of sentence (35a), given below, illustrates.

(35a) byit nemši neqra. 'I want to go read.'
In (38), each COMP PRO SUBJ has its antecedent in the minimal clause nucleus that contains the a-control clause of which it is a member, according to the rule of obligatory anaphoric control. The antecedent to \( P_1 \) is \( A_1 \), and \( A_1 \) is also a PRO SUBJ, \( P_2 \), whose antecedent is \( A_2 \).

The following contrast shows that the minimal clause nucleus is indeed the domain of application of the rule of obligatory anaphoric control, and that it is not merely the case that each embedded verb's PRO subject must have the same antecedent. The f-structure of (39a) is given in (40).

(39) a. wellaw kaybyiwha teqra.
     became-3pl CONT-3pl-want-3sgf 3sgf-study
     'They ended up wanting her to study.'

b. *wellaw kaybyiwha yqraf.
     became-3pl CONT-3pl-want-3sgf 3pl-study

(40)
(39b), which is ungrammatical, shows that the antecedent of the most deeply embedded verb's PRO subject must be the object of the verb in the next higher clause (as predicted by the rule of obligatory anaphoric control), rather than the subject of the matrix verb. In other words, the PRO subject of an embedded verb must find its antecedent in the minimal clause nucleus that contains its a-control clause.

2.2 COMPs with complementizers

Many verbs take COMPs that contain a complementizer. The verbs qawel 'give one's word' and zeyyer 'put pressure on' often occur with the complementizer baş 'in order to, so that,' as the following examples illustrate.

(41) a. qaweltu baş nemši.
promised-lsg-3sgm that lsg-go
'I promised him that I would go.'

b. qaweltu baş ymši.
promised-lsg-3sgm that 3sgm-go
'I promised him that he would go.'

c. qaweltu baş temšiw.
promised-lsg-3sgm that 2pl-go
'I promised him that you (pl) would go.'

(42) a. zeyyεrtu baş ymši.
pressured-lsg-3sgm that 3sgm-go
'I put pressure on him so that he would go.'

b. zeyyεrtu baş nemši.
pressured-lsg-3sgm that lsg-go
'I put pressure on him so that I could go.'

c. zeyyεrtu baş temšiw.
pressured-lsg-3sgm that 2pl-go
'I put pressure on him so that you (pl) could go.'
The sentences in (41) and (42) above indicate that the antecedent to a complement verb subject is not restricted with these verbs to one particular argument of the matrix verb. In fact, as the (c) sentences demonstrate, the antecedent may be extra-sentential. The reference of the embedded PRO subject is free in these sentences because a clause that begins with a complementizer is not an a-control clause. The rule of obligatory anaphoric control is thus not applicable, and the antecedent of the embedded clause PRO subject is not restricted. The fact that arbitrary control is possible in the above sentences indicates that the operation involved is anaphoric control, rather than functional control.

Though the presence of the complementizer is the determining factor in the relation between anaphor and antecedent, I assume that both a-control and non-a-control clauses (as discussed in this chapter) are closed complements; that is, the presence of the complementizer merely affects the choice of possible antecedents of a PRO subject, and does not affect the complement type. Thus, a verb in an a-control clause may have the same form as a verb in a non-a-control clause, though the subject of the former requires obligatory anaphoric control, while the subject of the latter may have an extra-sentential antecedent.

The verb zeyyer has two meanings: the one given in (42) above, meaning 'put pressure on,' and another meaning 'force.' When zeyyer has the meaning 'force,' as shown below, it occurs without the complementizer baṭ. In that case, the antecedent of the complement PRO subject is

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4 The (c) examples above generally require a context for Moroccan speakers to find them acceptable, as the arbitrary control usage is less common than the usage in the (a) and (b) examples.
restricted by the rule of obligatory anaphoric control.

(43) a. zeyyeṛtu yqra.
    forced-lsg-3sgm 3sgm-study
    'I forced him to study.'

    b. *zeyyeṛtu neqra / tefraw.
    forced-lsg-3sgm lsg-study 2pl-study
    'I forced him I study / you (pl) study.

(43b) is ungrammatical because *zeyyer with the meaning 'force' cannot occur with a complementizer, and a complement clause which does not allow a complementizer is an a-control clause. The rule of obligatory anaphoric control is thus applicable, requiring that the antecedent of the complement PRO subject be the matrix object.

An a-control clause is defined as a complement clause in which a complementizer cannot occur, rather than one in which a complementizer does not occur, as certain clauses may occur with or without a complementizer. In those cases, even when no complementizer is present, the possibility of having a complementizer in clause-initial position prevents those clauses from qualifying as a-control clauses. The sentences in (44) below illustrate this fact.

(44) a. xreţ, muhend yţib lxwebz.
    went out(3sgm) Mohand 3sgm-bring the-bread
    'Mohand went out to bring the bread.'

    b. xreţ muhend baş yţib lxwebz.
    went out(3sgm) Mohand that 3sgm-bring the-bread
    'Mohand went out to bring the bread.'

    c. xreţ mecaha yţibu lxwebz.
    went out(3sgm) with-3sgf 3pl-bring the-bread
    'He went out with her to (they) bring the bread.'
Since the complementizer baš may occur with the verb xreż, the complement clause yžib(u) lxebz is not an a-control clause, even when the complementizer is not present, as in (44a). The rule of obligatory anaphoric control is therefore not applicable, as the example in (44c) indicates. In that example, the antecedent to the complement verb subject is not restricted to the subject of the matrix clause; rather, the complement PRO subject has a split antecedent, referring to both the subject and oblique object of the matrix clause.

The verbs xreż 'go out,' zeyyer 'put pressure on,' and gawel 'give one's word' all select COMPs with the complementizer baš, and thus their COMPs do not qualify as a-control clauses. The verbs bya 'want,' bda 'begin,' bqa 'remain, keep on,' and kan 'be,' on the other hand, do not select a complementizer with their COMPs, and therefore their complements will be a-control clauses.

Another class of verbs that subcategorize for a COMP select the complementizer bellì 'that.' With these verbs, as with those that select baš, the antecedent of the COMP PRO subject is not restricted by the rule of obligatory anaphoric control. The verbs eref 'know' and 8af 'see' are two verbs which optionally select the complementizer bellì. Example sentences with these verbs are given in (45) and (46) below.

(45) a. eref belli ddawha lleblad.
     know-lsg that tood-3pl-3sgf to-the-village
     'I know that they took her to the village.'

     b. eref belli ddaha lleblad.
     know-lsg that took(3sgm)-3sgf to-the-village
     'I know that he took her to the village.'
In the above examples, the antecedent of the PRO subject of the complement verb is not restricted to the subject of the matrix verb; in fact, the antecedent is outside the sentence. The fact that *cref* 'know' and *ṣaf* 'see' take COMPs with complementizers indicates that their COMPs are not a-control clauses.

This chapter has provided a brief introduction to complex sentences in Moroccan, and includes material to be discussed in a more detailed fashion in the next chapter. In that chapter a particular type of complex sentence, the Matrix-Object Dislocation sentence, is the subject of an in-depth investigation.
CHAPTER III  MATRIX-OBJECT DISLOCATION

Some of the examples in the last chapter involved sentences whose matrix object NP was coreferential with a PRO subject in a complement clause. The present chapter constitutes an investigation of sentences in which a matrix object may be coreferential with an element in one of several positions in the complement clause. In the course of the investigation I will demonstrate that the operation involved in the interpretation of this type of sentence is the same as that used in Left-Dislocation for relating a "fronted" NP to a pronoun in the associated sentence.

3.1 Matrix-Object Dislocation--a description

In Moroccan there is a particular type of construction, which I will call Matrix-Object Dislocation (hereafter MO Dislocation), in which an NP receives prominence similar to that placed on left-dislocated NPs. The investigation of the properties of this construction is the main focus of this chapter.

MO Dislocation is a construction in which an NP or object affix occurs in the matrix object position of certain verbs that subcategorize for a COMP. An obligatory coreferential pronominal affix appears in the complement clause. In contrast to the sentences seen in the last chapter, this coreferential affix may occur in one of several positions in the complement clause, not just the subject position. A matrix object may be related to a coreferential pronominal affix in either subject, object, oblique object, or possessor position in the complement clause.
This chapter will detail the theoretical significance of this construction with respect to the Projection Principle of the government and binding theory of Chomsky (1981) and aspects of the lexical-functional grammar theory of Bresnan (1982a,b,c) and Kaplan and Bresnan (1982).

Before the theoretical discussion, however, I will first present the data to be considered. Since MO Dislocation shares many properties with Left-Dislocation, the following section is an examination of Left-Dislocation, both in English and in Moroccan.

3.2 Left-Dislocation

3.2.1 Left-Dislocation in English

Left-Dislocation is a construction which involves relating a fronted NP to a coreferential pronoun in the associated sentence. In each of the sentences in (1) through (3) below, examples of Left-Dislocation, the fronted NP John is coreferential with a pronoun in the following sentence.

(1) a. John, he studies at M.I.T.
   b. John, Mary saw him in Cambridge.
   c. John, Mary talked to him yesterday.
   d. John, his mother arrived from the village.
   e. John, they brought his money this morning.
   f. John, they were working with his brother.

(2) a. John, the woman he loves returned.
   b. John, the woman who loves him returned.
   c. John, the woman who lived with him returned.
(3)  a. John, I don't know whether he's asleep or awake.
    b. John, I know what he's going to say to them.
    c. John, I don't know who saw him yesterday.

In the sentences in (1), the elements coreferential with the NP John occur in a variety of positions in the following sentence: subject (a), object (b), oblique object (c), subject possessor (d), object possessor (e), and oblique object possessor (f). In (2), the pronouns coreferential with the NP John are in subject (a), object (b), and oblique object position (c) inside a relative clause. The sentences in (3) demonstrate that a left-dislocated NP can be coreferential with a pronoun inside an embedded question.

Relative clauses and embedded questions are "islands" in English. That is, "extraction" of an NP from inside those structures is prohibited. Since, however, Left-Dislocation is permitted, it is generally agreed that the operation involved is not a "movement rule" (i.e., not constituent control (Bresnan (1982a)). Rather, the dislocated NP is base-generated in a position of prominence, provided by the P-S rules to the left of the sentence, and its interpretation is through rules of coreference and anaphoric binding.

Anaphoric binding, discussed below, is the process that relates a fronted NP (John in the sentences above) to a coreferential pronominal element in an associated clause (he, him above).

In contrast to Left-Dislocation, the rule of Topicalization in English is an operation that involves relating a fronted NP to a gap [NP_e] (rather than a pronoun) in the associated sentence. An example of Topicalization
is illustrated in sentence (4) below.

(4) John Mary likes \[NPe\].

Anaphoric binding is not involved with Topicalization; rather, the process that relates the topicalized NP to the gap is constituent control. This operation is subject to the island constraints, and thus sentence (5) is ungrammatical.

(5) *John the woman that loves \[NPe\] returned.

Anaphoric binding, as discussed in Zaenen (1980), is an operation that relates anaphors to antecedents, elements that agree only in inherent features, and not in functional markings (just as with anaphoric control). Constituent control, on the other hand, like functional control, binds elements in which all features match, as two f-structures are identified and merged. Anaphoric binding, according to Zaenen, is divided into two subparts: the first is general anaphoric binding, which relates antecedents to pronouns, and the second is local anaphoric binding, a rule that is constrained by requirements of particular anaphors. General anaphoric binding is the operation involved in constructions such as Left-Dislocation, and local anaphoric binding relates anaphors such as reflexives to their antecedents. Reflexive interpretation is called a local relation because reflexives often have the requirement that their antecedent be in the same minimal clause nucleus as the reflexive (see (58a) below for evidence that this claim is correct for Moroccan).

Since a left-dislocated item is not an argument of any verb, it
receives an interpretation by being anaphorically bound to an argument of the verb in the following sentence. A left-dislocated item is assigned the function TOP(IC) in f-structure, a term reserved for items that are not themselves an argument of a verb.  

Anaphoric binding, then, is the operation that relates a TOP to a coreferentially coindexed pronominal element in a subordinate clause. This rule, unlike constituent control, is not subject to island constraints, and therefore there are no distance requirements holding between the anaphor and its antecedent.

Since anaphoric binding relates only elements which are coreferential, the rule is subject to constraints on coreference. Thus, sentences such as those in (6) below are not grammatical, as anaphoric binding is not applicable.

(6) a. *Diane$_i$, Bob talked with Diane$_i$.
   b. *Diane, Bob talked with Terry.

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1 The function TOP rather than FOCUS is used for the prominence bestowed on left-dislocated as well as MO dislocated items; FOC involves new information in the sentence, and is associated with questions and relative clauses. TOP, on the other hand, involves old information, and must be linked to another element (Kaplan and Bresnan (1982:255)). The required linking is effected in Left-Dislocation and MO Dislocation by anaphoric binding.

2 I assume that a Left-Dislocation sentence has the following structure:

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       S
      / \  
     /   \ 
    S'    NP
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Given this structure, the material contained in S' is subordinate to the left-dislocated NP.
Sentence (6a) is ill-formed because the two occurrences of the NP Diane cannot be coreferentially coindexed, as the second instance is not a pronoun. Thus, anaphoric binding, which is required by the construction in question, is not applicable. (6b) is not possible because anaphoric binding relates only coindexed items, as without a coreferential counterpart the dislocated element cannot receive an interpretation.

The interpretation of reflexives is not an instance of anaphoric binding as it is being used here. First, anaphoric binding involves no distance limitations between anaphor and antecedent; reflexive interpretation is subject to severe restrictions on the distance between the reflexive anaphor and its antecedent. Second, both the reflexive and its antecedent are arguments of a verb, and thus neither the antecedent nor the reflexive anaphor can be assigned the TOP function. The relation between a reflexive and its antecedent is therefore not an instance of anaphoric binding. The process involved in the interpretation of reflexives is coreference; to distinguish this type of coreference from regular pronominal coreference, which has no distance limitations, I will call the reflexive case "anaphoric coreference."

3.2.2 Restrictions on Left-Dislocation

Zaenen (1980) discusses one restriction on the Left-Dislocation construction, which she calls the "one-pronoun constraint." This constraint

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3 J. Simpson (personal communication) has suggested that perhaps certain anaphors, such as reflexives in English (which are local) and reflexives in Icelandic (which are long-distance) specify the type of antecedent they can have, as part of their lexical entry. Anaphoric binding, then, would only apply to anaphors that had no lexical marking specifying possible antecedents.
prohibits items from occurring in Left-Dislocation position that cannot be referred to by one pronoun. This constraint predicts that, as only NPs and locative and temporal PPs have pronominal forms in English, only items of those categories may appear in Left-Dislocation position. For instance, the sentences in (7) below are well-formed, while those in (8) are not.

(7) a. In that house, did you play there alot when you were a kid?
    b. When you were a kid, did you play in that house alot then?

(8) a. *About that house, did you always tell people about it?
    b. *With John, did you always talk about that house with him?

The sentences in (7) are acceptable because just one pronoun, there in (7a) and then in (7b), refers back to the dislocated PPs. In (8), however, there is no one pronoun that can refer back to the dislocated items, and therefore the sentences are ruled out by the one-pronoun constraint. 4

There is another restriction of Left-Dislocation, not mentioned by Zaenen, which is a general restriction on constructions that give prominence to certain NPs. This restriction prevents non-specific NPs from occurring in positions of prominence in a sentence. (I am assuming that questioned elements, though indefinite, are specific.) Non-specific items cannot be

4 J. Simpson (personal communication) has pointed out to me that the following sentence is grammatical, where a PP rather than one pronoun refers back to the dislocated PP:

(1) In that house, did you play in there alot when you were a kid?

Since sentences with a similar structure, those in (8) above, are ungrammatical, it may be the case that locatives can be dislocated even when the coreferential element is a PP; i.e., locatives in general can be dislocated, while other PPs cannot.
referred to by pronouns in Left-Dislocation, nor can they occur in Topicalization or Cleft position, as the sentences below indicate.

(9)  
a. *Some dog, John said he saw it.
   b. *Something John said he wanted to buy.
   c. *It was any teacher that John wanted to locate.
   vs.
   a'. John said he saw some dog.
   b'. John said he wanted to buy something.
   c'. John wanted to locate any teacher.

Since non-specific items cannot receive prominence, one would expect that idiom chunks would not be allowed to appear in positions of prominence, as they have no independent reference outside their particular construction, and are therefore non-specific (non-referentiality being a special case of non-specificity). The unacceptability of the sentences in (10) below indicates that in fact idiom chunks do not appear in Left-Dislocation, Topicalization, or Cleft position.

(10)  
a. *Our goose, it seems to be cooked. (=We seem to be in trouble.)
   b. *Headway John made.
   c. *It is tabs that they keep on subversives.

3.2.3 Left-Dislocation in Moroccan

Left-Dislocation in Moroccan has many of the same properties as its English counterpart. The sentences in (11) below illustrate that relative clauses and embedded questions are islands in Moroccan. The examples in (12) through (14) are the Moroccan equivalents of the English Left-Dislocation
sentences given in (1) through (3) above. The affixes coreferential to the
dislocated NPs have been underlined.

(11) a. *škun elli kateřref lemra elli šaft [NP_e]?
   who that CONT-2sg-know the-woman that saw-3sgf
   *Who do you know the woman that saw?

   b. *škun elli kateřref fin mša / fin ddaw [NP_e]?
   who that CONT-2sg-know where went(3sgm) where took-3pl
   *Who do you know where he went / where they took?

(12) a. muḥend, kayqra fM.I.T.
   Mohand CONT-3sgm-studies in-M.I.T.
   'Mohand, he studies at M.I.T.'

   b. muḥend, šaftu fCambridge.
   Mohand saw-3sgf-3sgm in-Cambridge
   'Mohand, she saw him in Cambridge.'

   c. muḥend, heḏrat mœah 1barh.
   Mohand spoke-3sgf with-3sgm yesterday
   'Mohand, she spoke with him yesterday.'

   d. muḥend, wešlat ũmu men leblad.
   Mohand arrived-3sgf mother-3sgm from the-village
   'Mohand, his mother arrived from the village.'

   e. muḥend, żabu flusu had şabah.
   Mohand brought-3pl money-3sgm this the-morning
   'Mohand, they brought his money this morning.'

   f. muḥend, kanu kayxedmu mœa xuḥ.
   Mohand were-3pl CONT-3pl-work with brother-3sgm
   'Mohand, they were working with his brother.'

(13) a. muḥend, režeat lemra elli katebyi.
   Mohand returned-3sgf the-woman that CONT-3sgm-loves
   'Mohand, the woman he loves returned.'

   b. muḥend, režeat lemra elli katebyih.
   Mohand returned-3sgf the-woman that CONT-3sgf-loves-3sgm
   'Mohand, the woman that loves him returned.'
In the examples in (12) through (14), the NP muḥend is in Left-Dislocation position, and the coreferential affixes are in a variety of positions in the associated sentence. In (13), the dislocated NP is coreferential with an affix inside a relative clause, and in (14) the coreferential affix is inside an embedded question. Since these sentences are grammatical, Left-Dislocation in Moroccan does not obey the island constraints, and thus constituent control is not involved. The process that relates the dislocated NP to a coreferential element is the rule of anaphoric binding, discussed above for English.

A further possibility for Left-Dislocation of an NP in Moroccan is an independent pronoun. Independent pronouns are often used as an emphasis marker, and as such do not function as arguments of a verb or preposition. With this use, an independent pronoun must occur in conjunction with a pronominal affix to place emphasis on a subject, object, or oblique object. The independent pronoun may not itself occur as a subject, object, or oblique object; it is, rather, an adjunct of an NP which has a
grammatical function. Its use as an emphatic marker is illustrated in (15) below, and in (16), examples are presented of an independent pronoun occurring in Left-Dislocation position. When they occur as dislocated NPs, independent pronouns do not have the emphatic meaning; they are simply NPs which have received prominence in the sentence, as are all dislocated NPs.

(15) a. hiyya, mšat leqqad.  
her went-3sgf to-the-house  
'She went home.'

b. Šeftha hiyya.  
saw-1sg-3sgf her  
'I saw her.'

c. ttlagina mea hiyya.  
met-1pl with-3sgf her  
'We met her.'

d. Žat mmha hiyya.  
came-3sgf mother-3sgf her  
'Her mother came.'

e. Šefna bba hiyya.  
saw-lpl father-3sgf her  
'We saw her father.'

f. ttlagina mea bba hiyya.  
met-1pl with father-3sgf her  
'We met her father.'

