ON DEFINING CATEGORIES: AUX AND PREDICATE IN

COLLOQUIAL EGYPTIAN ARABIC

by

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This thesis is addressed to the problem of defining the syntactic categories of a language, and to the question of how categories may be related across languages. Language independent definitions of the categories SUBJECT, AUX, PREDICATE, and ADVERBIAL in terms of the functional (function/argument) structure of sentences are given, and the instantiation of these categories in Egyptian Arabic is shown. Verb is defined as a morphological class, distinct from sentential nodes such as AUX and PREDICATE, either or both of which may dominate a verb in certain sentences. Both AUX and PREDICATE dominate members of morphological classes other than verb, and there are sentences which have no verb. It is suggested that the distinction between a morphological class verb and the syntactic categories AUX and PREDICATE may be useful in the analysis of other languages also, in particular in the analysis of English.

The syntactic structure of sentences in the INDICATIVE mood (declarative and interrogative sentences) in Egyptian Arabic is described, and the inventories of the categories are given. INDICATIVE sentences are finite, and tense contrasts are marked in AUX. Sentences in the non-finite moods IMPERATIVE and SUBJUNCTIVE have no AUX node. Non-finite CONDITIONAL sentences have an AUX node that is syntactically and semantically distinct from the AUX in finite sentences; PAST tense alone appears, and this tense-marking does not correspond to temporal reference, but signals irrealis.
An analysis of subordinate clauses is given, and it is argued that complex sentences with subordinate clauses are necessarily modal. Some complex sentences have finite embedded clauses; these are epistemic constructions. Other complex sentences have non-finite embedded clauses; these are deontic constructions. Sentences marking the modal notions of necessity/possibility and obligation/permission are described. There are no AUX modals in Egyptian Arabic; modality is marked in adverbs and in predicates in the matrix clauses of complex sentences. These modal predicates take either finite or non-finite complements, producing epistemic and deontic constructions. Therefore, the two sets of modal operators necessity/possibility and obligation/permission are mutually exclusive in distribution, and may be collapsed into a single pair. It is proposed that this relationship between these pairs of modal operators is a feature of the functional structure of modal sentences in universal grammar.

In conclusion, the co-variance of the categories across sentence mood is stated. The syntactic categories AUX and PREDICATE in English and Egyptian Arabic are compared, and the role of auxiliary verbs in each is described. A comparison of AUX and PREDICATE in a small sample of other languages is included. Properties of the categories in English and Egyptian Arabic are summarized, in order to show that the defining features selected for the language independent definitions of the categories result in a set of economical and productive category definitions.
CHAPTER 1

INTRODUCTION

1.1. The Language

This study of the syntactic categories of Colloquial Egyptian Arabic is based on the everyday language of educated Cairene Egyptians. Educated Arabs are diglossic; they speak Modern Standard Arabic as well as their colloquial language, and sometimes a range of styles in between (see Ferguson, 1959; Blanc, 1964). Modern Standard Arabic is the language of religion, government, literature, education, and newspapers. The colloquial language is the language of the home, family, market, and some areas of entertainment such as films, radio, and television; recently, some popular literature is incorporating some features of the vernacular. Some sectors of society oppose the use of the colloquial language and advocate replacing it with Modern Standard Arabic, a Pan-Arabic medium of communication. As in many long-inhabited areas, there is great regional diversity of dialects in Egypt, as well as differences in dialects that reflect social and economic class membership.