(16) a. hiyya, Šeftha.  
hersaw-1sg-3sgf  
'Her, I saw her.'

b. hiyya, ttlagina mea.  
her met-1pl with-3sgf  
'Her, we met her.'

c. hiyya, Žat mmha.  
hercame-3sgf mother-3sgf  
'Her, her mother came.'
The sentences in (16) above show that independent pronouns, like other dislocated NPs, occur with a coreferential element in the associated sentence, and these elements are found in the same range of positions as with other dislocated NPs.

3.2.4 Restrictions on Left-Dislocation in Moroccan

When an NP is fronted to receive prominence in Moroccan, a corresponding pronominal affix is obligatory in the associated sentence (in non-subject positions; a subject affix is always obligatory). There is no construction in Moroccan equivalent to Topicalization in English, as shown by the ungrammaticality of the sentences in (17) below.

(17) a. *muḥend ma ṣefta.
Mohand NEG saw-lsg-NEG
'Mohand I didn't see.'

b. *ṣeft naẓat, walayenni muḥend ma ṣefta.
saw-lsg Najat but Mohand NEG saw-lsg-NEG
'I saw Najat, but Mohand I didn't see.'

In the sentences in (17), no object suffix occurs on the verb ṣeft 'I saw' (on the second verb ṣeft in (17b)), and the sentences are ungrammatical. Recall that sentence (12b), where an object suffix is present, is well-formed; therefore, in Moroccan a fronted NP must have a coreferential element in its associated clause.
The one-pronoun constraint applies to Moroccan for dislocated coordinate NPs, as shown below in (18).

(18) a. *muḥend w naẓat, lginaha w qellebna elih.
   Mohand and Najat found-lpl-3sgf and looked-lpl for-3sgm
   *Mohand and Najat, we found her and looked for him.

b. muḥend w naẓat, lginahum.
   Mohand and Najat found-lpl-3pl
   'Mohand and Najat, we found them.'

In (18) above, a coordinate NP may be fronted only in the case where one pronoun, here the affix -hum, refers to both members of the coordination.

Unlike English locative and temporal PPs, Moroccan PPs have no corresponding proform, and thus the one-pronoun constraint is not useful for predicting restrictions on Moroccan dislocated PPs.

Though one might suspect that the word temma 'there' in Moroccan is a PP proform, the following examples demonstrate that temma is not a PP.

(19) a. māina 1lwad.
    went-lpl to-the-river
    'We went to the river.'

b. māina 1temma.
    went-lpl to-there
    *We went to there.

c. *māina temma.
    went-lpl there
    'We went there.'

(20) *feḍḍar, ṣefnahum temma.
    in-the-house saw-lpl-3pl there
    'In the house, we saw them there.'
In (19) *temma* replaces an NP, but not a PP, and (20) demonstrates that *temma* cannot be a prepositional proform corresponding to a fronted PP. *temma* is thus not a preposition, and the sentences in (21) below illustrate its use as a locative NP without a preposition.

(21) a. Šefnahum *temma.*
    saw-1pl-3pl there
    'We saw them there.'

    b. gals *temma* ḫdahum.
    sitting(m) there beside-3pl
    'He's sitting there beside them.'

Though *temma* is an NP, its locative meaning prevents it from acting as a proform corresponding to an NP, as the examples below illustrate.

(22) a. *ddar*, kayleṣbu *temma* bezzaf.
    the-house CONT-3pl-play there lots
    'The house, they play there lots.'

    b. *ddar*, kayleṣbu *fiḥa* bezzaf.
    the-house CONT-3pl-play in-3sgf lots
    'The house, they play in it lots.'

Example (22a) demonstrates that *temma* cannot function as an NP proform. (22b) shows that a fronted NP must occur with a corresponding pronominal affix if a grammatical sentence is to be produced.

Since *temma* is not a pronominal PP, and is the only possible candidate for such status, Moroccan does not have a prepositional proform. There are, furthermore, no candidates for an adjectival proform. Though PPs and APs do not have corresponding proforms in Moroccan, they may, nevertheless, be fronted for emphasis, as the following sentences indicate.
(23) a. feddar klit.
in-the-house ate-lsg
'In the house I ate.'
b. llwad mšina.
to-the-river went-lpl
'To the river we went.'

(24) a. zwina lbent.
beautiful-f the-girl
Beautiful (is) the girl.
b. sxun lḥal.
hot(m) the-weather
Hot (is) the weather.

It would appear, then, that any XP in Moroccan may occur in sentence-initial position for prominence. If, however, that XP has a proform (only NPs in Moroccan), then that proform must occur in the associated sentence when the XP is fronted.

There is another construction in Moroccan in which a PP can appear in sentence-initial position. This construction, illustrated below, does not involve coreference, in the sense of "identity of reference." Instead, what is involved is "identity of kind." In English, for instance, in the sentence "John read a book and I read one, too," the NP one is not identical in reference to the NP a book, but it is an NP of the same "kind" as a book. In the sentences below, the NP duk sšyar 'those small ones' is of the same "kind" as the PP feṭṭumubilat 'among cars.'

(25) a. feṭṭumubilat, kanbyi duk sšyar.
in-the-cars CONT-lsg-like those the-small(pl)
'Among cars, I like those small ones.'
b. *feṭṭumubilat, kanbɣi fihum duk ʂɣar.
in-the-cars CONT-lsg-like in-3pl those the-small(pl)
*Among cars, I like those small ones among them.

c. *kanbɣi duk ʂɣar feṭṭumubilat.
CONT-lsg-like those the-small in-the-cars
*I like those small ones among cars.

d. kanbɣi duk ʂɣar, feṭṭumubilat.
CONT-lsg-like those the-small in-the-cars
'I like those small ones, among cars.'

These sentences indicate that the "fronted" PP does not originate from a position in the sentence. (25c), in which this PP is in the most likely position inside the sentence, is not a well-formed sentence. (25d), on the other hand, where the PP is set off by comma intonation, is well-formed. The presence of the comma intonation indicates that the PP is an adjunct to the sentence, rather than an argument of the verb. Therefore, in (25a), the PP feṭṭumubilat has not been fronted to initial position in the sentence, and thus Left-Dislocation is not involved.

Moroccan is like English in that non-specific items, including idiom chunks, cannot receive prominence through Left-Dislocation. This fact is illustrated in (26) through (29) below.

(26) * ámbi kelb, ttaḥabni Ḉeftu fezzmega g'bila.
some dog thought(3sgm)-lsg saw-1sg-3sgm in-the-street before
*Some dog, I thought I saw it in the street earlier.

(27) a. zeyyrulih 1lwalb.
tightened-3pl-to-3sgm the-screws
'They put pressure on him.' (lit. 'They tightened the screws on him.')
b. *llwalb, zeyyruhulmih.
   the-screws tightened-3pl-3pl-to-3sgm
   The screws, they tightened them on him.

(28) a. hezzu lma.
   lifted(3sgm) the-water
   'He's finished, lost.' (lit. 'The water lifted him.')

b. *lma, hezzu.
   the-water lifted(3sgm)-3sgm
   The water, it lifted him.

(29) a. qrebla bsekra.
   hit(3sgm)-3sgf with-drunkenness
   'He really got drunk.' (lit. 'He hit her with a drunkenness.')

b. *hiyya, qrebla bsekra.
   her hit(3sgm)-3sgf with-drunkenness
   Her, he hit her with a drunkenness.

In (26), the NP *kelb 'some dog' is non-specific, and thus cannot receive prominence in the sentence. In each of the (b) sentences in (27), (28), and (29), the dislocated NP has no independent reference, and therefore it is non-specific, and thus non-dislocatable. In Moroccan as well as English, then, non-specific items, including idiom chunks, cannot appear in Left-Dislocation position.

Non-idiomatic readings for the same dislocated items as in (27) through (29) are possible with Left-Dislocation, as indicated in (30) through (32) below.

(30) llwalb, zeyyruhum.
   the-screws tightened-3pl-3pl
   'The screws, they tightened them.'
(31) lma, hezz lbaṣur.
the-water lifted(3sgm)the-boat
'The water, it lifted the boat.'

(32) hiyya, ḏrebha bleṣa.
her hit(3sgm)-3sgf with-the-stick
'Her, he hit her with a stick.'

Given the existence of the forms in (30) through (32), the failure of the items in (27) through (29) to undergo Left-Dislocation is thus not a property of the items themselves, but of the idiomatic construction in which they occur in those sentences.

3.2.5 Structure of Left-Dislocation

Without making any theoretical claims for the moment, I will assume the structure of Left-Dislocation sentences to be roughly as given in (33) below.

(33)

Within the government and binding framework of Chomsky (1981), the dislocated NP in the above structure would be said to be in a non-argument (A) position; that is, a position to which a thematic role cannot be assigned, either by the verb or the verb phrase. This fact, among others, will differentiate Left-Dislocation from MO Dislocation.
3.3 Matrix-Object Dislocation

Matrix-Object Dislocation involves relating an NP or pronominal affix in the matrix object position (the MO dislocated item) to a coreferential pronominal element in a lower clause. This relation is demonstrated in (34) below. (34) exemplifies the fact that, as with Left-Dislocation, so also in MO Dislocation an affix in the lower clause is obligatory if the lower NP is not a subject (subject affixes are obligatory whether or not MO Dislocation is involved).

(34) a. b'yitu yšufu fšefru.
    want-lsg-3sgm 3pl-see-3sgm in-Sefrou
    'I want them to see him in Sefrou.'
    (lit. 'I want him they see him in Sefrou."

b. b'yit muhend yšufu fšefru.
    want-lsg Mohand 3pl-see-3sgm in-Sefrou
    'I want them to see Mohand in Sefrou.'
    (lit. 'I want Mohand they see him in Sefrou."

(35) a. *b'yitu yšufu fšefru.
    want-lsg-3sgm 3pl-see in-Sefrou
    I want him they see in Sefrou.

b. *b'yit muhend yšufu fšefru.
    want-lsg Mohand 3pl-see in-Sefrou
    I want Mohand they see in Sefrou.

In the sentences in (34), an object suffix or an NP appears in the matrix verb's object position, and it is related to an affix in the lower clause. The sentences in (35) demonstrate that the matrix object NP is not functioning as the object of the verb yšufu 'they see,' as the sentences are ungrammatical. These sentences are not well-formed because the verb yšufu lacks an object argument. Therefore, the NP following the matrix
verb byit 'I want' must be outside the domain of the lower verb, and thus must be in the position of object to the matrix verb. Its position as matrix object is clearly demonstrated in (34a) and (35a), where the MO dislocated item is an affix attached to the matrix verb. Thus, for the sentences to be grammatical, an affix in the complement clause is obligatory.

3.3.1 The data

There are two relationships operating in the sentences in (34) above. One is the relation between the matrix verb and its object, and the second is the relation between the matrix object and an obligatory affix in the complement clause. Before discussing these relationships, however, I will present data indicating the range of sentence types that are found in Moroccan involving the matrix object-lower clause affix relation. Since not all verbs can occur with MO Dislocation, it would seem to be a lexical property of certain verbs that they allow this construction.

The class of verbs which permit this type of dislocation in Moroccan includes the verbs (a) bya 'want,' (b) lga 'find,' (c) gaf 'find,' (d) aber 'find,' (e) sayn or tsenna (dialectal variation) 'wait for,' (f) cref 'know,' (g) šaf 'see,' (h) smee 'hear,' (i) xaf 'fear,' (j) denn 'think,' (k) tshab 1- 'think (contrary to fact),' and (l) ttmenna 'hope.' These verbs differ in several respects. First, the verbs cref, šaf, smee, xaf, denn, and tshab 1- can occur with a complementizer, while the others cannot.

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5 This list is not necessarily an exhaustive list of MO Dislocation verbs in Moroccan. The verbs included here are those I have found to take MO Dislocation; others may exist that I am not aware of at this time.
The verbs bya and sayn and tsenna allow only an imperfect complement, while the other verbs select any tense in their complement verb except the imperfective. xaf allows only an imperfective unless it occurs with the complementizer yak ma 'perhaps,' when it can take a future or perfect complement. The verbs (a) through (h) are transitive, and those in (i) through (l) are intransitive in their other uses where they do not occur with a complement sentence. This fact will be important for the analysis to follow.

Below are examples of the above verbs, shown with a dislocated matrix object coreferential with an affix in several positions in the complement clause. The coreferential elements have been underlined in each case, and the complementizers in parentheses indicate that the sentences are acceptable with or without those complementizers.  

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6 The abbreviations (C1), (C2), and (RSH1) below, refer, respectively to: Colin (1957), Colin (1951) and Harrell (1962).
a. byitek \( \gamma \)edda texlet \( \varepsilon \)liyya l\( \dot{d} \)ar mexzen... \( \text{(C1)} \)  
\begin{align*}  
\text{want-lsg-2sg tomorrow 2sg-join to-lsg to-house government}  
\end{align*}  
'I want you to join me tomorrow at the royal palace...'

b. \( \text{\varepsilon} \)eb\( \text{\varepsilon} \)atu kla nne\( \text{\varepsilon} \)f fih. \( \text{(C1)} \)  
\begin{align*}  
\text{found-3sgf-3sgm ate(3sgm) half in-3sgm}  
\end{align*}  
'She found (him) he'd eaten half of it.'

c. tsennitu \( \varepsilon \)i men leblad. \( \text{\varepsilon} \)
\begin{align*}  
\text{waited for-lsg-3sgm 3sgm-come from the-village}  
\end{align*}  
'I waited for him to come from the village.'

d. \( \text{\varepsilon} \)reftek bin byiti ssekk\( \text{\varepsilon} \)ar... \( \text{(C1)} \)  
\begin{align*}  
\text{know-lsg-2sg that want-2sg the-sugar}  
\end{align*}  
'I know (you) that you want sugar...'

e. \( \text{\varepsilon} \)e\( \text{\varepsilon} \)tu ma kaye\( \text{\varepsilon} \)mel \( \varepsilon \)ir ell\( \text{\varepsilon} \)i gallih xalu. \( \text{\varepsilon} \)  
\begin{align*}  
\text{saw-lsg-3sgm NEG CONT-3sgm-do only that said(3sgm)-to-3sgm uncle-3sgm}  
\end{align*}  
'I saw (him) that he only does what his uncle tells him.' \( \text{(RSH1)} \)

f. \( \text{\varepsilon} \)eftu \( \varepsilon \)y\( \text{\varepsilon} \)lebha felklam. \( \text{(C1)} \)  
\begin{align*}  
\text{feared-3sgf-3sgm 3sgm-defeat-3sgf in-the-words}  
\end{align*}  
'She feared (him) that he would defeat her with words.'

g. kanttmmennah \( \varepsilon \)\( \text{\varepsilon} \)i bekri. \( \text{\varepsilon} \)  
\begin{align*}  
\text{CONT-lsg-hope-3sgm 3sgm-come early}  
\end{align*}  
'I hope he'll come early.'

h. \( \text{\varepsilon} \)ennitu \( \text{\varepsilon} \)ennit \( \text{(belli)} \) \( \text{\varepsilon} \)a\( \text{\varepsilon} \) \( \text{\varepsilon} \)\( \text{\varepsilon} \)m\( \text{\varepsilon} \) felblad. \( \text{\varepsilon} \)  
\begin{align*}  
\text{thought-lsg-3sgm that saw(3sgm) mother-lsg in-the-village}  
\end{align*}  
'I thought (him) that he saw my mother in the village.'

i. \( \text{\varepsilon} \)tsh\( \text{\varepsilon} \)abli \( \text{\varepsilon} \)\( \text{\varepsilon} \)h\( \text{\varepsilon} \)end \( \text{\varepsilon} \)\( \text{\varepsilon} \)\( \text{\varepsilon} \)a \( \text{\varepsilon} \)\( \text{\varepsilon} \)ahum. \( \text{\varepsilon} \)  
\begin{align*}  
\text{seemed(3sgm)-to-lsg Mohand went(3sgm) with-3pl}  
\end{align*}  
'I thought (Mohand) that he went with them.'
(37) OBJECT OF COMPLEMENT VERB

a. byitu yddiwh lleblad.
   want-lsg-3sgm 3pl-take-3sgm to-the-village
   'I want (him) for them to take him to the village.'

b. lgitu ddawh meahum lbarh.
   found-lsg-3sgm took-3pl-3sgm with-3pl yesterday
   'I found (him) they took him with them yesterday.'

c. tsennitu yxellṣuh.
   waited for-lsg-3sgm 3pl-pay-3sgm
   'I waited for (him) them to pay him.'

d. ṣeftu (belli) ṣafuh fṣefru.
   know-lsg-3sgm that saw-3pl-3sgm in-Sefrou
   'I know (him) that they saw him in Sefrou.'

e. ṣeftha yadi yddiha waḥd axer, dditha 'ana. (C2)
   saw-lsg-3sgf FUT 3sgm-take-3sgf one other took-lsg-3sgf me
   'I saw (her) that someone else was going to take (marry) her, so
   I took her.'

f. xeftu yddiwh lefransa.
   feared-lsg-3sgm 3pl-take-3sgm to-France
   'I feared (him) they'd take him to France.'

g. kantżennahum yṣtihum muhend flushum.
   CONT-lsg-hope-3pl 3sgm-give-3pl Mohand money-3pl
   'I hope (them) Mohand will give them their money.'

h. dennitu (belli) ddawh meahum.
   thought-lsg-3sgm that took-3pl-3sgm with-3pl
   'I thought (him) that they took him with them.'

i. ttsḥabli muhend, ūṣafu ḡfṣefru.
   seemed(3sgm)-to-lsg Mohand saw-3sgf-3sgm in-Sefrou
   'I thought (Mohand) that she saw him in Sefrou.'
(38) OBLIQUE OBJECT OF COMPLEMENT VERB

a. byitu yxerzu mæah.
want-lsg-3sgm 3pl-go out with-3sgm
'I want (him) for them to go out with him.'

b. žbeťtu kayhedru mæah.
found-lsg-3sgm CONT-3pl-speak with-3sgm
'I found (him) they were speaking with him.'

c. tasennitu yešiwhalih.
waited for-lsg-3sgm 3pl-give-3sgf-to-3sgm
'I waited for (him) them to give it to him.'

d. ērifu rughum bin darha bihum şi waḥd. (O2)
know-3pl themselves that did(3sgm)-3sgf with-3pl some one
'They know (themselves) that someone had played a trick on them.'

e. smeętu (belli) kayxedmu mæah.
heard-lsg-3sgm that CONT-3pl-work with-3sgm
'I heard (him) that they work with him.'

f. xeftu yttlagaw mæah.
fearèd-lsg-3sgm 3pl-meet with-3sgm
'I feared (him) they'd meet him.'

g. kanttmennah yžibuhalih.
CONT-lsg-hope-3sgm 3pl-bring-3sgf-to-3sgm
'I hope (him) they'll bring it to him.'

h. dēnnitu (belli) xerzu mæah.
thought-lsg-3sgm that went out-3pl with-3sgm
'I thought (him) that they went out with him.'

i. ttshabli muhend, lešbu mæah lbarḥ.
seemed(3sgm)-to-lsg Mohand played-3pl with-3sgm yesterday
'I thought (Mohand) they played with him yesterday.'
(39) POSSESSOR OF SUBJECT OF COMPLEMENT VERB

a. byitu bëli ṭamu.
want-lsg-3sgm 3sgf-come mother-3sgm
'I want (him) his mother to come.'

b. seftu żat ṭamu.
found-lsg-3sgm came-3sgf mother-3sgm
'I found (him) his mother had come.'

c. tsennitu yžiw flusu.
waited for-lsg-3sgm 3pl-come money-3sgm
'I waited for (him) his money to come.'

d. Ṣeftu (belli) żat ṭamu men leblad.
know-lsg-3sgm that came-3sgf mother-3sgm from the-village
'I know (him) that his mother came from the village.'

e. Ṣeftu (belli) żaw flusu.
saw-lsg-3sgm that came-3pl money-3sgm
'I saw (him) that his money came.'

f. xeftu tkun herbat meptu.
feared-lsg-3sgm 3sgf be ran away-3sgf wife-3sgm
'I feared (him) his wife had run away.'

g. kantmmennah yžiw flusu.
CONT-lsg-hope-3sgm 3pl-come money-3sgm
'I hope (him) his money will come.'

h. dennitu (belli) mša ḫbah lleblad.
thought-lsg-3sgm that went(3sgm) father-3sgm to-the-village
'I thought (him) that his father went to the village.'

i. ṭṭsḥablī muhen ṭqadat makeltu.
seemed(3sgm)-to-lsg Mohand finished-3sgf food-3sgm
'I thought (Mohand) his food was all gone.'
(40) POSSESSOR OF OBJECT OF COMPLEMENT VERB

a. býitu yddiw ṭṭun. 
   want-lsg-3sgm 3pl-take mother-3sgm to-the-hospital 
   'I want (him) them to take his mother to the hospital.'

b. lgitu ḥābu ḫlusu. 
   found-lsg-3sgm brought-3pl money-3sgm 
   'I found (him) they brought his money.'

c. tsennitu yūuf ṭṭbib ṭṭun. 
   waited for-lsg-3sgm 3sgm-see the-doctor mother-3sgm 
   'I waited for (him) the doctor to see him mother.'

d. ḍṛēftu (belli) ṣafu ḥu. 
   know-lsg-3sgm that saw-3pl brother-3sgm 
   'I know (him) that they saw his brother.'

e. smeētu (belli) serqu lwēbu ḫalaw. 
   heard-lsg-3sgm that stole-3pl the-bread POSS-3sgm 
   'I heard (him) that they stole his bread.'

f. xeftu yēderbu ḥu. 
   feared-lsg-3sgm 3pl-hit brother-3sgm 
   'I feared (him) they would hit his brother.'

g. kanttmennah yēesseiw ḥu. 
   CONT-lsg-hope-3sgm 3pl-beat brother-3sgm 
   'I hope (him) they'll beat his brother.'

h. dēnnitu (belli) ṣessaq ḥu ḡalaw. 
   thought-lsg-3sgm that beat-3pl brother-3sgm in-the-village 
   'I thought (him) that they beat his brother in the village.'

i. ttsḫāblī muhend ṭṭun. 
   seemed(3sgm)-to-lsg Mohand took-3pl mother-3sgm to-the-hospital 
   'I thought (Mohand) they took his mother to the hospital.'
(41) POSSESSOR OF OBLIQUE OBJECT OF COMPLEMENT VERB

a. byitu yleεbu ʃdaʃu.
    want-lsg-3sgm 3pl-play in-house-3sgm
'I want (him) them to play in his house.'

b. ñbeɾtu kayxedmu mea xuh.
    found-lsg-3sgm CONT-3pl-work with brother-3sgm
'I found (him) they were working with his brother.'

c. tsennitu yzidu fεlfus dyalu.
    waited for-lsg-3sgm 3pl-increase in-the-money POSS-3sgm
'I waited for (him) them to increase his money.'

d. ñreftu (belli) yadi ygelsu ѩda ŋmu.
    know-lsg-3sgm that FUT 3pl-sit beside mother-3sgm
'I know (him) that they're going to sit beside his mother.'

e. ñeftu kayheɾru mea ŋmu.
    saw-lsg-3sgm CONT-3pl-speak with mother-3sgm
'I saw (him) they were speaking with his mother.'

f. xeftu ykunu ttlagaw mea ƙbaŋ.
    feared-lsg-3sgm 3pl-be met-3pl with father-3sgm
'I feared (him) they'd met his father.'

g. kanttmennah yttlagaw mea ƙbaŋ w ywerrihum.
    CONT-lsg-hope.3sgm 3pl-meet with father-3sgm and 3sgm-show-3pl
'I hope (him) they meet his father and he shows them.'

h. ñennitu yadi yttlagaw mea ƙbaŋ, saεa ma ƙawš.
    thought-lsg-3sgm FUT 3pl-meet with father-3sgm but NEG came-3pl-NEG
'I thought (him) they were going to meet his father, but they didn't come.'

i. ñtteŋbli muhend, kanu kayheɾru mea ŋmu.
    seemed(3sgm)-to-lsg Mohand was-3pl CONT-3pl-speak with mother-3sgm
'I thought (Mohand) they were speaking with his mother.'
(42) RELATIVE CLAUSE

a. ṣɛɛftu matt lemṛa elli kaybya.
   know-lsg-3sgm died-3sgf the-woman that CONT-3sgm-love
   'I know (him) that the woman he loves died.'

b. ṣɛɛftu matt lemṛa elli katebyih.
   know-lsg-3sgm died-3sgf the-woman that CONT-3sgf-love-3sgm
   'I know (him) that the woman that loves him died.'

c. ṣɛɛftu matt lemṛa elli kant sakna mɛah.
   know-lsg-3sgm died-3sgf the-woman that was-3sgf living-f with-3sgm
   'I know (him) that the woman that was living with him died.'

(43) EMBEDDED QUESTION

a. yir ẓit nṣufek was nacə ulla fayq. (Cl)
   only came-lsg lsg-see-2sg whether sleeping or awake
   'I just came to see (you) if you were asleep or awake.'

b. byit nṣeɛfu waʃ ʃafuh fʃefɛru.
   want-lsg lsg-know-3sgm whether saw-3pl-3sgm in-Sefrou
   'I want to know (him) whether they saw him in Sefrou.'

c. w ḥa kayʃuf ddyab aʃ kayemlu belḥmar. (Cl)
   and Jha CONT-3sgm-see the-jackals what CONT-3pl-do with-the-donkey
   'and Jha was watching (the jackals) what they were doing with the
donkey.'

d. waʃ ɛreftuni aʃ maʃi ngullikum? (Cl)
   Q know-2pl-lsg what FUT lsg-say-to-2pl
   'Do you know (me) what I'm going to say to you?'

e. melll ɛreftu lgweffə aʃ fiха qbel ma tʃufuh! (C2)
   since know-2pl the-basket what in-3sgf before that 2pl-see-3sgm
   'since you know (the basket) what's in it before you see it!'
f. 'ana elli ěrēftu lāš kayṣlaḥ. (C1) 
   me that know-1sg-3sgm to-what CONT-3sgm-suitable
   'It's I that know (it) what it's good for.'

g. ma ěrēft ruṣna fin maṣyar! (C2)
   NEG know-1sg ourselves where going-pl
   'I don't know (ourselves) where we're going!'

In the examples in (36) through (41) above, the affix in the complement clause may occur in a variety of positions, the same range of positions as with Left-Dislocation. 7 In (36) the subject affix is the coreferential element, and in (37) the lower clause affix is in object position. In (38) the complement clause affix appears as an oblique object, and in (39) through (41) the lower clause affix is a possessor, an affix attached to an NP in subject, object, and oblique object positions. The sentences in (42) and (43) show that constituent control is not involved in MO Dislocation, since there is a relation between the matrix object and an element inside an island in these sentences.

Since all the argument positions of the lower verb are filled, the matrix object cannot be an argument of the complement verb. Rather, it

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7 The sentences in (36) through (38) are better than those in (39) through (41). Of (39) through (41), the sentences in (39) are more acceptable than those in (40), which are better than those in (41). Most of the sentences in (39) through (41) require a very specific context in order to be acceptable, as there are simpler and more common ways of expressing the same ideas in Moroccan. When a particular context is furnished, however, the sentences become more easily understandable, and thus more acceptable. Nevertheless, some speakers may still find several of the (39) through (41) sentences unacceptable, not being able to imagine a context in which they make sense. Semantic considerations, as demonstrated in Section 3.3.2.1, are very important in the interpretation of MO Dislocation sentences.
appears in a position of prominence with respect to the complement clause, by which a special emphasis is placed on an NP which is involved in some manner in the complement clause.

Intonation plays an important role in the interpretation of several of the preceding sentences. In each case of the sentences in (36) through (41), there is a slight pause after the MO dislocated NP, and in the case of the perception verbs and the verb ɛ̃ref 'know,' a rising intonation must be paired with the pause. The intonation pattern distinguishes between two readings of the same string, in cases where the verb selects an optional object: one which involves physical perception of the entity denoted by the matrix object, and other where physical perception of the object denotee is not necessarily involved. The two cases are illustrated below.

(44) a. Ṣeftha dəxlat leďdar.
saw-lsg-3sgf entered-3sgf to-the-house
'I saw her go in the house.'

b. Ṣeftha, dəxlat leďdar.
saw-lsg-3sgf entered-3sgf to-the-house
'I saw that she went in the house.'

In sentences like (44a), the object of the matrix verb is its thematic object, denoting the person actually perceived, while in (44b) the object is non-thematic, in that that person is not necessarily the object of the perception. (44b) is synonymous with sentence (45) below, the only difference being that in (44b) the matrix object has received prominence which the corresponding PRO subject in (45) has not received.
In the following section I will discuss the nature of the relation between the foregrounded NP and its coreferential element in the lower clause.

3.3.2 The matrix object-lower clause affix relation

Evidence for the existence of a relation between the matrix object and the lower clause affix comes from the fact that the presence of the matrix object is sanctioned only by the presence of a coreferential element in the embedded clause, as sentences without this element are ungrammatical (cf. (35)). This requirement is the same as that of the Left-Dislocation construction, in which anaphoric binding relates the fronted NP to its coreferential counterpart in the associated sentence.

Left-Dislocation involves an NP which does not itself correspond to a predicate argument. It is, however, bound to an NP which is an argument of a verb, and therefore the dislocated element receives an interpretation. The same process is involved in the examples of MO Dislocation presented above. The interpretation of the matrix object depends on there being an affix in the complement clause with which it is coreferential, to which it can be anaphorically bound.

The sentences in (46) and (47) below demonstrate that the same coreference restrictions hold for MO Dislocation as for Left-Dislocation.
In the (a) sentences, the second instance of the NP *muhend* could not be coindexed as coreferential to the dislocated NP, as it is not a pronoun.

In the (b) sentences, the two NPs are both pronominal, but the only possible interpretation is for them to be coreferential.

The coreferentiality requirement does not hold for all constructions involving sentential complements. In the sentences in (48) below, coreference between the NPs is not required, nor is a pronominal element necessary.

(48) a. *gal*TIliyya bellI heDru meahaj ybarb.
    said-3sgf-to-1sg that spoke-3pl with-3sgf yesterday
    'She told me that they spoke with her yesterday.'

b. *gal*TIliyya bellI heDru mea najatj ybarb.
    said-3sgf-to-1sg that spoke-3pl with Najat yesterday
    'She told me that they spoke with Najat yesterday.'

In (48a) the oblique affix in the lower clause can either be interpreted as coreferential with the matrix subject, or as disjoint in reference from it.
The restriction on coreferentiality shows up in sentence (48b), where the lower NP is not pronominal, and thus coreference is excluded. If the subject of the matrix verb and the NP *nażat* are interpreted as disjoint in reference, the sentence is well-formed. With MO Dislocation and Left-Dislocation, on the other hand, the possibility of disjoint reference between the matrix object NP and a particular lower clause pronominal affix is not available.

The reason that disjoint reference is not possible with Left-Dislocation is that, as mentioned above, the dislocated NP is outside the argument list of any verb, and therefore cannot be interpreted on its own. It is only by virtue of its coreference to another NP that it receives an interpretation. In terms of relations between NPs, the sentences in (47) have shown that MO Dislocation behaves like Left-Dislocation in requiring coreference between matrix and lower NPs.

I propose that both constructions are, in fact, the result of the same process, namely anaphoric binding, which is subject to conditions on coreference. The MO Dislocation construction is further subject to semantic conditions, discussed in the next section. These conditions do not, however, bear on the fact that the operation involved in MO Dislocation is anaphoric binding, as with Left-Dislocation.

I have said that with Left-Dislocation disjoint reference between the dislocated NP and a pronoun in the following sentence is not possible because the dislocated NP is not itself an argument of a verb. It needs a coreferential element to receive an interpretation. I will make the same claim for MO dislocated NPs: they are not thematic arguments of the matrix verb, and thus to be interpreted they need a coreferential element in the
lower clause. It is for this reason that disjoint reference is not possible between the MO dislocated NP and the lower clause affix, just as it is not possible with Left-Dislocation. I will return in a later section to a discussion of the claim that the MO dislocated NPs are not thematic arguments of the matrix verb.

3.3.2.1 The semantics of MO Dislocation

These facts point to an important aspect of the MO Dislocation construction. With Left-Dislocation, as there is no verb involved with the dislocated NP, there are no semantic requirements holding between that element and its associated sentence. With MO Dislocation, however, the dislocated element is the object of a verb which is subcategorized to take a complement clause. The presence and meaning of this matrix verb impose a special connection between the dislocated NP and the complement sentence, but one which is also limited by these same two factors. With the MO Dislocation construction, the dislocated NP is put in a position of prominence in the sentence, and, depending on the meaning of the matrix verb, this foregrounding entails certain expectations of the relationship between the person or entity denoted by the matrix object and the event described in the complement clause.

In many cases, as with the verbs bya and tseenə, the person or entity denoted by the matrix object must have some control over the action indicated by the complement clause. With bya 'want' this person or entity is expected to bring about this action. The English translations I have given do not reflect this requirement, as such sentences as (39a) 'I want him for his mother to come,' and (39c) 'I waited for him for his money to come' do not
exist in English. In Moroccan, sentence (39a) implies that the matrix object person will somehow be involved in getting his mother to come. (39c) implies that the speaker is waiting for the matrix object person's money to come so that he will do something specific with that money, e.g., give the speaker some. Thus, a sentence such as (49a) below is unacceptable in Moroccan.

(49) a. *byitu teṭtes  mμu.
    want-lsg-3sgm 3sgf-sneeze mother-3sgm
    I want him for his mother to sneeze.

b. byit  mμu teṭtes.
    want-lsg mother-3sgm 3sgf-sneeze
    'I want his mother to sneeze.'

Sentence (49a) does not make sense because the matrix object person could not normally have any relation to the act of his mother's sneezing. In (49b), however, since the object of the matrix verb is the same person who will do the sneezing, there is no problem of involvement in the action, and thus the sentence is acceptable.

With regular Left-Dislocation, the semantic restriction does not hold, as there is no verb associated with the dislocated NP, and thus a sentence such as (50) below is perfectly well-formed.

(50) mɯhend, seṭsat  mμu.
    Mohand sneezed-3sgf mother-3sgm
    'Mohand, his mother sneezed.'

With the verbs ʂaf 'see,' smɛɛ 'hear,' and lɛa 'find,' the semantic requirement is slightly different than with the previous verbs. With these verbs what is required is that there be some sort of physical evidence
for the seeing, hearing, or finding. This requirement does not mean that the object of the verb itself is the thing seen, heard, or found; it merely means that something must be perceived. The sentences below illustrate this fact.

(51) a. dxelt leďdar w ġeftu ma kayns. entered-1sg to-the-house and saw-1sg-3sgm NEG being there-NEG 'I went into the house and saw (him) that he wasn't there.'

b. mšit 1ďaru w ġitu ma kayns. went-1sg to-house-3sgm and found-1sg-3sgm NEG being there-NEG 'I went to his house, and I found (him) that he wasn't there.'

In sentence (51a) the speaker did not see the person referred to by the matrix object because he wasn't there. In (51b), that person could not have been found because he wasn't at his house. Thus, the entity or person denoted by the matrix object is not necessarily the thing or person perceived. What is perceived in these cases is a certain state of affairs.

Sentence (52) below has a more specialized meaning.

(52) ġeftu ġat Ṣṣamu men leblad. saw-1sg-3sgm came-3sgf mother-3sgm from the-village 'I saw (him) that his mother came from the village.'

Such a sentence would only be acceptable if it meant that every time his mother came from the village he did a particular thing, e.g., sat a certain way or dressed a certain way, and that the speaker knew this and saw him in that particular state. What is important in this sentence is that the state of the person is what is seen, not the person himself. He may be the one in that state, but it is not enough for the sentence to be well-formed for the speaker to see him; the speaker must see him in that particular state.
With the verb *hear,* something must be heard by the speaker in order for the sentence to be acceptable, but what is heard need not be the entity or person denoted by the matrix object, but some indirect source of noise. Thus, for the perception verbs there are perception requirements when they occur in an MO Dislocation structure, even when the entity referred to by the matrix object is not the object of that perception.

The verb *know,* on the other hand, is much freer than the perception verbs in terms of restrictions on its complement clause with the MO Dislocation construction. There is thus a sort of hierarchy of semantic restrictiveness in the class of MO Dislocation verbs with respect to their complement clauses. The meaning of the verb itself limits the possibilities for a well-formed relationship between the person or entity denoted by the dislocated NP and the event described in the complement clause.

The requirement that the entity denoted by the matrix object be involved in some manner in the event described in the complement clause is easily met if the matrix object denotee is the subject or object of the complement clause. It is much more difficult to find sentences that make sense in which the matrix object is not the subject or object of the embedded sentence. The farther away from the complement subject or object the dislocated NP's referent is, the less likely the possibility becomes that the entity denoted by this NP will be involved in the proceedings described in that clause. It is for this reason that the sentences in (39) through (41) are less acceptable than those in (36) through (38); it is merely more difficult to envision cases in which the sentence makes sense.
The problem is one of semantics rather than a fact about sentence grammar. Nevertheless, the existence of sentences like those in (39) through (41) is not crucial to the discussion in this chapter. Even if such sentences did not exist, the existence of the forms in the sentences in (37) and (38), where the matrix object is coreferential with an affix in object or oblique object position in the complement clause, justifies the conclusion that control is not involved, and that rather the operation is one of anaphoric binding, as with Left-Dislocation.

The important fact about the MO Dislocation sentences is that the matrix object is not directly associated with a semantic argument of the matrix verb. It is the object of that verb, as I will demonstrate below; the precise nature of the relation between the matrix verb and its object is the subject of Section 3.3.5 below.

The semantic restrictiveness of MO Dislocation is one way in which this construction differs from Left-Dislocation; other differences are discussed in Section 3.3.4 below.

A similarity between the two constructions, however, is that they both act to give prominence to certain NPs. With Left-Dislocation it was seen that non-specific NPs, including idiom chunks, could not appear in Left-Dislocation position. This fact is a reflection of the more general prohibition against non-specific items receiving prominence in a sentence.

Since MO Dislocation serves to place prominence on NPs, as does Left-Dislocation, it is to be expected that non-specific items, including non-referential idiom chunks, would not be possible in MO Dislocation position, just as they do not occur in Left-Dislocation position. This prediction is
borne out, as the unacceptability of the sentences in (53) below shows.

(53) a. *€ref muhend ši kelb (belli) ŋeftu fezzenqa.
   know(3sgm) Mohand some dog that saw-1sg-3sgm in-the-street
   Mohand knows some dog that I saw it in the street.

   b. *€reft ilwalb (belli) zeyyruhum11h.
   know-1sg the-screws that tightened-3pl-3pl-to-3sgm
   I know the screws that they tightened them to him.

   c. *€eft lma (belli) hezzu.
   saw-1sg the-water that lifted(3sgm)-3sgm
   I saw the water that it lifted.

   d. *€efttha (belli) ḍrebha bsekra.
   saw-1sg-3sgf that hit(3sgm)-3sgf with-drunkenness
   I saw her that he hit her with a drunkenness.

   e. *€efttha tartlih. (vs. tartlih. 'He got angry.'
   know-1sg-3sgf 3sgf-flew-to-3sgm
   lit. 'She flew to him.')
   I know her she flew to him.

In each case in (53) above, a non-specific NP appears in MO Dislocation position, and the sentences are ungrammatical. The (b) through (e) sentences have an idiom chunk in the position of prominence, but, as they are non-referential, and therefore non-specific, they may not be MO dislocated, just as they may not be left-dislocated.

3.3.3 Optionality of MO Dislocation

Before discussing the matrix verb-matrix object relation, I must first note that the presence of this matrix object is optional; that is, all the sentences in (36) through (41) are perfectly well-formed without the matrix object, though there is a difference in prominence on a particular NP between the sentences with that object and those without it. The (a) and (b) sentences in (54) and (55) below have roughly the same meaning, but
there does exist a difference in terms of emphasis.

(54) a. I want John to go.
   b. John, I want him to go.

(55) a. ħreft belli kayfhem ʾšelḥa.
      know-lsg that CONT-3sgm-understand Berber
      'I know that he understands Berber.'

   b. ʾereftu belli kayfhem ʾšeḥla.
      know-lsg-3sgm that CONT-3sgm-understand Berber
      'I know (him) that he understands Berber.'

The discussion in Section 3.3.5 below will not involve sentences such as that in (55a), but rather those in which the matrix object is present, as in (55b).

3.3.4 The structure of MO Dislocation

Since MO Dislocation shares many properties with Left-Dislocation, one might assume the structure of the MO Dislocation sentences to be represented by the structure in (56) below, by analogy to the Left-Dislocation structure given above in (33).