1.2. Recent Studies of Egyptian Arabic

There are a number of excellent works on the language available, and I have made extensive use of them. Some of the earliest work was done by the late Richard Slade Harrell and his colleagues and students at the Institute of Languages and Linguistics at Georgetown University.
Contemporary with this and perhaps still the most important source on the language is the work of Prof. T. F. Mitchell (1956, 1962) of the University of Leeds. These books are for the language learner and address no theoretical issues. Mitchell's work is extremely rich and full of significant detail; no example is wasted. I have also benefited from the work of Hanna (1967) and from two University of Texas Linguistics dissertations, Gamal-Eldin (1967) and Aboul-Fetouh (1969) as well as the work of Abdel-Malek (1972). None of these works is concerned with the theory of categories, but they are sources of valuable information on the language. I have borrowed or adapted a great many sample sentences from these books, and I have attempted to credit each author; the syntactic analysis of these sentences given here is my own. Within the last five years, the important work of Abdel-Massih and his colleagues at the University of Michigan has appeared (Abdel-Massih, 1975; Abdel-Massih, Badawi, and Abdel-Malek, 1978; Abdel-Massih, Badawi, Abdel-Malek, and McCarus, 1978; Abdel-Massih, Badawi, and Killean, 1978; Abdel-Massih et al., 1979). This includes a didactic grammar, and a four-volume "Comprehensive Study" of Egyptian Arabic, including texts, proverbs, vocabulary, and reference grammar, all designed for the language learner. In 1975 Hilary Wise's University of London dissertation, A Transformational Grammar of Spoken Egyptian Arabic, appeared; this is the major theory-oriented publication on the syntax of the language. Wise's study provides a great many insights into the language, and the syntactic analysis of the language he proposes differs primarily from the one offered here as follows:
1. Wise does not explicitly address the question of the specification of the syntactic categories of the language, and the categories he implicitly recognizes are not the same as those recognized here. (That is, AUX is not recognized as a sentential category, nor is SUBJECT; and the term PREDICATE is used differently.)

2. No transformational derivations are offered here.

3. The goal of this study is to sort out the morphological and syntactic components of the grammar, and to relate the latter to the functional structure of sentences in the language.

1.3. The Phonological System of the Language

Abdel-Massih (1975) and Abdel-Massih et al. (1979) give a useful description of the phonology for the language learner. There is also a recent University of Massachusetts dissertation on the phonological system of the language by Broselow (1976), which provides an excellent statement of certain rules such as the shortening of long vowels in certain environments, and the appearance of an epenthetic vowel in certain consonant sequences. I strongly recommend Broselow's study to anyone interested in the language, although I do not subscribe to her view that the root and (vowel) pattern system in the morphological component of the grammar is becoming obsolete.

Egyptian Arabic has three short vowels and five long, as follows:

\[ \begin{align*}
  i, \ ii & \quad u, \ uu \\
  e, \ oo & \quad a, \ aa 
\end{align*} \]
(Long vowels are written as vowel sequences.) There are also the semivowels \( w \) and \( y \), and the diphthongs \( aw \) and \( ay \). The consonants are:

\[
(p)\ f\ t\ \ddot{t}\ s\ \ddot{s}\ \dddot{s}\ k\ x\ q\ h\ H\ \prime
\]

\[
b\ d\ \ddot{q}\ z\ \dddot{z}\ g\ \dddot{g}\ \dddot{9}
\]

\[
m\ n\ r\ \ddot{r}\ l\ l
\]

\( (p) \) occurs infrequently in loanwords. \( (\ddot{t}\ \ddot{q}\ \dddot{z}) \) are a series of pharyngealized consonants, the "emphatic" consonants of traditional Arabic grammar. \( (\ddot{r}\ l) \) have a similar pharyngealized quality, and affect neighboring vowels in the same way as the pharyngealized stops and fricatives. \( (x\ \dddot{g}) \) are the voiceless and voiced velar fricatives; \( (q) \) is a post-velar stop, infrequent in the colloquial, where it is usually replaced by the glottal stop \( (\prime) \). \( (H\ 9) \) are the voiceless and voiced pharyngeal fricatives. I refer the reader to Broselow for an account of the distinctive features, and of the complete phonological system.

1.4. Plan of the Thesis

This thesis is intended as a contribution to the theory of categories in universal grammar. It follows the work of Akmajian, Steele, and Wasow (1979) who argued for the category AUX as at least an available syntactic category in universal grammar, and the work of Steele (in Steele et al., in press) on defining syntactic categories across languages. In Chapter 2, I will argue that there is a constituent of Egyptian Arabic sentences that marks tense and has a small, closed inventory, and therefore may be counted as an instantiation of the category AUX in the language, according to the language-independent definition of AUX provided by Steele (in Steele et al.,
in press). I will then give an alternative language-independent definition of AUX, and of all the sentential constituents of Egyptian Arabic, in terms of the functional structure of sentences. These syntactic categories are: SUBJECT, AUX, PREDICATE, and ADVERBIAL.

In Chapter 3, I will demonstrate the instantiation in indicative sentences in Egyptian Arabic of the categories defined in Chapter 2, and specify the inventories of these categories. PREDICATE and AUX types will be defined, and the conditions on the appearance of subjects and NEGATIVE attachment will be stated in terms of these category types, showing the utility of an analysis of sentences in terms of these categories.