(56)
The above structure implies that the dislocated NP is not the object of the matrix verb, but that it has been left-dislocated to a position under the embedded S. The dislocated NP cannot be in the matrix clause, as under the theory of category type and functional relations, S must be a closed function; its constituents are not, then, functionally transparent, and thus no item can be raised from inside a closed function, nor can an item inside an S be governed by a verb outside that S.

Structure (56) entails the claim that verbs do not subcategorize for an object and complement, but rather for just a complement. Evidence from strict subcategorization, however (see below), indicates that both possibilities are necessary to distinguish between classes of verbs. There are also several other indications that structure (56) is not the correct structure for the MO Dislocation sentences.

One such indication is the fact that reflexives may occur in MO Dislocation position, whereas they do not occur in Left-Dislocation position. These facts are exemplified in the sentences below.

(57) a. *rași, ma șreft fin mași.
   myself NEG know-lsg where going(m)
   *Myself, I don't know where I'm going.

b. ma șreft rași fin mași.
   NEG know-lsg myself where going(m)
   'I don't know (myself) where I'm going.'

The examples in (57) indicate that MO Dislocation allows reflexives to receive prominence, while Left-Dislocation does not. In (57a), the reflexive anaphor rași 'myself' (lit. 'my head') is in Left-Dislocation position, and the sentence is ungrammatical. In (57b), however, the NP
\textit{rasu} appears in MO Dislocation position, yielding a grammatical sentence.

The reason for the difference between these two constructions is that a reflexive anaphor must have an antecedent within its minimal clause nucleus, as mentioned above in Section 3.2.1. The sentences below show that this generalization holds true for Moroccan.

\begin{align*}
(58) & \quad \textit{a. *gallihum bellî ra\textsuperscript{su} ma \u{y}adî\u{\i} ym\textsuperscript{s}i.} \\
& \quad \text{said(3sgm)-to-3pl that himself NEG FUT-NEG 3sgm-go} \\
& \quad *He told them that himself he wasn't going to go.} \hspace{1cm} \\
& \quad \textit{b. gallihum bellî hew\textsuperscript{wa} ma \u{y}adî\u{\i} ym\textsuperscript{s}i.} \\
& \quad \text{said(3sgm)-to-3pl that him NEG FUT-NEG 3sgm-go} \\
& \quad 'He told them that he wasn't going to go.' \\
& \quad \textit{c. gallihum bellî na\textsuperscript{\textordmasculine{z}}at, ma \u{y}adî\u{\i} y\u{\textordmasculine{s}}ufha \u{y}ed\textsuperscript{da}.} \\
& \quad \text{said(3sgm)-to-3pl that Najat NEG FUT-NEG 3sgm-see-3sgf tomorrow} \\
& \quad 'He told them that Najat, he wasn't going to see her tomorrow.' \hspace{1cm}
\end{align*}

In (58a), the anaphor \textit{rasu} does not have an antecedent in its minimal clause nucleus. Its antecedent is the subject of the higher clause. (58b) indicates that (58a) is ungrammatical because the prominent constituent is a reflexive, not because the structure of the sentence is impossible. \textit{hew\textsuperscript{wa}} is an independent pronoun, used as an emphatic, and in (58b) it occurs in Left-Dislocation position in the lower clause. Similarly, in (58c), the NP \textit{na\textsuperscript{\textordmasculine{z}}at} is in Left-Dislocation position in the lower clause. Since (58b) and (58c) are well-formed, it is therefore a restriction on the interpretation of reflexives that rules out sentence (58a).

Sentence (43g), repeated below for convenience, provides another example of a reflexive in MO Dislocation position. In this case, however, there is not identity of reference between the reflexive and its antecedent.
In the above sentence, the reflexive *ruṣna is plural, while its antecedent, the subject of the verb *efet 'I know,' is singular. This subject is, however, one of the people to which *ruṣna refers, and therefore it can act as an antecedent to the reflexive. If an NP is not one of the referents of a reflexive, then it cannot function as the antecedent to that anaphor. This fact is illustrated by the ungrammaticality of (59) below.

(59) *muhend ma *efet *ruṣna fin maṣyin.
Mohand NEG know(3sgm) ourselves where going-pl
*Mohand doesn't know ourselves where we're going.

In sentence (59), muhend is not included in the referents of *ruṣna, and therefore it cannot function as its antecedent.

Just what the restrictions are on identity between anaphor and antecedent remains to be determined. The facts illustrated by the sentences below give some indication of these restrictions.

(60) a. *efet *ruṣna fettilivizyun. / *eftnana fettilivizyun.
saw-lsg ourselves on-the-television / saw-lsg-lpl on-the-television
'I saw ourselves /*I saw us on television.'

b. *efnana *ruṣna fettilivizyun / *efnana fettilivizyun.
saw-lpl ourselves on-the-television / saw-lpl-lpl on-the-television
'We saw ourselves /*We saw us on television.'
c. *waš ŋefti řušna ケットtлиизyun? /waš ŋeftina ケットtлиизyun?
   Q saw-2sg ourselves on-the-television/Q saw-2sg-1pl on-the-T.V.
   *Did you see ourselves / √Did you see us on television?

d. waš ŋefti řuškum ケットtлиизyun?/*waš ŋeftikum ケットtлиизyun?
   Q saw-2sg yourselves on-the-television/Q saw-2sg-2pl on-the-T.V.
   'Did you see yourselves / *Did you see you (pl) on television?'

As demonstrated in the sentences in (60) above, the first person
does not occur with a first person object affix; it must occur with a
reflexive object. The second person requires a reflexive object as well,
and the second person cannot be included in the referents of a first person
reflexive.

There is a case, however, where a second person verb occurs with a
second person object rather than a reflexive. This example may be an
idiomatic usage, however, and as such may not be a counterexample to the
generalization given above. This example is shown in (61) below.

(61) a. xellik!
   leave(IMPERATIVE)-2sg
   'Stay (there)!'
   (used, for example, when a person gets up
   from a chair to let another sit down, and
   the standing person refuses the seat.)

b. *xelli . řašek!
   leave(IMPERATIVE) yourself

It was shown above that MO Dislocation is more restricted than Left-
Dislocation in terms of semantics, but the reflexives case shows that not
only does the matrix verb restrict some sentence possibilities, it also
licenses others that cannot occur with Left-Dislocation. Since with
structure (56) the reflexive anaphor would not have an antecedent in its
minimal clause nucleus, this structure must be rejected.
The case of independent pronouns provides another example of a difference between Left-Dislocation and MO Dislocation, and furnishes evidence that MO dislocated NPs are indeed objects of the matrix verb.

Independent pronouns, as mentioned above in Section 3.2.3, cannot occur in object or oblique object position, though they do occur in Left-Dislocation position. As dislocated items, they are related to pronominal affixes in a variety of positions, including object and oblique object, by anaphoric binding. Independent pronouns cannot, however, appear in MO Dislocation position, as indicated by the ungrammaticality of the sentences below.

(62) a. *€řeft hiyya ma yadiš nāṣufuha fṣeṭrou.
   know-lsg her NEG FUT-NEG 1pl-see-3sgf in-Ṣefrou
   I know _her_ that we're not going to see her in Sefrou.

b. *ṣeṭf hewwa ma bγaš yh deber mēahum.
   saw-lsg him NEG want(3sgm)-NEG 3sgm-speak with-3pl
   I saw _him_ he doesn't want to speak with them.

Independent pronouns cannot appear in MO Dislocation position, as indicated above, because the MO Dislocation position is an argument position; specifically, an object position. Thus, it is to be expected that items that cannot appear in object position would not be allowed to appear in MO Dislocation position, and indeed such is the case with independent pronouns.

Since the MO Dislocation position is an object position, as evidenced by the fact that reflexives may appear in that position and independent pronouns may not, for the reasons given above, structure (56) must be rejected.

(Note that MO Dislocation position cannot be the subject position, as,
when a lexical subject is present, the MO dislocated NP follows the subject NP, just as does a normal object:

(63) ́šaf muhend nažat bellı dexlat ləddar.
saw(3sgm) Mohand Najat that entered-3sgf to-the-house
'Mohand saw (Najat) that she went in the house.'

Nor is MO Dislocation position an oblique object position for the examples given above, as oblique NPs require prepositions, and no prepositions occur with the MO dislocated items; the MO Dislocation verbs seen so far do not subcategorize for oblique arguments with their complements.)

There is yet another reason to reject structure (56). This structure should provide a sentence with a left-dislocated item in the lower clause, and would predict that the left-dislocated item would occur preceding the complementizer. When an NP is left-dislocated in an embedded clause, however, the dislocated item appears following the complementizer, not preceding it. Thus, structure (56) would predict that sentence (64a) below would be grammatical, whereas in fact it is not. (64b) shows the correct order of the constituents in a sentence with a dislocated item in the lower clause.

(64) a. *gallihum nažat bellı ma γadiš ỵufha ỵedda.
said(3sgm)-to-3pl Nazat that NEG FUT-NEG 3sgm-see-3sgf tomorrow
He told them Najat that he wasn't going to see her tomorrow.

b. gallihum bellı nažat, ma γadiš ỵufha yaγedda.
said(3sgm)-to-3pl that Najat NEG FUT-NEG 3sgm-see-3sgf tomorrow
'He told them that Najat, he wasn't going to see her tomorrow.'

The order of the constituents in sentence (64a) above is that found with MO Dislocation verbs, as shown in (65) below.
(65) ɛref nažat bellı ma ɣadiš yṣufha ɣedda.
know(3sgm) Najat that NEG FUT-NEG 3sgm-see-3sgf tomorrow

'He knows (Najat) that he's not going to see her tomorrow.'

Since (65) is well-formed, and (64a) is not, (64a) must be ungrammatical because an NP has been dislocated in the lower clause in a position that is not the correct one for Left-Dislocation in a lower clause. The position of the dislocated NP in (64a) and (65) is MO Dislocation position. Since, however, gal 'say' is not an MO Dislocation verb, sentence (64a) is ill-formed. ɛref is an MO Dislocation verb, and thus (65) is well-formed.

(64b) shows that when an NP is dislocated in the lower clause, it appears in the position following the complementizer, contrary to the prediction of structure (56). Since structure (56) makes incorrect predictions as to constituent order in the lower clause with Left-Dislocation in that lower clause, that structure must be rejected.

I stated at the beginning of this chapter that not all verbs can take the MO Dislocation construction, that it is a lexically determined property of verbs. An example of a verb that is not an MO Dislocation verb, gal, was illustrated in (64) above. It was shown that this verb cannot take a dislocated object together with a sentential complement. gal is subcategorized for a sentential complement with no object, as shown in (64).

The class of verbs which take sentential complements but not a dislocated object with a complement includes the verbs ñhem 'understand,' ndem 'regret,' nker 'deny,' and ṅekk 'doubt.' The sentences below illustrate that these verbs do not occur with MO Dislocation, though they do take sentential complements.
(66) a. fhemt bellī yādī yūfuh yedda.
understood-lsg that FUT 3pl-see-3sgm tomorrow
'I understand that they are going to see him tomorrow.'

b. *fhemtu bellī yādī yūfuh yedda.
understood-lsg that FUT 3pl-see-3sgm tomorrow
'I understand (him) that they are going to see him tomorrow.'

(67) a. ndemt elli mša.
regretted-lsg that went(3sgm)
'I regretted that he went.'

b. *ndemtu elli mša.
regretted-lsg-3sgm that went(3sgm)
'I regretted (him) that he left.'

(68) a. nkert bellī kla lxwebz.
denied-lsg that ate(3sgm) the-bread
'I denied that he ate the bread.'

b. *nkertu bellī kla lxwebz.
denied-lsg-3sgm that ate(3sgm) the-bread
'I denied (him) that he ate the bread.'

(69) a. kanšekk waš had leḥkaya šhiḥa.
CONT-lsg-doubt whether this the-story true-f
'I doubt if this story is true.'

b. *kanšekkha waš šhiḥa.
CONT-lsg-doubt-3sgf whether true-f
'I doubt (it) if it's true.

Since these verbs take sentential complements, but not the MO Dislocation construction, strict subcategorization is needed in order to distinguish the class of MO Dislocation verbs from other verbs in Moroccan that take a COMP.

Therefore, as structure (56) cannot make a distinction between the two classes of verbs, those which are subcategorized for an object and a sentential
complement, and those which take only a sentential complement, the structure must be rejected.

Since structure (56) is not appropriate for the MO Dislocation construction, then, for the reasons given above, I will reject this structure and propose the MO Dislocation construction to have roughly the structure given in (70) below.

(70)

3.3.5 The matrix verb-matrix object relation

Structure (70) asserts that the MO dislocated NPs are objects of the matrix verb. The justification for the objecthood of these MO dislocated items comes from several factors: (a) they are attached to the matrix verb when they are pronominal; (b) when pronominal, they have exactly the shape of object affixes, and cannot be prepositional affixes, as the MO Dislocation verbs do not subcategorize for oblique arguments; (c) reflexives, which must have a local antecedent, can appear in the MO Dislocation position; and (d) independent pronouns, which cannot be objects, cannot appear in MO
Dislocation position.

According to the θ-Criterion of Chomsky (1981), the object of a verb must be assigned a thematic role by that verb. However, as the following sentences illustrate, the dislocated NP is not always semantically the object of the matrix verb, and thus it does not receive a thematic role from that verb.

(71) melli dxelt leđdar, lgit muḩend ma kaynā.  
when entered-slg to-the-house found-lsg Mohand NEG being there-NEG

'I When I got home, I found (Mohand) that he wasn't there.'

(72) muḩend ṭah felmeɣrib, walakin şeftu ma byaʃ yẓi  
Mohand is in-Morocco but saw-lsg-3sgm NEG want(3sgm)-NEG 3sgm-come

εendna lmirikan.  
to-1pl to-America

'Mohand is in Morocco, but I saw (him) that he doesn't want to come to our place in the States.'

(73) ma kanεʃfuʃ gæ, walakin ᵉṛeftu aʃ yadi  
NEG CONT-lsg-know-3sgm-NEG at all but know-lsg-3sgm what FUT
ygululih.  
3pl-say-to-3sgm

'I don't know him at all, but I know (him) what they're going to tell him.'

In sentence (71), though the NP muhend is the object of the verb lgit  
'I found,' the speaker did not find Mohand because he wasn't there. What that person did find is that Mohand wasn't there. In this case, then, the NP muhend is not a thematic argument of the verb lgit; at least, this NP does not correspond to the thematic role usually associated with the OBJ of the verb lga, that is, the "thing found." In sentence (71), the propositional complement 'Mohand wasn't there' corresponds to the "thing found" thematic role; since arguments of a verb must be associated with unique thematic roles,
the NP *muhend* may not have the "thing found" thematic role.

The same problem arises in sentence (72). Here, assuming the speaker to be in the U.S., he/she could not possibly see Mohand because he is in Morocco. What the speaker does see is that Mohand doesn't want to come to the States. Thus, the thematic role corresponding to the "thing perceived" cannot be associated with the OBJ argument of the verb *seft* 'I saw' in the above sentence, as that thematic role is associated with the propositional complement; the person denoted by the object affix -u 'him' was not perceived at all.

In sentence (73) the speaker clearly states that he/she doesn't know a certain person, but does know something about him, i.e., what "they" are going to tell him. In this case, as in the sentences above, the object of the verb cannot be associated with the thematic role corresponding to the "thing known." Rather, this thematic role is associated with the propositional complement COMP subcategorized for by the verb *creft* 'know.'

Since the matrix objects in the above sentences do not correspond to an argument of the matrix verb in the usual manner for object arguments, one possibility for their interpretation is that they are associated with a more unusual thematic role, "about X, of X." This analysis would involve the optional addition of a semantic argument, an "about X" argument, to the argument list of the MO Dislocation verbs. Thus, in sentence (73) above, the object of the verb *creft* would be associated with the "about X" argument, and the sentence would have the meaning "I don't know him, but I know about him what they're going to say to him." Sentence (71) would have the meaning "When I got home, I found about Mohand that he wasn't there."
If the MO dislocated object is associated in this manner with a semantic argument of the matrix verb, then it is a thematic argument of that verb. As such, the MO dislocated object would not constitute a violation of the Projection Principle (see below).

This analysis, however, does not provide a unified account of the MO Dislocation facts. Though the above sentences might seem to allow a paraphrase with "about," other MO Dislocation sentences do not allow that meaning. Sentences (36c) and (36f), for example, do not have a paraphrase with "about," as indicated below.

(36c) taennitu yżi men leblad.
   'I waited for him to come from the village.'
   *I waited about him he come from the village.

(36f) xafftu yylebha felklam.
   'She feared (him) that he would defeat her with words.'
   *She feared about him that he would defeat her with words.

Since these sentences do not have the "about X" meaning for their matrix objects, the postulation of an optional "about X" argument with these verbs is not motivated. In fact, the paraphrase of most MO Dislocation sentences is simply the corresponding non-MO Dislocation sentence. The difference between the MO Dislocation form and the non-MO Dislocation form is merely that the matrix object receives prominence with respect to the complement clause in MO Dislocation sentences, whereas with non-MO Dislocation sentences this prominence is not involved. The prominence accorded to the MO dislocated object is the same prominence given to a left-dislocated NP with respect to its subordinate clause.
Thus, under the argument addition analysis given above, only certain MO Dislocation verbs would allow association of their object with an "about X" argument, and therefore the analysis under which the matrix object is a thematic argument of the matrix verb would only provide an adequate account of a sub-class of the MO Dislocation verbs. I therefore reject this analysis, and assume for the moment that the matrix object in the MO Dislocation construction is a non-thematic argument of the matrix verb. I will show later in this chapter that in fact the MO dislocated object bears a range of relations to the matrix verb, from thematic to non-thematic argument of that verb, depending on the verb in question.

The concept of non-thematic arguments has been used in both GB and LFG to characterize the subject of such verbs as seem in English, in a sentence such as (74) below.

(74) Debbie seems happy.

With seem, the thematic subject in the above sentence is the proposition "Debbie (is) happy"; to derive sentence (74), the NP Debbie has been "raised" from the position of subject of the complement clause to subject position in the main clause.

The MO Dislocation sentences are similar to those in English involving raising-to-object, in which the matrix verbs appear to have an object, but in fact have a propositional complement and a non-thematic object. One such verb is believe, and its use in a "raising" construction is illustrated in sentence (75) below.

(75) I believe Gretchen to have done good work.
In sentence (75), what is believed is not Gretchen, but rather that she has done good work. In this sentence, the object Gretchen is a non-thematic argument of the verb believe, which functions as the subject of the following XCOMP.

In an LFG analysis, sentences such as (75) have the following c-structure (with functional notation).

(76)

The verb believe has the following lexical entry:

(77) believe : V, tPRED='BELIEVE<(SUBJ)(XCOMP)>'(OBJ)
    tOBJ=tXCOMP SUBJ

The lexical rule of functional control provides the control equation in this lexical entry, which stipulates that the object of the verb believe functions as the subject of its XCOMP.

The use of the angle brackets in (77) indicates that the arguments inside the brackets are those on which the verb exerts selectional restrictions, those associated with a thematic argument of the verb. Since the
OBJ argument is outside the angle brackets, it is not a semantic argument of the verb believe. Thus, this verb exerts selectional restrictions on its subject and complement, but not on its object.

Bresnan (1982a) assumes that non-thematic objects exist in English only in a control situation, like Raising, when they are functionally the subject of a complement. Non-thematic objects elsewhere in English (except for idioms) would violate the requirement that functional structures be "semantically coherent," because English lacks a mechanism for the semantic interpretation of such arguments. Semantic coherence requires that all arguments receive a semantic interpretation (Bresnan (1982a)).

Sentence (78) below is an example of a sentence whose f-structure is both syntactically and semantically incoherent.

(78) *Bob saw Diane Terry.

Sentence (78) is not well-formed because the lexical form of the verb see contains only one OBJ argument, whereas in the above sentence the verb saw has a second object. Thus, the second object cannot be bound to an argument in the predicate argument structure of the verb see, and the structure is not syntactically coherent. Nor is there any rule of English or control equation associated with the verb see that would assign a semantic interpretation to the extra object. Thus, semantic coherence is also violated in sentence (78).

The verb see contrasts with a verb such as cost in English, which subcategorizes for an object and a second object, and therefore the second object with cost does receive a semantic interpretation. The sentence below illustrates an example of the use of the verb cost, where both an
object and a second object appear and receive a semantic interpretation.

(79) That book cost me my last dollar.

In a GB analysis, sentence (75) above has the following structure.

(80) \[ _{\overline{S}} \text{I believe} \left[ \overline{S} \text{Gretchen to have done good work.} \right] \]

Non-thematic objects are not allowed in GB, as their existence would be a violation of the Projection Principle together with the \( \theta \)-Criterion. These principles are defined below.