In Chapter 4 the structure of non-indicative sentences in the language is described. IMPERATIVE and SUBJUNCTIVE sentences have no AUX node, and have a PRED constituent which is distinct from the PRED constituent of indicative sentences. CONDITIONAL sentences have an AUX node, but this AUX is quite different from the AUX of indicative sentences. Only PAST tense is marked in the COND AUX, as compared to the range of tense contrasts marked in AUX in indicative sentences, and NEG attachment may vary from that shown in indicative sentences. The PAST tense marked in the COND AUX has a different semantic function from that of tense marking in indicative sentences. Tense in the IND mood marks *realis*; PAST tense in the COND mood marks *irrealis*, hypotheticality. A comparison of the syntactic structure of IND and non-IND sentences in EA shows how AUX and PRED co-vary across sentence mood.
Chapter 5 presents a survey of subordinate clause types in the language, and I will argue for the view that all complex sentences are modal. Chapter 6 will give an analysis of the modal system of EA in some detail. The modal notions of possibility and necessity are not marked in AUX in EA, but in adverbial constructions and in complex sentences. I will also give an account of modal ambiguity and the interdefinability of the modal operators in universal grammar, as exemplified in the modal systems of EA and English.

In the last chapter, a summary of the co-variance of the categories across sentence mood will be given. The categories AUX and PREDICATE in English and Egyptian Arabic will be compared, in order to show the role of verbs in each. A cross-language survey of these categories in a small sample of languages will be given, in order to arrive at some generalizations on their non-definitional properties, and so validate the language-independent definitions of the categories provided in Chapter 2.
2.1. On Defining Categories

The syntactic categories of a language are pieces of sentences to which the rules of the grammar refer. There may be movement rules, or rules stating agreement between constituents, or case marking may be a feature associated with particular sentential nodes. I assume that for any syntactic analysis, categories may not overlap, although minor categories may be dominated by primary ones, and I assume also that the constituency of a category may be identified. Given a set of language internal categories, relating these categories to the categories defined for some other language is the crucial question in the study of language universals. Akmajian et al. (1979) observe that in order to relate syntactic categories across languages, reference must be made to semantic features associated with these language internal categories. This must be correct, since by definition the categories determined by different grammars are not identical, and it is some semantic correspondence between categories across languages which prompts us to relate them. Steele (in Steele et al., in press) proposes that categories across languages may be termed equivalent when they may be recognized as language particular instantiations of a category defined in language-independent terms. Thus the category AUX across language is defined as follows:
Given a set of language internal analyses, in terms of constituents, those constituents which may contain only a specified (i.e., fixed or small) set of elements, crucially containing elements marking tense and/or modality will be identified as non-distinct (Steele, in Steele et al., in press, n.p.).

Steele emphasizes (1) that this definition does not depend upon the semantic criterion alone—the syntactic criterion that the constituency of this category be fixed and small is of equal importance, and (2) that this category definition must pass the empirical test of selecting a set of non-distinct categories across languages that share linguistically interesting non-definitional properties.

In the next section of this chapter, 2.2, I will present language internal evidence for recognizing a constituent of Egyptian Arabic sentences that may be recognized as an instantiation of the category AUX across languages, as defined in the passage quoted above. In the following sections, I will propose an alternative and more economical definition of AUX as one of a set of language independent category definitions that make reference to the functional structure of sentences. Distinctions between morphological classes, morpho-syntactic categories, and syntactic categories will be discussed in connection with these definitions.

2.2. Arguments for a Syntactic Category AUX in Egyptian Arabic

I will argue here that there is a constituent of Egyptian Arabic sentences where tense is marked, and that tense is never marked elsewhere in the sentence. The fixed constituency of this proposed category will be specified as follows: the finite inflections of the
auxiliary verb KWN, the copula; the particles marking sentential negation; and certain pronouns marking person subject. I will argue that this constituent of Egyptian Arabic sentences therefore qualifies as an instantiation of the category AUX as defined by Steele.