(81) a. Projection Principle

"Representations at each syntactic level (i.e., in LF, and D- and S-Structure) are projected from the lexicon, in that they observe the subcategorization properties of lexical items."

[Chomsky (1981:29)]

b. \( \theta \)-Criterion

"Each argument bears one and only one \( \theta \)-role, and each \( \theta \)-role is assigned to one and only one argument."  [Chomsky (1981:36)]

By the principles given above, a verb which takes a clausal complement is subcategorized only for an \( \overline{S} \) in the lexicon, and therefore the existence of a non-thematic object at some other level of representation would violate the requirements of the above principles.

Given the Projection Principle and the \( \theta \)-Criterion, then, the NP Gretchen in sentence (75) above cannot be considered an object of the matrix verb. If it were an object of that verb, it would necessarily be assigned a \( \theta \)-role, and, as shown above, that NP is not a thematic argument of the matrix verb. It must therefore be the subject of the \( \overline{S} \) complement to the
matrix verb, and therefore receives a thematic role from the complement. A rule of S deletion allows the verb believe to assign case to the subject of its complement.

With respect to MO Dislocation, however, the dislocated NP cannot be in the lower clause, for reasons discussed in Section 3.3.4. It cannot be a thematic argument of the lower clause verb, as all of the arguments of that verb are present in the lower clause. This situation is reminiscent of Left-Dislocation, where there is no possible verb that could include the dislocated NP as one of its arguments. The dislocated NP thus receives an interpretation by anaphorically binding with a coreferential element in the associated sentence.

With MO Dislocation, as with Left-Dislocation, the dislocated NP receives an interpretation by being anaphorically bound to a coreferential pronominal element in the complement clause. This is the only way the MO dislocated NP receives an interpretation.

The following discussion shows that in Moroccan, non-thematic objects are needed independently of the MO Dislocation construction.

Non-thematic objects exist in Moroccan in certain idiomatic expressions. An example of one such idiomatic expression was given in (29a) above. It is repeated here for convenience.

(29a) drebha bsekra.
    hit(3sgm)-3sgf with-drunkenness
    'He really got drunk.'

The pronominal affix -ha is invariable in this expression, and has no reference; that is, it does not refer to anyone or anything with the features
third person feminine singular. The verb *dreb* 'hit' takes an object, but in this sentence nothing or no one was hit. Therefore, the pronominal object does not correspond to a thematic argument of the verb *dreb*. The expression *drebha b-,* in which the suffix *-ha* is invariable, but the verbal subject affixes are not, can take several other NPs besides *sekra*, and means in general "He (I, we, you, they, etc.) really did X." A second example with this expression is given in (82) below, and (82b and c) are examples of other idiomatic expressions which involve the non-thematic object *-ha*.

(82) a. *drebha bneesa.*
    hit-1sg-3sgf with-a sleep
    'I really slept.'

b. *etaha llemsarya / lsekra / etc.*
    gave(3sgm)-3sgf to-the-walking around / to-drunkennes
    'He indulged in walking around / getting drunk / etc.'

cf. also: *etaha yir llemsarya / lsekra / etc.*
    'All he did was walk around / drink / etc.'

c. *xlihiha. / xlah. / etc.*
    destroyed-2sg-3sgf / destroyed(3sgm)-3sgf
    'Big deal!' (lit. 'You / he (they, we, etc.) destroyed it.')

In each case in (82) above, the subject affix is variable, but the pronominal object *-ha*, which has no reference, is invariable. And in each case, that object does not correspond to a thematic argument of the verb.

The most compelling evidence, however, that the MO Dislocation objects do not correspond to thematic arguments of the matrix verb comes from intransitive verbs.

Those verbs that most clearly take thematic objects are those given in
the (a) through (e) examples of (36) through (41) above, the transitive verbs. These verbs may occur with a verb and a complement, as in MO Dislocation, and with just an object, as indicated below. When the transitive verbs occur with only an object, that object is a thematic argument of the verb.

(83) byit waḍ dīftāḥa.
want-lsg one the-apple
'I want an apple.'

(84) lgit ktabl fugesseddari.
found-lsg book-lsg on-the-sofa
'I found my book on the sofa.'

(85) tsennit mārī feḍdar.
waited for-lsg mother-lsg in-the-house
'I waited for my mother in the house.'

(86) kaneṛef dik lemrā.
CONT-lsg-know that the-woman
'I know that woman.'

(87) ḡefthum ṣeʃfru.
saw-lsg-3pl in-Sefrou
'I saw them in Sefrou.'

Though it has been demonstrated above that the objects of these verbs may be non-thematic when they occur with a complement clause, one might be tempted to argue that since these verbs subcategorize for an object argument, this object always corresponds to a thematic argument of the verb.

Since intransitive verbs do not normally subcategorize for an object argument, however, they do not normally occur with an object which corresponds
to a thematic argument of the verb. Intransitive verbs do occur with objects in the MO Dislocation construction, but that is the only environment in which an object does appear with those verbs. There is no construction in Moroccan as there is in English in which an intransitive verb is used as a transitive, e.g., in sentences such as "They laughed him off the stage" or "She ran them ragged." In these sentences the verbs laugh and run, which are normally intransitive verbs, are used with an object. Such sentences do not exist in Moroccan, and so if an intransitive verb occurs with an object, it must be in the MO Dislocation construction. The ungrammaticality of the following sentences indicates that the verbs given in the (f) through (i) examples in (36) through (41) are indeed intransitive.

(88) a. *xeft muḥend. / xeftu.  
feared-1sg Mohand / feared-1sg-3sgm  
'I feared Mohand. / I feared him.'

b. xeft men muḥend / xeft mennu.  
feared-1sg from Mohand / feared-1sg of-3sgm  
'I'm afraid of Mohand. / I'm afraid of him.'

(89) *kanttmenna Mohand / kanttmennah. / kanttmennaha.  
CONT-1sg-hope Mohand / CONT-1sg-hope-3sgm / CONT-1sg-hope-3sgf  
*I hope Mohand. / I hope him / I hope her (it).

(90) *dennit muḥend / dennitu / dennitha.  
thought-1sg Mohand / thought-1sg-3sgm / thought-1sg-3sgf  
*I thought Mohand. / I thought him. / I thought her (it).

(91) *ttṣhabli muḥend / ttṣhabuli.  
seemed(3sgm)-to-1sg Mohand / seemed(3sgm)-3sgm-to-1sg  
*I thought Mohand. / I thought him (it).  

Note: The sentence ttṣhabli muḥend is acceptable with the reading 'I thought it was Mohand,' but not with the reading in which muḥend is the direct object of the verb, rather than a complement NP.
When these intransitives occur with an object by virtue of the MO Dislocation construction, there is no discernible change in meaning from the corresponding non-MO Dislocation sentences, in which no object occurs; as with the transitive MO Dislocation verbs, the only meaning difference is the prominence on the matrix object in the MO Dislocation cases. This prominence, however, does not warrant the addition of a semantic argument to the predicate argument list of the intransitive verbs for the MO Dislocation construction. Such a move would imply that there is a real meaning change between the verb when it occurs in the MO Dislocation construction, and when it occurs without. Since there is no change in meaning of the matrix verb with the MO Dislocation construction, I assume that the intransitive verbs never subcategorize for a thematic object, but for the MO Dislocation cases they subcategorize for a non-thematic object and complement. These objects, as with all MO Dislocation objects, receive an interpretation by anaphoric binding with a coreferential pronominal affix in the complement clause.

Clinkenbeard (1976) discusses a construction in Classical Arabic which he terms "Subject-to-Object Raising." The class of verbs that undergo this Subject-to-Object Raising is the same class that undergoes MO Dislocation in Moroccan Arabic. In fact, Subject-to-Object Raising appears to be a special case of MO Dislocation; an NP which is interpreted as the lower clause subject occurs in matrix object position, as shown in the example in (92) below.

(92) wajad-tu ṣadiq-a-κα qad xaraja. 
     find-1P friend-A-your 'asp leave-3P
     'I found that your friend had left.'
     (I found your friend that he left.)
As only examples of a relation between a matrix object and a lower clause subject are provided, it would appear that the full range of lower clause positions are not available in Classical Arabic for coreferentiality with an MO dislocated NP.

Clinkenbeard states that Subject-to-Object Raising is preferred when the complement is a present tense equational sentence (see Chapter IV for a discussion of MO Dislocation with equational complements in Moroccan), and rare when the complement is verbal. The "raised" item in Classical Arabic functions as an object to the matrix verb, undergoing such operations as Passivization, unlike an MO dislocated NP in Moroccan.

In a language like English, Passive is a test that is often used to determine if a particular NP is an object. Passivization is an operation by which an object in an active sentence becomes the subject of a corresponding passive sentence. The agentive subject of the active transitive sentence is often realized in the passive as an oblique object in a by-phrase. If, then, an MO dislocated NP were an object, it would be expected to undergo Passivization, as it does in Classical Arabic.

In Moroccan, however, what might be called Passivization is really a process of intransitivization. An agent is never expressed with an intransitivized verb, and the agentive meaning is lost; verbs with the intransitive morpheme tt- do not imply the result of an action performed by an agentive argument. Thus, not all transitive verbs commonly undergo Intransitivization in Moroccan; intransitives such as tt8af munhend 'Mohand got seen' are rare, as such a sentence is unusual in a normal context. Since Intransitivization is a restricted rule in Moroccan, not applying to all objects, it is not a useful test for objecthood in Moroccan.
3.3.5.1 Relativization and question formation

I have demonstrated above that the MO dislocated NPs must be in object position with respect to the matrix verb. If indeed they are objects, however, there is certain other behavior that they would be expected to exhibit. For example, if they were true objects, they would be expected to undergo relativization and question formation, whereas left-dislocated NPs would not. Relativization and question formation were discussed in Chapter I, but I will repeat the facts here for convenience.

Relativization in Moroccan is illustrated by the sentences below. A gap normally occurs in the within-clause position of the relativized item, except when that item is not subjacent to the head (i.e., is embedded or is the object of a preposition or a possessor). In those cases a pronominal affix coreferential with the relativized NP appears in its within-clause position.

(93) a. xrež ṭraẓel elli šeft.
   went out(3sgm) the-man that saw-lsg
   'The man that I saw went out.'

   b. *xrež ṭraẓel elli šeftu.
   went out(3sgm) the-man that saw-lsg-3sgm
   The man that I saw him went out.

(94) a. *xrež ṭraẓel elli ttlagit mea.
   went out(3sgm) the-man that met-lsg with
   'The man that I met (with) went out.'

   b. xrež ṭraẓel elli ttlagit meah.
   went out(3sgm) the-man that met-lsg with-3sgm
   The man that I met with him went out.
The sentences in (93) show that a gap is obligatory in a simple relative clause, while the (94) through (96) examples indicate that a pronoun is obligatory when an oblique object, possessor, or other embedded item is relativized.

There is, however, a case where a pronoun occurs instead of a gap with relativization of an object, even though the relativized NP is subjacent to the head. (97) below illustrates an example of such a case.

In sentence (97), an object suffix appears on the verb șefț in the lower clause; this object suffix is in fact in MO Dislocation position. I thus assume that sentence (97) is the result of relativizing the NP dik lbent in sentence (98) below.
In sentence (97) the NP dik lbent is in MO Dislocation position. If, as I have claimed, MO dislocated NPs are objects of the matrix verb, then these NPs would be expected to relativize with a gap, as do normal objects (assuming that the semantic interpretation of MO Dislocation is not incompatible with relativizing). Sentence (97), however, indicates that when an MO dislocated NP is relativized, an object affix appears on the verb, rather than the expected gap.

A pronominal affix rather than a gap is expected when a particular item is not in a "relativizable" position (e.g., object of a preposition, possessor, embedded NP). Therefore, since a pronoun occurs with relativization of an MO dislocated NP, the MO dislocated item must not be in a "relativizable" position. Object position is a "relativizable" position, and therefore the MO dislocated NP is not in object position. That is, it is not in object position for the purpose of relativization. The MO dislocated NP does act as an object for certain other processes, however, namely reflexivization and affixation. The analyses of the MO Dislocation construction proposed in Sections 3.3.6 (for GB) and 3.3.7 (for LFG) below provide a solution in each framework to this apparent problem of the dual nature of the MO dislocated object.

If the NP dik lbent were not in MO Dislocation position, but rather in subject position in the lower clause, as in (99a) below, then relativization of that NP does not leave a pronominal affix on the verb šeft, as in (99b).
(99) a.  Şeft  belli dexlat  dik  lbent  leddar.
saw-1sg  that  entered-3sgf  that  the-girl  to-the-house
'I saw that that girl entered the house.'

b.  xerżat  dik  lbent  ellı  Şeft  belli dexlat  leddar.
gone out-3sgf  that  the-girl  that  saw-1sg  that  entered-3sgf  to-the
house
'The girl that I saw that entered the house went out.'

(100a) below shows that when the complementizer belli does not occur, the
sentence is ill-formed, just as it is in the relativized form in (100b). 8

(100) a.  * Şeft  dik  lbent  dexlat  leddar.
saw-1sg  that  the-girl  entered-3sgf  to-the-house
'I saw that girl entered the house.'

b.  * xerżat  dik  lbent  ellı  Şeft  dexlat  leddar.
gone out-3sgf  that  the-girl  that  saw-1sg  entered-3sgf  to-the-house
'The girl that I saw entered the house went out.'

In the sentences in (97) and (98) I have indicated that the complement-
tizer belli is optional. It is, in fact, only optional when an NP or
pronominal affix appears in MO Dislocation position, as the ungrammaticality
of the sentences in (100) indicates. Indeed, in (97) and (98) above, the
absence of the complementizer renders the sentences more acceptable than if
the complementizer is present. When both an MO dislocated item and the
complementizer occur together, the sentence is less acceptable. Thus, sen-
tences (97) and (98) without the complementizer belli, and sentences (99a)
and (99b), with the complementizer but without an MO dislocated item, are
the most acceptable of the sentences discussed here. I do not have a

8 Sentence (100a) is acceptable with the meaning 'I saw that girl go in
the house,' in which physical perception is involved; with the MO
Dislocation meaning, however, the sentence is ill-formed.
satisfactory explanation at this time for why the co-occurrence of an MO dislocated item and a complementizer should lessen the acceptability of a sentence.

Since both constructions involve the same operation, constituent control, it follows that the facts of question formation parallel those of relativization. Questioning an object normally leaves a gap, as seen in (101) below, while NPs that are non-subjacent are questioned with a pronominal affix in their within-clause position. These facts are illustrated in (102) through (104) below.

(101) a. ƙun (elli) ƙafu?
   who that saw-3pl
   'Who did they see?'

   b. *ƙun (elli) ƙafuh?
      who that saw-3pl-3sgm
      *Who did they see him?

(102) a. *ƙun elli ƙefti ƙeellu ƙafu?
   who that know-2sg that saw-3pl
   'Who do you know that they saw?'

   b. ƙun elli ƙefti ƙeellu ƙafuh?
      who that know-2sg that saw-3pl-3sgm
      *Who do you know that they saw him?

(103) a. *ƙun elli ƙe. ti ƙaƙu?
   who that saw-2sg mother
   *Who did you see mother?

   b. ƙun elli ƙe. ti ƙaƙu?
      who that saw-2sg mother-3sgm
      'Whose mother did you see?'
As shown in (101), a questioned object must not occur with a corresponding pronominal affix. If, however, an NP is questioned from a non-subjacent position, as in (102) through (104), then a corresponding pronominal affix must occur.

As with relativization, there is a case with question formation where, instead of an expected gap, a pronominal affix occurs on a verb when a (subjacent) object is questioned. This case is illustrated in (105) below.

(105) ǝkun elli ǝɾɛftih (belli) ǝʃafuh ʃǝfǝɾu?
who that know-2sg-3sgm that saw-3pl-3sgm in-Sefrou
'Who do you know (him) that they saw (him) in Sefrou?'

In (105) the object suffix appears in MO Dislocation position, the result of questioning the NP dak ɾraʃel in sentence (106).

(106) ǝɾɛfti dak ɾraʃel (belli) ǝʃafuh ʃǝfǝɾu.
know-2sg that the-man that saw-3pl-3sgm in-Sefrou
'You know (that man) that they saw him in Sefrou.'

If the MO dislocated NP dak ɾraʃel 'that man' in (106) were a normal object of the verb ǝɾɛfti 'you know,' then it would be expected to question with a gap. (105) shows, however, that when the MO dislocated NP is questioned, a pronominal affix occurs in its within-clause position. Thus, MO dislocated NPs must not be in a "questionable" position, and since object position
is a "questionable" position, MO dislocated NPs must not be objects of the matrix verb for the purpose of question formation. As mentioned above, the analyses of MO Dislocation that I propose in succeeding sections provide insight into the status of the MO dislocated NP.

As with relativization, if the NP to be questioned is not in MO Dislocation position, then a normal question results.

(106') a. ērēfti belli šafuh.
   know-2sg that saw-3pl-3sgm
   'You know that they saw him.'

b. ūkun elli ērēfti belli šafuh?
   who that know-2sg that saw-3pl-3sgm
   Who do you know that they saw him?

The same facts with respect to the non-occurrence of the complementizer, and the preferred complementarity of the MO dislocated NP and the complementizer hold for question formation as for relativization; I will therefore not repeat those facts here.

Verbs which I have not included in the MO Dislocation class do, however, exhibit the same behavior as the MO Dislocation verbs with respect to question formation and relativization. These verbs include, among others, zey yer 'force, put pressure on,' bez yer 'beg (with a whine),' and sellem 'teach.' Example sentences with each verb, and their corresponding questions, are given in (107) through (109) below.

(107) a. zeyyertu ymši.
   forced-1sg-3sgm 3sgm-go
   'I forced him to go,'

b. ūkun elli zeyyertih ymši?
   who that forced-2sg-3sgm 3sgm-go
   'Who did you force (him) to go?'
(108) a. ḫeẓṣertu ymṣī.  
    begged-lsg-3sgm 3sgm-go  
    'I begged him to go.'

b. ŝkun elli ḫeẓṣertih ymṣī?  
    who that begged-2sg-3sgm 3sgm-go  
    'Who did you beg (him) to go?'

(109) a. ƙellemtu yq̣a.  
    taught-lsg-3sgm 3sgm-read  
    'I taught him to read.'

b. ŝkun elli ƙellemtih yq̣a?  
    who that taught-2sg-3sgm 3sgm-read  
    'Who did you teach (him) to read?'

In each case of (107) through (109), an object suffix appears on the matrix verb when that verb's object is questioned. This result is not the expected result, as these verbs are all transitive, taking obligatory thematic objects, as shown by the ungrammaticality of the (b) and (c) sentences in (110) through (112) below.

(110) a. zeyyertu.  
    forced-lsg-3sgm  
    'I forced him.'

b. *zeyyert.  
    forced-lsg  
    *I forced.

c. *zeyyert ymṣī.  
    forced-lsg 3sgm-go  
    *I forced he go.

Questions without the object suffix are slightly acceptable, but they are much less acceptable than those in the (b) sentences in (107) through (109), in which the object suffix does occur.
Though these verbs take sentential complements, they also take obligatory objects with those complements (as opposed to the MO Dislocation verbs, whose objects are non-thematic and optional with a complement). The matrix verbs in (107) through (109), however, exhibit the same behavior with their objects in question formation (and relativization) as do the MO Dislocation verbs. Since verbs such as *fhem 'understand,' which are clearly not MO Dislocation verbs, do not exhibit similar behavior with respect to the operations under discussion here (see (115) below), I assume that the verbs *zeeyer, *besser, and *cellem are members of the class of MO Dislocation verbs, and that when they occur with a complement, their objects function as do the objects of the other MO Dislocation verbs.
Just as with ḍref 'know' and ḍaf 'see,' when the verbs in (107) through (109) occur without a sentential complement, the object suffix is prohibited from occurring on the verb with questions and relative clauses.

(113) a. ūkun elli ḍrefti / *ḍrefti?  
who that know-2sg know-2sg-3sgm  
'Who do you know / know him?'

b. ūkun elli ḍefti / *ḍefti?  
who that saw-2sg saw-2sg-3sgm  
'Who did you see / see him?'

(114) a. ūkun elli ẓeḱerti / *ẓeḱerti?  
who that forced-2sg forced-2sg-3sgm  
'Who did you force / force him?'

b. ūkun elli ḡezérti / *ḡezérti?  
who that begged-2sg begged-2sg-3sgm  
'Who did you beg / beg him?'

c. ūkun elli ḍellemti / *ḍellemti?  
who that taught-2sg taught-2sg-3sgm  
'Who did you teach / teach him?'

In (113) and (114), when an object suffix appears in place of a questioned object, and no COMP appears, the sentences are ungrammatical. When a complement sentence is present, however, the suffix does occur ((107) through (109) above), just as it does in similar cases with the MO Dislocation verbs.

The same facts do not hold for non-MO Dislocation verbs, as shown below.

(115) a. ẓhemt  belli ḏafuh  ḍefru.  
understood-1sg that saw-3pl-3sgm in-Sefrou  
'I understood that they saw him in Sefrou.'
b. *fhemtu belli ūafuh ṣefru.
   understood-1sg-3sgm that saw-3pl-3sgm in-Sefrou
   I understood him that they saw him in Sefrou.

c. *škun elli fhemtu belli ūafuh ṣefru?
   who that understood-2sg-3sgm that saw-3pl-3sgm in-Sefrou
   Who did you understand him that they saw him in Sefrou?

Since *fhem is not an MO Dislocation verb, it can never take an object with a complement, as shown by the ungrammaticality of sentences (115b) and (115c).

Returning for a moment to the sentences in (113) and (114), it seems that some speakers do accept the starred sentences in those examples, those in which an object suffix occurs in a question. I believe, however, that these examples entail a different presupposition from the examples in which no object suffix is present. The questions that include object suffixes presuppose that the questioner knows for a fact that someone was seen, begged, taught, etc.; those questions without the object entail no such presupposition. Thus, a possible answer to the question *škun elli ūaf?
   'Who did she see?', for example, could be ṣetra wabd 'no one.' The same answer could not be given to the question *škun elli ūafu? 'Who did she see him?', as the questioner in that case knows that someone was seen. If the form with the object suffix is used, it usually occurs with an adjunct, meaning that the person referred to by the affix is a member of a group being spoken of or addressed, as in the following example.

(116) *škun elli ūafu fikum?
   who that saw-3sgf-3sgm in-2pl
   'Who did she see (him) among you?'
If, in fact, the object suffix can occur (when subjacent) with the same meaning as a gap, then one explanation could be that, instead of an obligatory gap with the questioning, etc. of subjacent objects, an object affix may optionally occur in the within-clause position. This possibility would only exist for verbs that subcategorize for a thematic object, and would hold with those verbs whether or not a COMP appeared with the verb. A verb whose object is always non-thematic does not have this option, as shown below.

(117) a. *škun elli xefti? / xefti?
   who that feared-2sg-3sgm feared-2sg
   Who were you afraid him / afraid?

   b. škun elli xefti? / *xefti? ymāi?
   who that feared-2sg-3sgm 3sgm-go feared-2sg 3sgm-go
   Who were you afraid him he'd go / afraid he'd go?

   c. škun elli xefti? mennu?
   who that feared-2sg from-3sgm
   Who were you afraid of him?

Since the verb xaf only subcategorizes for an object when it occurs with a COMP, its object is non-thematic. It is thus not eligible for an object suffix when no COMP occurs with a question, and must have an object suffix when a COMP does occur.

The verbs discussed in this chapter can now be divided into classes with respect to the type of objects they take with sentential complements. The class division is illustrated in (118) below, with subcategorization
information for each class listed with representative verbs from that class.

(118) a. xaf 'fear'
     denn 'think'
     bya 'want'

b. e:ref 'know'
    šaf 'see'
    lga 'find'

c. zeyyer 'force'
    hegger 'beg'
    cellem 'teach'

d. fhem 'understand'
    nker 'deny'

(118a) shows the class of verbs (including the intransitives) whose objects are always non-thematic with a COMP. (118b) includes the verbs which (i) take a non-thematic object with a COMP, or (ii) take a thematic object with a COMP (in the case of actual physical perception of the object denotee). (118c) represents the class of verbs which take an obligatory thematic object with a COMP, and (118d) includes those verbs which take a COMP but no concomitant object. The first three classes are made up of MO Dislocation verbs, while the class in (118d) is not an MO Dislocation class.

The question and relativization facts imply a contradiction in the behavior and function of the MO dislocated NPs, when taken together with the facts presented in Section 3.3.4. In that section, the MO dislocated
NP was shown to function as an object to the matrix verb, while evidence from relativization and question formation suggests that these NPs are not (normal) objects of the matrix verb. The discussion that follows will attempt to provide an explanation for this apparent contradiction.

3.3.6 A GB analysis

Recent work in GB on the syntax of non-configurational languages (Hale (1983); Zubizarreta and Vergnaud (1982)) has focussed on the formal expression of certain well-known differences between configurational and non-configurational languages. One feature that often characterizes non-configurational languages is free (or at least not totally fixed) word order.

In configurational languages the word order is fixed, and grammatical relations are determined by position in the phrase structure. In non-configurational languages, on the other hand, since the order of constituents in a sentence is less fixed than in configurational languages, grammatical relations cannot be defined on phrase structure. In English, for instance, the NP object of a verb always follows the verb, and the verb and its object form the constituent VP. In Japanese, on the other hand, as reported by Zubizarreta and Vergnaud (from sources cited there), the subject and object NPs both must precede the verb, but are unordered with respect to each other. The verb and its object thus do not form a constituent, and need not even be adjacent.

A simple transitive sentence in Japanese, represented by (119) below, would thus have the structure given in (120).
Structure (120) does not include a VP constituent.

Since in GB grammatical relations must be defined structurally, and structure (120) cannot be used to determine which NP is the subject and which the object of the V, Zubizarreta and Vergnaud propose a level of "virtual structure" for Japanese, on which grammatical relations can be determined. The virtual structure corresponding to structure (120) is given in (121).

Structure (121) is included in the Logical Form of a sentence of the type represented by (119) above, as is the P-marker given in (122) below.

\[
(119) \quad \text{NP}_1 \quad \text{NP}_j \quad \text{V} \quad (1,j) = (1,2) \text{ or } (2,1) \\
\text{NP}_1 = \text{subject of } V, \text{ NP}_2 = \text{object of } V
\]

\[
(120)
\]

\[
S \\
\text{NP}_1 \quad \text{NP}_j \quad \text{V}
\]

\[
(121)
\]

\[
S \\
\text{NP}_1 \quad \text{VP} \quad \text{NP}_2 \quad \text{V}
\]

\[
(122) \quad \{ S, \text{NP}_1 \text{VP, NP}_1 \text{NP}_2 \text{V} \} \quad \text{where } \text{NP}_1 \text{ and VP, and NP}_1 \text{ and NP}_2 \text{ are unordered.}
\]

Since the virtual structure includes a VP, VP is a virtual category in Japanese. \text{NP}_1, \text{immediately dominated by the S node, is the subject, and NP}_2,
immediately dominated by VP, is the object NP. Structure (120), where NP₁ and NP₂ are unordered, and there is no VP, is what Zubizarreta and Vergnaud call the "actual structure."

Both a virtual and an actual analysis are needed for a language like Japanese, as the hierarchical structure and the left-to-right ordering of constituents cannot be simultaneously expressed in a standard phrase-marker. Zubizarreta and Vergnaud use a bracketed phrase-marker, given in (123a), to express the virtual analysis of the Japanese structures in question.

\[(123) \ a. \ \{ S, < NP₁ & VP >, (NP₁ & NP₂) V \} \quad (Z. \ & V.'s \ (10))\]

\[
\{ S, NP₁ & VP, (NP₁ & NP₂) V \} \quad \text{virtual projection of (a)}
\quad (Z. \ & V.'s \ (9))
\]

\[
\{ S, (NP₁ & NP₂) V \} \quad \text{actual projection of (a)}
\quad (Z. \ & V.'s \ (8))
\]

(123b) is the longer expansion of (123a), called the virtual projection of that P-marker, while the shorter expansion in (123c) is called the actual projection of the P-marker in (123a). One further note of explanation:

\[(124) \ (X₁ \ & \ X₂ \ & \ ... \ & \ Xᵢ \ & \ ... \ & \ Xₙ) \text{ represents "a continuous unordered string containing one and only one occurrence of } Xᵢ, \ i = 1,2,\ldots,n." \quad (Z. \ & V.'s \ (7))\]

Thus, a sentence with free word order will be assigned a virtual and an actual analysis, the actual analysis representing the possible surface word orders, and the virtual analysis representing the "logical" hierarchical organization of the constituents.

Hale (1983) discusses another non-configurational language, Warlpiri,
a Pama-Nyungan language of Australia. In Warlpiri the word order is free, with the exception that in certain cases the AUX must occupy second position in the sentence. Hale proposes the following phrase-structure rules for Warlpiri.

(125) a. $\overline{X} + \overline{X}^* X$
   b. $\overline{V} + \text{AUX} \overline{X}^* V \overline{X}^*$

Rule (a) indicates that the head is final, and generates nominals and infinitives. Rule (b) generates finite clauses. The $\overline{X}^*$ notation means that any number of $\overline{X}$ constituents, including none, may appear as sisters to a given head.

Lexical insertion in Warlpiri is free, the only limits being those defined by the P-S rules in (125), and free word order is the natural result of this interaction. Thus, given a string such as (126a) below, any nominal is free to insert at either X, and both of the strings given in (126b) and (126c) are possible results of the lexical insertion.

(126) a. $\overline{X} \overline{X}$
   b. $\overline{N} \text{erg} \overline{N} \text{abs}$
   c. $\overline{N} \text{abs} \overline{N} \text{erg}$

(Hale's (8))

(Hale's (9a))

(Hale's (9b))
Free lexical insertion, in conjunction with the P-S rules given in (125), also accounts for the existence of the discontinuous nominal expressions and null anaphora that occur in Warlpiri. For example, two absolutive nominals could be inserted at two separate X nodes, dominated by two separate \( \bar{X} \)s, and they will receive interpretations. They may even both be interpreted as logically constituting a single expression. On the other hand, the P-S rules of (125) include the possibility that no complement occurs with the head, and again an interpretable string results, where the verb's arguments are not represented by overt nominals.

Hale's view is that the "flat" structure that often characterizes non-configurational languages is not in itself the explanation for the differences between these and configurational languages. He attempts to determine the reason for the existence of the non-hierarchical structures in non-configurational languages. His answer to this question is the postulation of the "Configurationality Parameter." This parameter is stated in (127) below.

(127) The Configurationality Parameter (CP): (Hale's (28))

a. In configurational languages, the projection principle holds of the pair \((L_S, P_S)\).

b. In non-configurational languages, the projection principle holds of \(L_S\) alone.

In the Configurationality Parameter, the abbreviation PS stands for phrase structure, and LS stands for lexical structure, a term which refers to the argument structure of a predicate. (The two notions lexical structure and phrase structure roughly correspond to Zubizarreta and Vergnaud's virtual structure and actual structure, respectively.)
The Configurationality Parameter expresses a typological difference in the way in which lexical structure and phrase structure are related in languages. In non-configurational languages the notion of argument of a predicate is only relevant to lexical structure, not phrase structure. The projection principle does not motivate any necessary isomorphism between LS and PS. With configurational languages, on the other hand, the projection principle holds of both levels, thereby entailing the identity of the two structures.

To summarize, the Configurationality Parameter expresses the nature of the difference between configurational and non-configurational languages, this difference being in the relation between lexical structure and phrase structure. With configurational languages there must be a constituent in phrase structure for each argument in lexical structure, whereas with non-configurational languages this one-to-one correspondence is not obligatory.

Both Zubizarreta & Vergnaud and Hale have suggested that certain languages have two levels of representation (lexical/virtual structure and phrase/actual structure) which are not in an identity relation. Hale states further that this non-identity is a property of non-configurational languages in general, and that in fact it is a defining characteristic of non-configurational languages. I will now turn to an examination of how Moroccan fits in with the languages discussed above.

Moroccan does not exhibit the general characteristics of non-configurational languages in that it has fixed word order, has null anaphora only with subjects, and does not have discontinuous nominal expressions. However, since it is a VSO language, there is no VP constituent (in the traditional
sense), i.e., the verb and its object do not form a constituent, as the subject intervenes; nor is there any other sort of evidence for a VP at the level of phrase structure. Now, if all languages have a hierarchical structure at some level, as claimed by the Configurationality Parameter and is implicit in the paper by Zubizarreta and Vergnaud, then some level of Moroccan must include a VP constituent. This level is the virtual structure, to use the terminology of Zubizarreta and Vergnaud. Since the actual structure, which is flat, has no VP, and the virtual structure must have a VP, Moroccan fits, at least in this minor way, one of the criteria for non-configurational languages, as set out by the Configurationality Parameter: there is not identity between the virtual and actual structures.

If Moroccan is a non-configurational language, one would expect the non-isomorphism between virtual and actual structure to exist in places other than just simple sentences. That is, violations of the projection principle would be expected on actual structure, and NPs would be expected to appear in positions not selected by verbs (in the sense of thematic role assignment). The MO Dislocation construction in Moroccan provides just such a case.

Evidence was presented in Section 3.3.4 that led to the adoption of structure (70), where the MO dislocated NP is a sister to the matrix verb, and the rejection of structure (56), where the MO dislocated NP is the initial constituent of an S which is a sister to the verb. Both structures are repeated here for convenience.

10 The adoption of this view for Moroccan implies that all VSO languages are non-configurational; there are, however, varying degrees of non-configurationality, e.g., Warlpiri has a much freer word order than Japanese, etc.
Evidence from relativization and question formation, however, suggests that the MO dislocated NP is not an object of the matrix verb. The facts gave rise to an apparent contradiction.

If, however, each structure corresponds to a different level of representation, say, virtual structure and actual structure, several facts can then be explained quite naturally.
In structure (128a), the MO dislocated NP is not a sister to the verb, and is therefore not its object; in fact, this NP is not in an argument position. One class of items that would not be expected to relativize or question normally is non-arguments (i.e., NPs in a non-argument, or A, position). Since the notion "argument" is relevant only to virtual structure, where the MO dislocated NP is not an argument of any predicate, the MO dislocated NP would not be expected to relativize or question in the manner of a normal object, i.e., with a gap. In fact, as seen above, relativization and questioning of MO dislocated NPs involves a pronominal affix rather than a gap.

If (128a) is an appropriate representation of the structure of Moroccan at a certain level, then the fact that an MO dislocated object can appear with certain intransitive verbs is not a problem. The virtual structure in Moroccan is the level at which the projection principle holds, according to the Configurationality Parameter. Therefore, the subcategorization and selection facts encoded in the lexicon for each verb will be represented at
this level. Since intransitive verbs do not subcategorize for objects, the virtual structure, according to the projection principle, will not include an object for these verbs, just as structure (128a) does not. However, since the projection principle holds only of virtual structure, an object NP may appear in actual structure that is not included in the argument structure of a verb in the lexicon. Thus, MO Dislocation is possible with intransitive verbs.

Since, also, only arguments of a verb can be assigned thematic roles, and the MO dislocated NP is not an argument of any verb (and is in a non-argument position), it would not be expected to be directly assigned a thematic role. In fact, these NPs are usually not directly assigned thematic roles, as shown in Section 3.3.5. However, the MO dislocated NP must be an object at some level of representation for certain facts to be explained.

Independent pronouns, which cannot occur in object position (but which can occur in Left-Dislocation position) do not occur in MO Dislocation position. If (128) is correct, then at actual structure the MO dislocated NPs are objects, and at virtual structure they are not. The same holds for reflexives: at actual structure they must be objects, since they must have a local antecedent.

What is important about the relativization-question facts, on the one hand, and the reflexivization-independent pronoun facts, on the other, is that they provide evidence that two different structures are needed to account for the Moroccan MO Dislocation construction. Certain facts follow from the assumption that the MO dislocated NP is not an argument of the matrix verb: it occurs with intransitive verbs, does not relativize or
question like an object argument, and is not assigned a thematic role by
the matrix verb. Other facts follow from the MO dislocated NP's position
as object to the matrix verb: when pronominal, it is attached to that verb,
reflexives are permitted in MO Dislocation position, and items which cannot
be objects cannot occur in that position.

Certain phenomena in Moroccan, then, depend on an NP's being an argument
of a verb (relativization, question formation), while others (reflexivization,
independent pronouns) refer to the properties of grammatical functions, e.g.
object. The facts of Moroccan MO Dislocation show that the two notions
argument and grammatical function must be distinct. That is, an NP may be
an object of a verb but not necessarily a (thematic) argument of that verb.
(This possible non-isomorphism between the argument structure of a verb and
the functions appearing in its f-structure is basic to the LFG framework; see
below.) These facts are expressed in the GB framework by the postulation of
two levels of representation for the MO Dislocation construction: (a) the
virtual structure, at which the MO dislocated NP occurs in a non-argument
position -- consistent with that NP's non-occurrence in the argument struc-
ture of the matrix verb -- and (b) the actual structure, at which the MO
dislocated NP is in the position of object of the matrix verb, and the
question of its being an argument of that verb does not arise (as the
projection principle holds only of virtual structure).

There are other cases where an NP that has a grammatical function with
respect to a certain predicate is not an argument of that predicate. The
sentence in (129) below, discussed above in Section 3.3.5, provides such a
case.
(129) Debbie seems happy.

Syntacticians generally agree that while the NP Debbie in the above sentence bears the subject function in relation to the verb seem, it is not present in the argument structure of that verb. That is, the NP Debbie is not assigned a thematic role by the verb of which it is the subject.

The Moroccan MO Dislocation construction forces the extension of the non-argument function category to include objects, whereas in GB this notion exists only for subjects. This extension is only required for virtual structure, however, as in actual structure the notion "argument of a predicate" is not relevant.

The notion of subcategorization must also be extended if the analysis proposed here is correct. If virtual structure mirrors subcategorization facts, then verbs may subcategorize for an S, given structure (128a), or an S'. This S includes an NP, the MO dislocated NP, which does not have a sentence grammar function; rather, it bears an "overlay" relation (Perlmutter and Postal (1983)) with respect to the lower clause. This overlay relation is primarily a discourse relation, and verbs are generally not thought to subcategorize for discourse-related arguments. Verbs are not subcategorized, for instance, to take a left-dislocated NP at the front of their clause. However, the MO Dislocation construction provides a case in which verbs actually are subcategorized in terms of whether or not they permit MO Dislocation (cf. Section 3.3.4). The evidence, therefore, points to the conclusion that it is in principle possible for verbs to subcategorize for a topic-type construction, and this type of subcategorization is marked in the same sense that the class of Raising verbs are marked in English; that
is, they are thought to have special properties, e.g., triggering S deletion. In other words, the Moroccan MO Dislocation verbs are in a sense similar to English Raising verbs, but instead of taking an S complement and specifying that the S be deleted to allow case assignment of its subject, in Moroccan these verbs are subcategorized for S, which includes a topic NP as its initial constituent.

Under this analysis, non-MO Dislocation verbs do not subcategorize for S, but rather for S'; the analysis thus allows for subcategorization of a non-maximal category (S), as well as the maximal category S'. The theory of subcategorization is thus weakened, as a more constrained theory would allow subcategorization for maximal categories only.

The analysis proposed here does not, however, account for the facts related to the verbs zeyyer, hasser, and culem, verbs in Class (118c) above. These verbs behave as MO Dislocation verbs with respect to question formation and relativization. Their objects are, however, always thematic, and thus a structure such as (128a) is inappropriate for these verbs. The MO dislocated NP in structure (128a) is not an argument of the matrix verb, whereas the object of the verbs in Class (118c) is an argument of those verbs.

I cannot envision a satisfactory resolution to this problem within the analysis proposed in this section, and thus further research is needed to determine if an explanatory analysis can be made in GB of the Moroccan MO Dislocation construction.

3.3.7 An LFG analysis

The existence of subcategorizable non-thematic object arguments is allowed, and, in fact, expected in LFG, unlike in GB. A basic claim of LFG
is that predicate argument structure is not isomorphic to c-structure. Thus, a c-structure object need not be a thematic argument of a predicate.

In English, non-thematic objects are found in the raising-to-object construction. As noted above in Section 3.3.5, both syntactic and semantic coherence are satisfied in this construction; raising verbs subcategorize for a non-thematic object, and if an OBJ is present in their functional structure (along with all the other subcategorized functions), then the f-structures will be syntactically coherent. Semantic coherence is provided by the control equation in the lexical entry of the raising verb, which specifies that its OBJ will control the XCOMP SUBJ. Since the non-thematic OBJ receives an interpretation through the control equation, semantic coherence is satisfied if all the other arguments of the verb have received a semantic interpretation as well.