The following sentences show differences in temporal reference:

(1) \[
\text{kAan}\left\{\begin{array}{c}
\text{bi-IMPF 3ms-PRO} \\
\text{Haykuun}
\end{array}\right\}
\]
He \{ \text{is} \} \text{writing-it}
He \{ \text{was} \} \text{will-be}

(2) \[
\text{kAan}\left\{\begin{array}{c}
\text{PERF 3ms-PRO} \\
\text{Haykuun}
\end{array}\right\}
\]
He \{ \text{is} \} \text{written-it}
He \{ \text{was} \} \text{will-be}

(3) \[
\text{Hayiktibu}\left\{\begin{array}{c}
\text{Ha-IMPF 3ms-PRO} \\
\text{*Haykuun}
\end{array}\right\}
\]
He \{ \text{is} \} \text{gonna-write-it}

These examples show the verb KWN marking tense contrasts with the three verbal paradigms of the indicative mood in Egyptian Arabic. ¹ Example

¹. Roots in Arabic express some semantic notion, and typically have three consonants, known as "radicals." Thus KWN is the root for the copula, and KTB for "write." Affixes, often vocalic, occur in various inflections of the root:

<table>
<thead>
<tr>
<th>Verb form</th>
<th>yiiktib</th>
<th>&quot;write&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb form</td>
<td>katab</td>
<td>&quot;wrote&quot;</td>
</tr>
<tr>
<td>Noun</td>
<td>kitaab</td>
<td>&quot;book&quot;</td>
</tr>
<tr>
<td>Noun</td>
<td>kutub</td>
<td>&quot;books&quot;</td>
</tr>
<tr>
<td>Noun</td>
<td>maktab</td>
<td>&quot;desk&quot;</td>
</tr>
<tr>
<td>Participle</td>
<td>kaatib</td>
<td>&quot;writing&quot;</td>
</tr>
<tr>
<td>Participle</td>
<td>maktuub</td>
<td>&quot;written&quot;</td>
</tr>
</tbody>
</table>

I will refer to roots by their radicals.
(1) shows the verb KTB "write" in the bi-IMPERFECT, which marks imperfect aspect; (2) has KTB in the PERFECT, which marks perfective aspect; and (3) has KTB in the Ha-IMPERFECT, which marks prospective aspect. Egyptian Arabic has a single auxiliary verb, which may be translated "be" or "have" according to aspect and voice distinctions marked elsewhere in the sentence; KWN is never used to mark voice, only tense.

2.2.1. The Syntax and Semantics of the Verb KWN

KWN is a regular member of the morphological class verb; that is, KWN like KTB ("write") in (1) through (3) is inflected for person, number, and gender (in the second and third person singular). Compare the following to (1) through (3):

(4) kaanit bitiktibu
    Hatkuun writing-it

(5) kaanit katabitu
    Hatkuun written-it

She is writing it.  She wrote-it/has written it.

2. See Comrie (1976) for a discussion of these varieties of aspect. Comrie presents an analysis of Modern Standard Arabic in which verbs are said to mark both tense and aspect. My claim is that some sentences in Egyptian Arabic mark both tense and aspect, but tense is marked in AUX and aspect is marked in the PREDICATE. Some sentences with non-verbal predicates do not mark aspect, and some clauses mark aspect without tense, as I will show in Chapter 3. McCarus (1976) points out that the copula does not participate in the aspectual system shown by other verbs in Modern Standard Arabic.
Though KWN is a regular member of the morphological class *verb*, it differs semantically and syntactically from all other verbs in the language. KWN alone of all the members of its morphological class occurs with all predicates in the language to mark tense contrasts. By *predicate* is meant here all those verbs, participles, predicate nouns, predicate adjectives, prepositional phrases, etc. that serve to mark the predicational function of the sentence; later in this chapter a more precise definition of *predicate* will be given. Examples of KWN with non-verbal predicates will now be given.

The inflections of KTB that appear in (1) through (6), marking aspectual contrasts, are morphologically distinct from other forms traditionally labeled the Active and Passive Participles in Arabic. These participles mark number and gender but they do not mark person; in these respects they resemble nouns and adjectives. Participles mark aspect, as verbs do, but they also mark voice, which verbs do not.

(7) huwwa \[
\begin{array}{c}
\text{kuuun} \\
\text{kuuun} \\
\text{kuuun}
\end{array}
\] kaatib ir-risaala

\[
\begin{array}{c}
\text{kuuun} \\
\text{kuuun} \\
\text{kuuun}
\end{array}
\] ACT PAR ms

\[
\begin{array}{c}
\text{kuuun} \\
\text{kuuun} \\
\text{kuuun}
\end{array}
\] written the-thesis

He has (had, will have) written the thesis.
The thesis has (had, will have) been written.

A predicate adjective appears in (9); a predicate noun in (10).