MO Dislocation verbs, as demonstrated in Section 3.3.5 above, may subcategorize for a thematic object (zeeyer, hegger), a non-thematic object (xaf, denn), or both (erf, naf) when they occur with a COMP. The MO dislocated objects receive prominence in the sentence, prominence with respect to the complement clause, however, not the entire sentence.

Since the ability to take an object with this prominence is a lexical property of certain verbs, those verbs must be marked in the lexicon as belonging to the MO Dislocation class. The lexical entry for these verbs will thus specify that their objects receive prominence with regard to their COMP. This specification is illustrated below for representative examples from the MO Dislocation verb class.
The lexical entries above represent the three sub-classes of the MO Dislocation verbs. (130) is the representative example for those verbs whose OBJ is always non-thematic when it occurs with a COMP. (131) includes those verbs whose OBJ may (b) or may not (a) be thematic in the presence of a COMP. (132) illustrates an example of a verb whose OBJ is always thematic. In each case, except for (131b), the equation ♦TOP=♦OBJ occurs in the lexical entry. This equation indicates that the matrix object receives prominence in the sentence by being identified with the function TOP(IC), the same function assigned to left-dislocated NPs. Thus, verbs which include the ♦TOP=♦OBJ equation in their lexical entry are MO Dislocation verbs. The function TOP does not occur in c-structure with MO Dislocation; rather, it is functional information that appears in f-structure only.

The following examples illustrate the instantiation of the ♦TOP=♦OBJ equation in f-structure. The arrows in the f-structures below indicate functional identification, and the coindexing represents the process of anaphoric binding.
(133) a. xeftu ykun mša.
feared-lsg 3sgm-be went(3sgm)
'I am afraid he has gone.'

b. 

```
SUBJ [PRED 'PRO']
  NUM SG
  PERS 1

TOP^1

OBJ [PRED 'PRO']
  NUM SG
  PERS 3
  GEND MASC

COMP [SUBJ^1 [PRED 'PKO']
  NUM SG
  PERS 3
  GEND MASC

PRED 'KAN<(COMP)>'(SUBJ)

COMP [SUBJ [PRED 'PRO']
  NUM SG
  PERS 3
  GEND MASC

PRED 'MŠA<(SUBJ)>
```
(134) a. zeyyertu yqra
forced-lsg-3sgm 3sgm-study
'I forced him to study.'

b. SUBJ [PRED 'PRO']
   NUM SG
   PERS 1

PRED 'ZEYYER<(SUBJ)(OBJ)(COMP)'>

TOP

OBJ [PRED 'PRO']
   NUM SG
   PERS 3
   GEND MASC

COMP [SUBJ [PRED 'PRO']
   NUM SG
   PERS 3
   GEND MASC

PRED 'QRA<(SUBJ)'>

The arrows in the above f-structures indicate functional identification; the f-structure which is the value of TOP is the same identical f-structure as the OBJ f-structure. The coindexing indicates the effect of anaphoric binding; the TOP/OBJ is linked to the within-clause PRO subject. This linking ensures that, though TOP is in the f-structure of the matrix verb, as it is subcategorized by that verb, the prominence the object receives is not in terms of the matrix sentence, but rather with respect to the embedded clause. That is, the MO dislocated NP is left-dislocated from the embedded clause and appears in matrix object position. It bears, however, the same relation to the embedded clause that a regular left-dislocated NP
bears to its associated sentence, i.e., it is in a position of prominence with respect to the following sentence.

An NP in that prominence relation is assigned the function TOP, with MO Dislocation as well as Left-Dislocation, since the same operation, namely anaphoric binding, is involved in the interpretation of both structures. Thus, the TOP function may be lexically (MO Dislocation) or constructionally (Left-Dislocation) introduced, and anaphoric binding applies in the same fashion to both.

The TOP (and thus in MO Dislocation also the non-thematic object) receives a semantic interpretation through anaphoric binding. This operation binds a TOP to an element in a clause that it f-commands (i.e., a subordinate clause). F-command is a relation defined on f-structures, stated below in (135).

(135) F-command

For any occurrences of the functions \( \alpha, \beta \) in an f-structure F, \( \alpha \) f-commands \( \beta \) if and only if \( \alpha \) does not contain \( \beta \) and every f-structure of F that contains \( \alpha \) contains \( \beta \).

Thus, in the f-structure (134b) above, if TOP=\( \alpha \) and COMP=\( \beta \), then TOP f-commands COMP, as TOP does not contain COMP, and every f-structure that contains TOP contains COMP.

Anaphoric binding is stated as binding a TOP to an element in an f-commanded clause in order to prevent a sentence such as (136a) below from receiving a semantic interpretation.
(136) a. *māa ḍrajel elli zeyyertu.
   left(3sgm) the-man that forced-1sg-3sgm
   The man that I put pressure on left.

b. māa ḍrajel elli zeyyert.
   left(3sgm) the-man that forced-1sg
   'The man that I put pressure on left.'

c. māa ḍrajel elli zeyyertu ymāi.
   left(3sgm) the-man that forced-1sg-3sgm 3sgm-go
   The man that I put pressure on him to go left.

In (136a) an object suffix appears on the verb zeyyert which renders the sentence ungrammatical. 11 This sentence will thus be ruled out as a violation of semantic coherence, as the TOP function does not f-command any clause, and thus it has nothing to bind. It therefore does not receive an interpretation, and the sentence is ruled out. Only when a COMP occurs with that object ((136c)) does the TOP receive an interpretation and thereby produce a well-formed f-structure (assuming all other well-formedness conditions are met, as well).

Through anaphoric binding, then, a matrix object identified with a TOP function is understood as bearing a relation of prominence with respect to a following clause. The matrix object thus has two simultaneous functions: one as the OBJ of a matrix verb that subcategorizes the TOP function, and the other as the TOP of the complement clause. Because LFG does not require isomorphy between c-structure and f-structure, the fact that the matrix object functions as a TOP with respect to the lower clause is not marked in c-structure; there the matrix object appears as a normal

---

11 As noted earlier in this chapter, this type of sentence is acceptable in some cases.
object. It is functionally different from normal objects, however (Section 3.3.5), and this difference is reflected in f-structure.

Thus, TOPIC in Moroccan is always interpreted with respect to a subordinate clause, and the TOP function in the MO Dislocation f-structures is the same as the TOP in Left-Dislocation sentences. The encoding of the function into f-structure is different in each case, however, as in one case it is introduced by a lexical equation (MO Dislocation), and in the other, Left-Dislocation, the function TOP is associated with a c-structure node.

3.3.8 Prolepsis and embedded questions

The MO Dislocation construction in Moroccan resembles a construction found in many languages which has been called "prolepsis." Prolepsis involves a matrix object related to an element in a complement clause, just as does MO Dislocation. Higgins (1981) describes the prolepsis construction in Nahuat, where it occurs with perception verbs. An example of a sentence with a proleptic object in Nahuat is given in (137) below.

(137) niki:nitak kihekokkeh tahto;skeh mehika:noh. (Higgins' (12)
'I saw them trying to speak Nahuat.'

In the above example, the matrix verb includes an affix with the same features as the subject of the complement verbs.

Prolepsis also occurs in Latin (Greenough, et al. eds. (1975)) and Greek (Higgins (1981)), especially with verbs of perception and knowing. In both languages the complement clause may be either a that-clause or an embedded question (Higgins p.72). Examples of prolepsis from Latin and
Greek are provided in (138) and (139) below, respectively.

(138) nōstī Mārcellum quam tardus sit
    you know M. how slow he is
    'You know how slow Marcellus is.'

(139) éidee gār ... adelpheōn hōs eponeītō
    know PRT brother:ACC how labored
    'he knew...how his brother labored'

Examples of prolepsis are also found in Biblical (and perhaps modern) English, as the following example from the Bible illustrates.

(140) And God saw the light, that it was good. (Genesis 1.4) (Higgins' (13))

Joseph (1976) discusses what he terms "Raising-to-Object" in Modern Greek, a process rather like Raising-to-Object in English, except for the fact that the complement clause in Modern Greek is finite, whereas in English it is non-finite. This process occurs with verbs such as want and consider, verbs that have traditionally been thought of as raising verbs. An example of "Raising" in Modern Greek is given in (141) below.

(141) ἑωρο ἅνον ψευδε ἐξιπνοσ.
    consider-lsg John-ACC COMP be-3sg smart-NOM
    'I consider John to be smart.'

In the example in (141) above, an accusative NP occurs in matrix object position, and that object is coreferential with the subject of the complement clause.

Ingria (1981) presents examples of sentences in Modern Greek in which a matrix object is coreferential with a pronominal element in several
positions in a complement clause, just as with the MO Dislocation sentences given in this chapter. Ingria argues, contrary to Joseph, that Raising is not involved in the Modern Greek examples. He claims, much as I have done for Moroccan MO Dislocation, that the "raised" item is base generated in the matrix clause, and is related by pronominal binding, a discourse rule, to an element in the complement clause.

The cases of prolepsis and Raising discussed by the above authors could all be classified as examples of MO Dislocation. In all of the sentences cited by these authors, the element coreferential with the matrix object is the subject of the complement clause. Higgins claims that this type of prolepsis is the most common, though the related element in the complement need not necessarily be restricted to subjects.

In most cases of prolepsis in Latin the complement is an embedded question. MO Dislocation in Moroccan is extremely common with embedded questions (cf. the examples in (43) above), and, in fact, verbs that do not allow MO Dislocation with a regular sentential complement permit that construction with an embedded question complement. The verb *fhemutu 'understand,' for example, was not included in the class of MO Dislocation verbs in the discussion above, but it does take MO Dislocation with an embedded question complement. These facts are illustrated in (142) below.

(142) a. fhemtu aš kaygul.
understood-1sg-3sgm what CONT-3sgm-say
'I understand (him) what he's saying.'

b. *fhemtu (belli) mša.
understood-1sg-3sgm that went(3sgm)
'I understand (him) that he left.'
(142) shows that the verb *fhem* allows MO Dislocation only in the case where the COMP is an embedded question, and not a regular COMP.

Another way in which MO Dislocation with embedded questions is freer than with regular sentential complements is that the dislocated element may be an oblique object as well as a direct object when the complement is an embedded question.

(143) a. ṭedd lbal lũ'estad aš kaygul.  
   *give attention to-the-teacher what CONT-3sgm-say*  
   'Pay attention to (the teacher) what he's saying.'

   b. sewwel ēla muḥend waš ūlla mazal.  
   *ask on Mohand whether came(3sgm) or not yet*  
   'Ask (about Mohand) whether he came or not yet.'

Further examples of MO Dislocation with embedded question complements are provided in (144) below.

(144) a. sir tšuf muḥend aš kaydīr.  
   *go 2sg-see Mohand what CONT-3sgm-do*  
   'Go see (Mohand) what he's doing.'

   b. ma ērēfti muḥend fin mša.  
   *NEG know-1sg Mohand where went(3sgm)*  
   'I don't know (Mohand) where he went.'

   c. waš ērēfti muḥend fuqaš xrež?  
   *Q know-2sg Mohand when went out(3sgm)*  
   'Do you know (Mohand) when he went out?'

In each of the examples in (144) above, an NP occurs in matrix object position whose coreferential element is the subject affix on the verb in the embedded question complement. The full range of question words can occur with the MO Dislocation construction, though of course only verbs
that subcategorize for an embedded question complement permit an embedded question with MO Dislocation.

All of the sentences given above have a corresponding form without MO Dislocation, as all the verbs involved subcategorize for an embedded question complement. As is usual with the MO Dislocation construction, sentences with an MO dislocated element and those without have the same meaning, except for the prominence accorded the MO dislocated item. The non-MO Dislocation forms of the above sentences are given in (145) below.

(145) a. fhemt aš kaygul.
understood-1sg what CONT-3sgm-say
'I understand what he's saying.'

b. ṭeṛd 1bal laš kaygul l'ustad.
give attention to-what CONT-3sgm-say the-teacher
'Pay attention to what the teacher is saying.'

c. sir tšuf aš kaydir muḥend.
go 2sg-see what CONT-3sgm-do Mohand
'Go see what Mohand is doing.'

d. ma ṣeṛeft fin mša muḥend.
NEG know-1sg where went(3sgm) Mohand
'I don't know where Mohand went.'

e. waš ṣeṛefti fuqaš xrež?
Q know-2sg when went out(3sgm)
'Do you know when he went out?'

One type of MO Dislocation sentence with an embedded question has the same form as the corresponding non-MO Dislocation sentence; the example below involves a verb in Class (118c), whose object is always thematic whether or not a COMP occurs.
Since the verb *ellem always takes an object with a COMP, the non-MO Dislocation form is identical to the MO Dislocation form.

The objects that occur in the above examples with embedded question COMPs are indeed MO Dislocation objects, as they may question or relativize with an affix instead of a gap. The examples below illustrate the questioning of MO dislocated objects with embedded question COMPs.

(147) a. ŋun elli katellem / *katellem kif yyenni?
who that CONT-2sg-teach-3sgm CONT-2sg-teach how 3sgm-sing
Who are you teaching him / teaching how to sing?

b. ŋun elli mā siti tufi / ?tuf aš kaydir?
who that went-2sg 2sg-see-3sgm 2sg-see what CONT-3sgm-do
Who did you go see him / see what he was doing?

In the examples in (147), when an MO dislocated object is questioned, an affix occurs in its place.

The MO Dislocation object in the sentences above may be non-thematic with an embedded question COMP, just as it may be with a regular COMP. The example in (148) below illustrates a case of a non-thematic object with an embedded question.

(148) ma kaneṣref fi mā ηa.
NEG CONT-lsg-know-NEG Mohand but knows-1sg-3sgm where went(3sgm)
'I don't know Mohand, but I know (him) where he went.'

In (148), the object of the verb ẹref is non-thematic, as the speaker states that he doesn't know Mohand. The object thus does not correspond to a
semantic argument of the verb *$\epsilon$ref*.

Given the examples in (143), (144), and (147) above, it would appear that the four classes of verbs listed in (118) have merged into just two classes when the complement is an embedded question. The verbs whose object is always thematic with a COMP form one class, as in (118c) (the verbs *seyyer, hezzer*), and the other three verb classes (118a, b, and d) form just one other class. The non-MO Dislocation verb *fhem*, in Class (118d), takes MO Dislocation with an embedded question complement, and verbs from the other two classes (118a) and (118b), whose objects are either obligatorily or optionally non-thematic with a COMP, take MO Dislocation with embedded questions as well.

I have no explanation at this time for why MO Dislocation should be more free with embedded question complements than with regular sentential complements, but the presence of the *wh*-word seems to license certain otherwise unacceptable structures.
CHAPTER IV  XCOMP OR COMP?

The preceding chapters involved verbs which subcategorize for the closed function complement COMP. In this chapter, verbs which appear to take open complements will be examined. An open function complement, XCOMP, has no phrasal subject, but does have a subject in f-structure that is functionally controlled. In Moroccan an XCOMP may be either adjectival, nominal, or prepositional.1

An example of a verb that was said in Chapter I to subcategorize for an XCOMP is the verb *kan* 'be,' whose partial lexical entry is repeated below in (1a), along with an example sentence in (1b).

(1) a. kan : V, ↑PRED= 'KAN<(XCOMP)>'(SUBJ)
↑SUBJ=↑XCOMP SUBJ

    b. kan lweld zwin.
       was(3sgm) the-boy beautiful
       'The boy was beautiful.'

The lexical rule of functional control provides the control equation in the above lexical entry. All verbs that take XCOMPs include a control equation in their lexical entry, which specifies the controller of the XCOMP SUBJ. The control equation is either redundantly provided by the lexical rule of functional control, or exceptionally specified by the verb itself. In the case of *kan*, since its only argument other than the XCOMP is a SUBJ argument, that SUBJ must be the controller of the XCOMP SUBJ.

---

1 VP XCOMPs do not exist in Moroccan, though they do in English, because all verbs in Moroccan have anaphorically controlled rather than functionally controlled subjects; see Chapters I and II.
The adjective *zwin* 'beautiful' has the lexical entry in (2) below.

(2) *zwin*: A, ↑PRED='ZWIN<(SUBJ)>'

The lexical entry above specifies that the adjective *zwin* is subcategorized for a SUBJ argument.

In the following discussion I will demonstrate that, contrary to the assumptions made in Chapter I (and repeated above), the complement subcategorized for by the verb *kan*, and most other verbs in Moroccan, is the closed complement COMP, rather than XCOMP. I will proceed by showing that XPs in Moroccan may stand alone as fully interpretable sentences, and thus must have an internal subject; a construction that has an internal subject is assigned a closed function.

4.1 Adjective Phrases

In Chapter II it was shown that the affixes AF₄, which occur on participles and adjectives, specify feature values for the item's subject, including an optional SUBJ PRED='PRO' value. This SUBJ PRED='PRO' equation was used when participles occurred in sentences with no lexical subject, as in (3) below.

(3) a. *zayy*. 'I'm (m) / you're (m) / he's coming.'

b. *zayybahum*. 'I'm (f) / you're (f) / she's bringing them.'

Since the same affixes occur on adjectives as on participles, it would be expected that adjectives, too, would be able to stand alone as sentences, without lexical subjects, and without an overt verb, in present tense equational sentences. Such sentences do, in fact, exist, as demonstrated
in (4) below.²

(4) a. kibir.
big(m)
'I'm (m) / you're (m) / he's big.'

b. zwina.
beautiful-f
'I'm (f) / you're (f) / she's beautiful.'

The SUBJ PRED='PRO' equation on AF₄, along with the other information contained therein, provides the values for the features of a pronominal subject for the adjectives, just as it does with participles. Since the above adjectives can stand alone as sentences, they must include an internal subject which is anaphorically, rather than functionally, controlled.

The sentences in (4) are present tense equational sentences in which no lexical subject occurs. Under the analysis of present tense equational sentences adopted in Chapter I, the XP bears the PRED value for the clause. To account for the sentences in (4) above, the P-S rule generating the present tense equational sentences given in Chapter I is modified as in (5) below.

² These adjectives are interpreted as full sentences in Moroccan, though they are not in English. The following dialogue, for example, is well-formed in Moroccan, but not in English.

A. ki dayra xWtek?
how doing-f sister-2sg
'How's your sister/What's your sister like?'

B. zwina.
beautiful-f
'She's beautiful.'
In rule (5) the NP SUBJ is marked as optional, and thus a sentence may consist of just an XP. (In Chapter I this NP was not marked as optional.)

The f-structure for sentence (4b), repeated below for convenience, is given in (6).

(4b) zwina. 'I'm (f) / you're (f) / she's beautiful.'

(6) \[
\begin{array}{c}
\text{SUBJ} \\
\text{NUM SG} \\
\text{GEND FEM} \\
\hline
\text{PRED 'ZWIN<SUBJ>}' \\
\text{TENSE PRESENT}
\end{array}
\]

The adjective phrase in the above f-structure is the head of a verbless present tense equational sentence, and it thus provides the PRED value. No lexical subject occurs, and so the features of the SUBJ are provided by the affix AF₄ that occurs on the adjective.

Since the AP in (4b) contains an internal subject, it cannot be assigned the open function XCOMP, but must have the closed function COMP. Thus, the verb kan will subcategorize for a COMP, as in (7) below, rather than an XCOMP, contrary to the claim of (1a) above.

(7) \[
\text{kan : V, } \uparrow\text{PRED='KAN<(COMP)>'(SUBJ)}
\]

The above lexical entry does not include a control equation, as the function
COMP does not permit functional control of its SUBJ.

One past tense form of sentence (4b), given in (8a) below, will thus have the f-structure in (8b).³

(8) a. kant zwina. 'She was beautiful.'

b. 

In (8b) the features of the matrix subject are given by the lexical entry for the subject affix AF₁ on kant 'she was.' The features of the COMP SUBJ are determined by the affix AF₄ on the adjective zwina.

4.2 Noun Phrases and Prepositional Phrases

Just as APs can stand alone as fully interpretable sentences in Moroccan, so can NPs and PPs. The following are examples of sentences containing only an NP and a PP in c-structure.

³ Since AF₄ does not specify a value for SUBJ PERS, the sentence zwina has two other possible past tense forms: kent zwina 'I was beautiful.' and kenti zwina 'You were beautiful.'
(9) a. 'ustad.
    teacher(m)
'I'm (m) / you're (m) / he's a teacher.'

b. muḥamya.
    lawyer-f
'I'm (f) / you're (f) / she's a lawyer.'

c. muḥamyin.
    lawyer-pl
'We're / you're (pl) / they're lawyers.'

(10) a. feḍḍar.
    in-the-house
'I'm / you're / he's / she's / it's / we're / you're (pl) / they're
in the house.'

b. fuqṭṭebla.
    on-the-table
'I'm / you're / he's / she's / it's / we're / you're (pl) / they're
on the table.'

The NPs in (9) are fully interpretable sentences, and thus they must
have PRO subjects. NPs have affixes that specify the number and gender of
their subjects, though for many nouns the plural is marked suppletively
rather than through affixation of a suffix. I will nevertheless assume for
the purpose of this discussion that nouns are suffixed with the affixes AF₄,
as are adjectives and participles.⁴ These affixes provide the number and
gender features for the PRO subject of the NP, and thus (9b) will have the
f-structure given below in (11b).

---
⁴ Those nouns with morphological plurals will be individually marked in
their plural form lexical entry with the following lexical equations:
(+SUBJ PRED='PRO'), (+SUBJ NUM=PL).
(11) a. lexical entries:

\[ a : A F_3, (\text{SUBJ PRED}='\text{PRO}') \]
\[ \uparrow \text{SUBJ NUM} = \text{SG} \]
\[ \uparrow \text{SUBJ GEND} = \text{FEM} \]

\[ \text{mubamya} : N, \uparrow \text{PRED}='\text{MUHAMI<(SUBJ)>}' \]
\[ (\text{SUBJ PRED}='\text{PRO}') \]
\[ \uparrow \text{SUBJ NUM} = \text{SG} \]
\[ \uparrow \text{SUBJ GEND} = \text{FEM} \]

b. SUBJ \[
\begin{array}{c}
\text{PRED 'PRO'} \\
\text{NUM SG} \\
\text{GEND FEM} \\
\text{PRED 'MUHAMI<(SUBJ)>'} \\
\text{TENSE PRESENT}
\end{array}
\]

In (11a), the lexical entry for \text{mubamya} includes the features specified by the AF\(_3\) \text{-} a which is suffixed to the noun. Since in (11b) no person value is specified for the SUBJ of \text{mubamya}, its antecedent may be either first, second, or third person, provided that that possible antecedent is feminine singular. Thus, a sentence consisting only of a c-structure NP receives a full interpretation in Moroccan.

The PP sentences require a slightly different analysis, as PPs have no affixes which specify information about their subjects. The lexical entry for a representative preposition, \(f\) 'in,' is given in (12) below.

(12) \(f\) : P, \(\uparrow \text{PRED}='\text{F-<(SUBJ)(OBJ)>}'\)

5 Prepositions have three sets of lexical entries: two for when they are oblique arguments (see Chapter I), and the other for when they are predicates. Nouns also have two sets of lexical entries, for when they are subjects and predicates. The lexical entries are systematically related by rules of predicate composition (cf. Bresnan (1979)).
Using the lexical entry for the preposition \( f- \) given in (12), the f-structure for (10a), repeated here for convenience, is that of (13).

(10a) *fedda*. 'I'm / you're / he's etc. in the house.'

(13) 
\[
\begin{array}{c}
\text{PRED 'F-<(SUBJ)(OBJ)>'} \\
\text{OBJ [ PRED 'DDAR' ]} \\
\text{ [ NUM SG ]} \\
\text{ [ PERS 3 ]} \\
\text{ [ GEND FEM ]} \\
\end{array}
\]

The f-structure in (13) is incomplete, as it contains no value for SUBJ, and the PRED \( f- \) subcategorizes for a SUBJ as well as an OBJ.

Since PPs have no affixes specifying SUBJ features, the lexical entry for the preposition \( f- \) in (12) must be revised, so as to provide a PRED value for its subject. The revised lexical entry is given in (14) below.

(14) \( f- : P, \uparrow \text{PRED='F-<(SUBJ)(OBJ)>'} \) 
\[ (\uparrow \text{SUBJ PRED='PRO'}) \]

The revised lexical entry for the preposition \( f- \) given in (14) includes an optional equation specifying that its subject's PRED='PRO'. This lexical entry will now produce a well-formed f-structure for sentence (10a), that of (15).

(15) 
\[
\begin{array}{c}
\text{SUBJ [ PRED 'PRO' ]} \\
\text{PRED 'F-<(SUBJ)(OBJ)>'} \\
\text{OBJ [ PRED 'DDAR' ]} \\
\text{ [ NUM SG ]} \\
\text{ [ PERS 3 ]} \\
\text{ [ GEND FEM ]} \\
\text{ TENSE PRESENT } \\
\end{array}
\]
Since no features other than PRED='PRO' are specified for the SUBJ, the antecedent to the 'PRO' can be of any gender, person, or number. Rules of discourse will then choose the proper antecedent for the subject of the sentence.

4.3 XP sentences

Sentences consisting of just a c-structure AP, PP, or NP (which I will call "XP sentences") are found in all environments in which full sentences occur. An XP sentence may occur, for instance, as the complement to the head of a relative clause, as the examples below indicate.

(16) a. etini lektab elli fugetæbla.
in-give-lsg the-book that on-the-table
'Give me the book that (is) on the table.'

b. warinin ḫrażel elli 'ustad.
show-lsg the-man that teacher
'Show me the man that (is) a teacher.'

c. etini lbaliza elli tqila.
in-give-lsg the-suitcase that heavy-f
'Give me the suitcase that (is) heavy.'

In (16a) the modifier of the relative clause head is a PP, in (16b) the complement is an NP, and in (16c) it is an AP.

4.3.1 MO Dislocation

Another environment in which full sentences occur is as COMPs to MO Dislocation verbs. XP sentences also occur in this environment, as the examples below demonstrate.
(17) kanbγih sxun / fettebsil / *'ustad.
CONT-1sg-want hot(m) in-a-plate teacher(m)
'I like it hot / in a plate / *a teacher.'

(18) lgitu zwin / feqdar / 'ustad.
found-1sg-3sgm beautiful(m) in-the-house teacher(m)
'I found him beautiful / in the house / a teacher.'

(19) eɾefta drière / feqdar / muḥamya.
know-1sg-3sgf nice-f in-the-house lawyer-f
'I know (her)(that she's) nice / in the house / a lawyer.'

(20) źeftu zwin / feqdar / ?muğewvir.
saw-1sg-3sgm beautiful(m) in-the-house photographer
'I saw (him) (that he's) beautiful / in the house / a photographer.'

(21) dennitu drièref / feqdar / 'ustad.
thought-1sg-3sgm nice(m) in-the-house teacher
'I thought (him) (that he's) nice / in the house / a teacher.'

(22) ttṣabni muḥend zwin / feqdar / 'ustad.
seemed(3sgm)-1sg Mohand beautiful(m) in-the-house teacher
'I thought Mohand (was) beautiful / in the house / a teacher.'

(23) kanhesbu ţwil / *feqdar / ḥaḥel mezya.
CONT-1sg-consider-3sgm tall(m) in-the-house man good(m)
'I consider him tall / *in the house / a good man.'

---

6 The first reading of this sentence is 'I saw him in the house,' where physical perception is involved. When the complement is negated, however, the MO Dislocation reading is found: źeftu masi feqdar 'I saw that he wasn't in the house.'

7 The verb hseb 'consider' was not included in the class of MO Dislocation verbs in Chapter III. It does, however, function like the MO Dislocation verbs with respect to XP COMPs. Other MO Dislocation verbs, such as xaf 'fear,' are not included here, as they have strict limitations on their COMP tense; xaf usually occurs only with an imperfect or complementizer+future complement verb, and thus cannot occur with a COMP in which no overt verb occurs.
In each case of (17) through (23) above, the verb appears with a COMP which is an AP, a PP, and an NP. In these sentences, the object of the matrix verb may be non-thematic, as shown by the examples below.

(24) ma kanc€effuš walakin eʃeftu ḏriyef / feddar / 'ustad. 
NEG CONT-lsg-know-3sgm-NEG but know-lsg-3sgm nice(m) in-the- teacher 
'I don't know him, but I know (him)(that he's) nice/ in the house / a teacher.'

(25) ma ʃeftuš walakin ʃeftu maʃi feddar. 
NEG saw-lsg-3sgm-NEG but saw-lsg-3sgm not in-the-house 
'I didn't see him, but I saw (him)(that he was) not in the house.'

A further indication that MO Dislocation is involved in the sentences in (17) through (23) above is the fact that the matrix object leaves a pronominal affix in its within-clause position when it is questioned or relativized, rather than a gap.

(26) a. *škun elli eʃefti feʃdar? 
who that know-2sg in-the-house 
'Who do you know (is) in the house?'

b. škun elli eʃeftih feʃdar? 
who that know-2sg-3sgm in-the-house 
*Who do you know (him)(that is) in the house?

8 Though all of the verbs subcategorize for a COMP, not all verbs allow all categories as the head of this COMP. ḃešeb, for instance, cannot occur with a COMP which is a PP. This fact suggests that some verbs impose semantic restrictions on their arguments. The restrictions may appear to be categorial, as there is often a correspondence between semantic type and lexical category. This correspondence does not always hold, however, and several scholars have demonstrated that the restrictions imposed by a verb on its arguments are semantic, rather than categorial; see Simpson (1983) and Maling (in press) for details.
In (26b) an object affix appears on the verb in place of the questioned object. The ungrammaticality of (26a), where this affix does not appear, and the grammaticality of (26b) indicate that the questioned object is an MO dislocated object, rather than a normal object. If that object is in MO Dislocation position, then it requires a coreferential pronominal element in a subordinate clause for it to receive an interpretation through anaphoric binding. Since the sentences in (17) through (23) are well-formed, the XP in each case must be a closed complement, with its PRO subject being the coreferential element required by the MO dislocated object.

For those verbs that take a complementizer, ᶓref, ᶓaf, ᶜenn, and ttšhab l-, the complementizer may occur preceding the XP COMP, just as it does with the full sentence COMPs (cf. Chapter III). This fact is illustrated in (27) through (30) below.

(27) ᶓreftu belli zwin.
    know-lsg-3sgm that beautiful(m)
    'I know (him) that (he is) beautiful.'

(28) ᶓaftu belli kbir.
    saw-lsg-3sgm that old(m)/big(m)
    'I saw (him) that (he was) old / big.'

(29) ᶜennitu belli waṣr.
    thought-lsg-3sgm that tough(m)
    'I thought (him) that (he was) tough.'

(30) ttšhabli muḥend belli zwin.
    seemed(3sgm)-to-lsg Mohand that beautiful(m)
    I thought Mohand that (he was) beautiful.
The presence of the complementizer in the above sentences indicates that the verb's complement is a COMP rather than an XCOMP.

When the complement is in the past tense, its closed complement nature is more clearly exhibited, as the sentences below indicate.

(31) ἑφτύ bellı kan zwin.
know-lsg-3sgm that was(3sgm) beautiful(m)
'I know (him) that he was beautiful.'

(32) ἑφτύ bellı kan zwin.
saw-lsg-3sgm that was(3sgm) beautiful(m)
'I saw (him) that he was beautiful.'

(33) ἑφτύ bellı kan zwin.
thought-lsg-3sgm that was(3sgm) beautiful(m)
'I thought (him) that he was beautiful.'

(34) ἑφτύ bellı kan zwin.
seemed(3sgm)-lsg Mohand was(3sgm) beautiful(m)
I thought Mohand that he was beautiful.

The MO Dislocation verbs, then, which subcategorize for a closed complement, provide evidence that PPs, APs, and NPs may have the function COMP.

4.3.2 Other COMP verbs

Certain verbs which are not in the MO Dislocation class subcategorize for an obligatory COMP. These verbs take verbal as well as XP sentences as their complement. Verbs in this class include, among others, wella 'become,' ban 'appear,' gbah 'be...in the morning,' bat 'spend the night,' sdeq 'turn out, end up,' and ἑα 'strike as.' Example sentences with these verbs are given below.
In each case of (35) through (40) above, a verb appears with a COMP whose head is an AP, an NP, a PP, and a V; again, not all verbs are compatible with every type of COMP.

The COMP of the verbs above in (35) through (40) is an obligatory

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9 ban muhend feddar: 'Mohand appeared in the house' is an acceptable sentence when feddar is not predicated of muhend but of the verb, i.e., where Mohand appeared.
argument, as evidenced by the ungrammaticality of the examples below, in which no COMP occurs.

(41) *wellat ṅażat.
    became-3sgf Najat
    *Najat became.

(42) *betna.
    spent the night-1pl
    'We spent the night.'

(43) *ṣedqat.
    turned out-3sgf
    *She turned out.

4.4 XCOMPs

All of the verbs discussed so far in this chapter subcategorize for complements which are the closed function COMP, rather than the open function XCOMP. If all verbs in Moroccan which subcategorize for an obligatory or optional complement can be shown to take a COMP rather than an XCOMP complement, then the function XCOMP could be entirely eliminated from the inventory of functions needed in the grammar of Moroccan. This grammar would thus be simplified, as the operation "functional control" would be eliminated along with the function XCOMP. Such a move, however, is not motivated for Moroccan, as there is a class of verbs which do not allow their complements to be COMPs.

The verbs above, in addition to taking closed complements in which no overt verb appears, also, for the most part, take verbal closed complements. There is a class of verbs, however, that subcategorize only for an optional resultative complement, a complement which can never be a closed complement.
A resultative, as shown below, is an AP, and since it is not propositional, it must have the function XCOMP, rather than COMP. Verbs that take an optional resultative complement include sbey 'paint,' sawb 'make,' teyyeb 'cook,' qteet 'cut,' sewwer 'draw,' hfer 'dig,' and nsej 'weave.' The grammaticality of the (a) sentences below indicates that the resultative complement is optional, while the (b) sentences demonstrate that verbs in this class never take closed complements.

(44) a. sbeyna ddar.
painted-lpl the-house
'We painted the house.'

b. sbeyna ddar biđa / *maši biđa.
painted-lsg the-house white-f not white-f
'We painted the house white / *not white.'

(45) a. sawbuhum.
made-3pl-3pl
'They made them.'

b. sawbuhum kbar bezzaf / *maši kbar bezzaf.
made-3pl-3pl big-pl alot not big-pl alot
'They made them very big / *not very big.'

(46) a. teyybat løhrira.
cooked-3sgf the-soup
'She cooked the soup.'

b. teyybat løhrira maľha / *maši maľha
cooked-3sgf the-soup salty-f / not salty-f
'She cooked the soup (too) salty / *not (too) salty.'

(47) a. qteettha.
cut-lsg-3sgf
'I cut it.'
b. qṣētha qṣira / *maši qṣira.
cut-1sg-3sgf short-f not short-f
'I cut it short / *not short.'

(48) a. ṣewwerha.
drew(3sgm)-3sgf
'He drew it.'
b. ṣewwerha mdewwra / *maši mdewwra.
drew(3sgm)-3sgf round-f not round-f
'He drew it round / *not round.'

(49) a. ḥefṛu ḥefṛa.
dug-3pl the-ditch
'They dug the ditch.'
b. ḥefṛu ḥefṛa yarqa / *maši yarqa.
dug-3pl the-ditch deep-f not deep-f
'They dug the ditch deep / *not deep.'

(50) a. neṣżat ḥṣerbiyya.
wove-3sgf the-rug
'She wove the rug.'
b. neṣżat ḥṣerbiyya kbira / *maši kbira.
wove-3sgf the-rug big-f not big-f
'She wove the rug (too) big / *not (too) big.'

The (a) sentences above indicate that the resultative complement is an optional argument of the verbs in (44) through (50). A resultative, which describes the result to the verb's object of the action denoted by the verb, is not propositional, but rather adjectival, as demonstrated by the (b) examples above. Negating the adjective, which is possible when the AP is a closed complement, is not possible with the resultatives. The examples below illustrate this contrast.
Another contrast between the class of COMP verbs and the resultative verbs is that verbs that take COMPs never occur with an AP complement with a resultative meaning: *shebнт mrїda 'I woke up sick' can never mean 'I was sick as a result of waking up.'

Since, then, the resultative complements are not propositional, they cannot be assigned the function COMP. These complements must therefore have the function XCOMP, and thus this function cannot be entirely eliminated from the function inventory of Moroccan. Since AP is the only category that occurs as an XCOMP, however, the function XCOMP in Moroccan is quite restricted.

The interpretation of sentences with XCOMPs involves functional control of the XCOMP SUBJ by the object of the verb. The lexical entries for the affixes AF⁴ indicate the feature values required for the XCOMP's functional subject. In other words, as shown in the f-structure for sentence (50b), given below, the optional SUBJ PRED='PRO' equation in the lexical entry of AF⁴ is not chosen, and the obligatory features on AF⁴ act as agreement markers.

(50b) neşżat zzerbiyya kbira. 'She wove the rug (too) big.'
The lexical rule of functional control provides the control equation on the lexical entry for the verb nšež in (52a). The XCOMP SUBJ in the f-structure in (52b) has no PRED value; however, the f-structure is well-formed, as that SUBJ receives an interpretation through the effect of the control equation, by being identified with the verb's object. The feature specifications in the XCOMP SUBJ ensure that the features of the XCOMP SUBJ controller and the XCOMP adjective itself do not clash.
There is another class of verbs that behaves like the verbs of the resultative class. Resultative verbs do not take closed complements, and their complement must be an AP. Similarly, certain verbs that have undergone a causativization lexical rule only take an adjectival complement, even when their non-causative form took a COMP. An example is given in (53) below.

(53) a. ʂbeŋt mṛida / feddar / kansible.
	morninged-lg sick-f in-the-house CONT-lg-wash
'I woke up sick. I spent the morning in the house / washing clothes.'

b. ʂbbëñni mṛida /*maʃi mṛida /*feddar /*kansible.
	caused to sick-f not sick-f in-the- CONT-lg-
morning(3sgm)-lg house wash
'It caused me to spend the morning sick /*not sick / in the house / washing clothes.'

In (53a), the verb ʂbeŋ 'spend the morning' subcategorizes for a COMP. Its causative form in (53b), however, takes only an adjectival complement, which cannot be a closed function. In this sense the verb in (53b) behaves like the verbs that take resultatives.

In summary, then, the function XCOMP in Moroccan is restricted to AP complements, and most verbs that subcategorize for a complement take the closed function complement COMP. Though superficially resembling XCOMPs, XP sentences can be shown to be propositional in nature, thus greatly limiting the occurrence of XCOMPs in Moroccan.
CONCLUSION

In this study of complementation in Moroccan Arabic, Chapters I and II provide a brief introduction to the syntax of Moroccan, analyzed within the framework or Lexical-Functional Grammar. Chapter III represents the main focus of the dissertation, an examination of the Moroccan MO Dislocation construction.

This construction is unusual in that (a) an NP appearing in matrix object position bears the TOPIC relation with respect to an embedded clause rather than to the matrix clause, and (b) this TOPIC relation is subcategorized for by the matrix verb, not the embedded verb. Furthermore, the MO dislocated NP, though functionally the object or oblique object of the matrix verb, is often not a thematic argument of that verb. This matrix object or oblique object is related by the process of anaphoric binding to a coreferential element in the lower clause, thereby receiving a semantic interpretation.

These facts about MO Dislocation are strikingly similar to the facts of Left-Dislocation; in the latter construction, an NP which is not the argument of any verb bears the TOPIC relation with respect to a subordinate clause, and the left-dislocated NP is related to a coreferential element in that subordinate clause by anaphoric binding.

These similarities indicate that MO Dislocation and Left-Dislocation are, in fact, instances of the same operation, the only major difference being the position in which the dislocated item occurs in each case. Certain other differences follow from the fact that an MO dislocated NP appears in the position of object or oblique object to a verb, while a left-dislocated
NP is not within the domain of a verb: a reflexive may appear in MO Dislocation position, but not in Left-Dislocation position; an independent pronoun may not be MO dislocated, though it may be left-dislocated; and, when pronominal, an MO dislocated NP is an affix, whereas a left-dislocated NP is not.

Since a basic property of LFG is that a one-to-one correspondence between f-structure and c-structure is not required, the dual nature of the MO dislocated NPs is quite naturally expressed by assigning a c-structure NP the function OBJ, and functionally identifying that OBJ with the function TOPIC. Thus, one c-structure NP is associated with two functions in f-structure, and therefore the behavior of an MO dislocated NP as an OBJ with respect to certain operations, and as a non-argument with respect to certain others, is explained.

Chapter IV examines further instances of complementation in Moroccan, and it is concluded that most examples of Moroccan complementation involve closed, rather than open, complements. Further research is needed to explain the fact that only APs seem to appear as open as well as closed complements in Moroccan.


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