(9) huwwa
    kaan
    Haykuun

(10) huwwa
    kaan
    Haykuun

He is (was, will be) angry. He is (was, will be) a doctor.

There is also a class of prepositions that function as predicates in existential and possessive sentences, sentence types which across languages tend to be exceptional in syntactic structure:

(11) fiih kitaab 9al-maktab
    kaan
    Haykuun

There is (was, will be) a book on the desk.

(12) 9andi kutub kitira
    kunt
    Hakuun

I have (had, will have) a lot of books.
The copula also marks tense contrasts with certain nouns of volition that function as predicates in volitional sentences:

\[(13) \begin{array}{c}
\text{kunt} \\
\text{is} \\
\text{was}
\end{array} \] biddi tifaHa

I want (wanted) an apple.

(Sentences with the future tense and a noun of volition are considered semantically anomalous.) The pronominal suffixes that mark person subject in (11) through (13) mark possession elsewhere, and will be described in Chapter 3, where the class of prepositional predicates and nouns of volition will also be identified, along with other types of non-verbal predicates that occur with KWN.

In the preceding examples, I have shown that KWN appears with all predicate types in the language to mark tense contrasts, and that tense is never marked elsewhere in these sentences. Many languages that mark tense have some sentence or clause types that do not mark tense, and are therefore non-finite. Across languages, imperatives, some embedded clause types, and subjunctive/jussive sentences are non-finite. Therefore, if KWN marks tense, then the pattern shown above with KWN should be excluded in these clause types. This is the case. In Egyptian Arabic, imperatives, subjunctives, and some embedded clause types lack the finite inflections of KWN shown in the examples given above.

There are two non-finite verb paradigms in Egyptian Arabic: the imperative and the subjunctive (traditionally called the "Imperfect without Prefix"; for a discussion of the subjunctive character of the
Imperfect, see Abdel-Massih et al., 1979, p. 175). In the imperative inflection, person, number and gender are marked, but aspect is not:

(14)  

<table>
<thead>
<tr>
<th>Case</th>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMP ms</td>
<td>a. iktib!</td>
<td>Write!</td>
</tr>
<tr>
<td>IMP fs</td>
<td>b. iktibi!</td>
<td>Write!</td>
</tr>
<tr>
<td>IMP pl</td>
<td>c. iktibu!</td>
<td>Write!</td>
</tr>
</tbody>
</table>

Since imperatives are not tensed, there are no finite inflections of KWN occurring in imperatives. But there is an imperative inflection of KWN itself:

(15)  

<table>
<thead>
<tr>
<th>Case</th>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMP ms</td>
<td>kuun mu'addab!</td>
<td>Be polite!</td>
</tr>
<tr>
<td>IMP fs</td>
<td>kuuni mu'addaba!</td>
<td>Be polite!</td>
</tr>
<tr>
<td>IMP pl</td>
<td>kuunu mu'addabiin!</td>
<td>Be polite!</td>
</tr>
</tbody>
</table>

The imperative of KWN is somewhat elevated in style and not often used. Non-finite kuun is comparable to non-finite be! in English, and is distinct from the finite inflections of KWN used to mark tense in indicative sentences. Therefore, the occurrence of the verb KWN in an imperative inflection is not a counterexample to the claim advanced here as to the role of KWN in marking tense elsewhere.

There are a number of non-finite clause types in EA that employ a verb inflected in the subjunctive IMPF without (bi- or Ha-) prefix. In these non-finite clauses, we do not find the pattern of KWN marking tense outlined above. These uses of the IMPF include embedded clauses. Arabic, like Indo-European, has both finite and non-finite embedded clauses. The complements of verbs such as 9RF, "know," are finite:

(16)  

<table>
<thead>
<tr>
<th>Case</th>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT PAR</td>
<td>ana 9aarif innu raayiH maṣr</td>
<td>I knowing that-he going Egypt</td>
</tr>
</tbody>
</table>

I know that he is going to Egypt.
In (16), both the matrix and embedded clauses are finite. Therefore, other tense marking may occur:

(17) ana kunt 9aarif innu kaan raayiH ma$ar
    I PAST knowing that-he PAST going Egypt
    ACT PAR COMP-PRO ACT PAR

    I knew that he was going to Egypt.

In contrast, the complements of other verbs, such as 9WZ, "want," are non-finite:

(18) ana 9aawiz innu yiruuH
    I wanting that-he go
    ACT PAR COMP-PRO IMPF

    I want him to go.

In (18), the embedded verb yiruuH is in the non-finite IMPF, and no tense-marking with KWN may appear in the embedded clause:

(19) *ana 9aawiz innu kaan yiruuH
    I wanting that-he PAST go
    ACT PAR IMPF

Other examples of non-finite embedded clauses:

(20) a. kaan ridi yiruuH
    PAST he-consented he-go
    PERF 3ms IMPF 3ms

    He had consented to go.

b. Haykuun 9aleek tiruuH
    FUTURE on-you you-go
    IMPF 2ms

    You will have to go.

c. kaanu nawyiin yiruuHu li-s-su'u
    PAST intending they-go to-the-market
    ACT PART pl IMPF 3 pl

    They were intending to go to the market.

There is a subjunctive, non-finite inflection of the verb KWN, just as there is an imperative inflection:

(21) ana 9aawiz innu yikuun hina
    I wanting that-he be here
    ACT PAR COMP-PRO IMPF

    I want him to be here.
This second non-finite inflection of KWN is also distinct from the finite inflections of KWN that mark tense in finite clauses, as shown above.

There are hortative sentences that employ the IMPF:

\[(22)\]  
\begin{align*}
(22) & a. \text{yalla nruuH!} & b. \text{yiruuH fi daHya!} \\
& \text{O-god we-go} & \text{he-go in hell} \\
& \text{VOC IMPF 1 pl} & \text{IMPF 3ms} \\
& \text{Let's go!} & \text{Let him go to hell!}
\end{align*}

And modal constructions:

\[(23)\]  
\begin{align*}
(23) & a. \text{a'ud hina?} & b. \text{kaan laazim (inni) aruuH} \\
& \text{I-sit here} & \text{PAST necessary(that-I) I-go} \\
& \text{IMPF 1s} & \text{ACT PART ms (COMP-PRO) IMPF 1s} \\
& \text{Am I to sit here?} & \text{I was obliged to go.} \\
& & \text{c. ir-raagil yikuun 9aa'il} \\
& \text{the-man by prudent} & \text{IMPF 3ms} \\
& & \text{A man is (expected) to be prudent.}
\end{align*}

Example (23c) shows the subjunctive of KWN. The IMPF may also occur as a jussive that is imperative in force:

\[(24)\]  
\begin{align*}
(24) & a. \text{inta tiktib ig-gawaab dilwa'ti'} & b. (ma-)tiktibu! \\
& \text{you you-write the-letter now} & \text{(COMP)-you-write-it} \\
& \text{You are to write the letter now!} & \text{You write it!}
\end{align*}

The negative particles are excluded from sentences with the imperative inflection, and negative commands employ the subjunctive.

("Irregularity" in negative imperatives is a recurring feature across languages; see Jelinek, 1979.)

\[(25)\]  
\begin{align*}
(25) & \text{matiktibuus!} \\
& \text{NEG-you-write-it} \\
& \text{IMPF 2ms PRO} \\
& \text{Don't write it!}
\end{align*}
Tense-marking with finite inflections of KWN is excluded here, as in other non-finite clause types. The fact that these non-finite sentence types lack the paradigm with KWN is consistent with the hypothesis that KWN marks tense.

The preceding examples show that KWN alone occurs with all predicates in the language to mark tense contrasts, and that while KWN is morphologically a verb, it exhibits syntactic and semantic properties that are peculiar to it.

2.2.2. The Analysis of Sentences with KWN

In the preceding discussion, an analysis of Egyptian Arabic which requires that every sentence contain a predicate was assumed. The sentences in (1) through (13) above suggest that the predicate may be preceded by either an inflection of KWN, a subject, or both or neither. That is, the sentences in (1) through (13) above appear to be of four types, listed in (26):

(26) a. Predicate

b. KWN Predicate

c. Subject Predicate

d. Subject KWN Predicate

The schemas in (26) represent all the main clauses in (1) through (13) above. In the sentences represented in (26), the predicate is final; the inflection of KWN is either initial or second; and the subject is initial. But there is an additional sentence type not included above.

(27) kaanu il-awlaad naymiin
AUX 3pl the-children sleeping
PAST NP ACT PART pl

The children were sleeping.
In (27) and (28) an inflection of KWN precedes the subject. Therefore, the following schema may be added to those given in (26):

(29) KWN Subject Predicate

The existence of sentences of the type shown in (27) and (28), and schematized in (29), is support for what was simply assumed in the list of sentence types shown in (26)—that is, that finite Egyptian Arabic sentences have three major constituents—Subject, KWN, and Predicate.

A crucial question in defining the constituency of AUX in Egyptian Arabic is how to analyze those sentences in the above examples that have a present tense interpretation and have no inflection of KWN.

At least three positions on this question seem possible:

(30) a. Present tense sentences in Egyptian Arabic have at most two primary nodes: Subject and Predicate.

b. All finite Egyptian Arabic sentences have a node where tense is marked; in the present tense, this tense-marking is phonologically null, a zero inflection of KWN.

c. All finite Egyptian Arabic sentences have a node where tense is marked; in some present tense sentences, this node is empty.

Note that we do not need to be concerned here with non-finite sentences that lack some inflection of KWN, since non-finite sentences have an imperative or subjunctive verbal inflection that distinguishes them from present tense sentences with no inflection of KWN.

Arguments against the first position, (30a), are as follows:

Some finite sentences have no inflection of KWN, but have certain other
elements in the position where an inflection of KWN appears in non-present tense sentences. These elements are the particles marking sentential negation and pronouns that mark person subject. The fact that these elements are sensitive to the position where an inflection of KWN occurs in non-present tense sentences is evidence against (30a) and in support of the claim that there is a node in present tense sentences corresponding to the position where KWN occurs in non-present tense sentences.

In order to develop this argument, it will be necessary to define an important difference among predicate types in Egyptian Arabic. This contrast is between predicates that mark person subject and those which do not. The class of predicates that mark person subject includes the verbal paradigms exemplified in (1) through (3) above: the bi-Imperfect, the Perfect, and the Ha-Imperfect. But not only verbs mark person subject; the prepositional predicates and nouns of volition predicates shown in (11) through (13) also mark person subject. The class of predicates that do not mark person subject includes participles, nouns, and adjectives, as shown in (7) through (10) above. These predicate classes will be given fuller treatment in the next chapter; my purpose here is just to show how these different predicate types relate to the other constituents of Egyptian Arabic sentences. Using the notion of predicate type, (19) above may be revised as follows:
With the expanded list of sentence types given in (31), it can be demonstrated that (30a) above, the position that present tense sentences have only Subject and Predicate nodes, is incorrect. The negative particle in sentences with no inflection of KWN [represented by (31a) and (31c-2)] occurs in just the position that an inflection of KWN occupies in (31b-1) and (31d-1).

(32) miš biyiktib
    NEG Predicate
    + person subject

He isn't writing.

(33) huwwa miš biyiktib
    Subject NEG Predicate
    he       + person subject

He isn't writing.

In non-present tense sentences, the NEG particle (miš or muš) appears as discontinuous elements (ma ... ŭ) that attach to the verb KWN:
He wasn't writing.

He wasn't writing.

He won't be writing.

He won't be writing.

(Some Egyptians say maHaykun; most educated Cairenes prefer miš Haykuun, where unattached NEG precedes the future tense inflection of KWN:

He won't be writing.

He won't be writing.

The point here is the tendency of the NEG particle to become attached to any inflection of KWN.) These examples show that the NEG particle and KWN share the same sentential locus in non-present tense sentences, and that in present tense sentences, where there is no inflection of KWN, sentential NEG may occupy that locus alone.
There is a second class of elements that may occupy this locus in non-present tense sentences. These elements are pronouns that mark person subject, called the "pronoun of separation" in traditional Arabic grammar. In copular sentences with a definite predicate noun, the "pronoun of separation" is required between subject and predicate:

(40) axuuya huwwa it-ṭabiib  
    my-brother he the-doctor  
    Subject Predicate  
    - person subject  

My brother is the doctor.

(41) axuuya kaan it-ṭabiib  
    my-brother was the-doctor  
    Subject KWN Predicate  
    - person subject  

My brother was the doctor.

(42) axuuya Haykuun it-ṭabiib  
    my-brother will-be the-doctor  
    Subject KWN Predicate  
    - person subject  

My brother was the doctor.

The pronouns may appear with the NEG particles attached:

(43) axuuya ma-huwwa-aš it-ṭabiib  
    my-brother NEG-he-NEG the-doctor  
    Subject Predicate  
    - person subject  

My brother isn't the doctor.

These constructions are known as "negative pronouns" and may follow subject pronouns:

(44) huwwa ma-huwwa-aš it-ṭabiib  
    he NEG-he-NEG the-doctor  
    Subject Predicate  
    - person subject  

He isn't the doctor.
These "negative pronouns" are limited to and optional in all present tense sentences where person subject is not marked in the predicate. This peculiarity in the distribution of these "negative pronouns" has previously been ignored in the literature on Egyptian Arabic. These constructions parallel sentences with the negative particles attached to KWN, as follows:

(45) (huwwa) \(\{\) ma-huwwa-a\(\ddash\) za\(9\)laan
\(\{\) ma-kan-\(\ddash\)
\(\{\) ma-Haykun-\(\ddash\) (or mi\(\ddash\) Haykuun) \(\}\) - person subject

he \(\{\) isn't \(\}\) angry
\(\{\) wasn't \(\}\) won't-be

He isn't (wasn't, won't be) angry.

Sentences (40) through (45) have either a predicate noun or a predicate adjective, predicates that do not mark person subject. My purpose here has been to show that in finite sentences without an inflection of KWN, that is, in present tense sentences, there is a sentential locus or node where sentential negation, the "pronoun of separation" and the "negative pronouns" occur. Therefore, we may collapse certain of the schemas given in (31) above. If we represent this sentential node with an underlined space, then we may collapse (31a) with (31b-1), and (31c-1) with (31d-1), as follows:

(46) a. _____ Predicate + person subject (31a) and (31b-1)
b. Subject _____ Predicate + person subject (31c-1) and (31d-1)
c. Subject _____ Predicate - person subject (31d-2)
Discussion of schema (3lb-2) will be deferred until we take up the topic of subjects in further detail.

Imperative sentences provide evidence for a final argument against viewing present tense sentences as having at most subject and predicate nodes. An example was given above (14) of an imperative sentence without a subject. But imperatives with subjects do occur:

(47) inta iktib ig-gawaab!

you write the-letter

Subject Predicate

You write the letter!

That is, if present tense sentences lack some node which marks tense, then they correspond in structure to imperatives in having only subject and predicate nodes. Thus if we choose to ignore the evidence presented by the negative particles, the "pronoun of separation" and the "negative pronouns" in present tense sentences, and treat present tense sentences as containing only subject and predicate, we would fail to capture an important generalization about finite sentences as opposed to imperative sentences in Egyptian Arabic. Recall that the negative particle is excluded from sentences with an imperative inflection, just as the finite inflections of KWN are excluded in imperative sentences.

Arguments will now be given against (30b), the position that there is a zero or phonologically null inflection of the verb KWN in present tense sentences. In order to argue against this position, we must define the conditions on the appearance of subjects in Egyptian Arabic.
A distinction between predicate types was made above with respect to whether or not they mark person subject. Not only predicates mark person subject; the inflections of KWN and pronouns mark person subject, as we have seen in the foregoing sections. The conditions on the appearance of independent subjects may be stated as follows: an independent subject is required in any sentence where person subject is not marked by some bound pronominal affix. Any sentence which contains a predicate that marks person subject, or an inflection of KWN, or a "negative pronoun" does not require an independent subject. Therefore, sentences of type (3lb-2), not accounted for as yet, may be collapsed with sentences of type (3lb-1). All the sentence types in (31) have now been reduced to those given in (46) with the exception of existential sentences, as shown in (11). In existential sentences, no subject may precede the locative prepositional predicate; these sentences are *sui generis* in syntactic structure, as often the case across languages.

The first argument against a phonologically null inflection of KWN in present tense sentences is provided by the distribution of subjects. A postulated zero inflection of KWN would not mark person subject, and would therefore differ from all other inflections of KWN. If the postulated zero inflection were marked for person subject, it would allow subjects to be optional, and the generalization on the occurrence of subjects given above states that when KWN is absent, it is the predicate type (or "negative pronoun") that determines whether or not a subject is required. Therefore, a zero inflection of KWN
would be absolutely idiosyncratic as compared to every other inflection of KWN.

When an inflection of KWN is present, the optional subject may either precede it or follow it, as shown in examples (35) and (37) compared to (27) and (28) above. If there were a phonologically null inflection of KWN in present tense sentences, one might expect the negative particles, occupying the same position, to have the same privileges of occurrence. But this is not the case. In negative present tense sentences with a subject, the negative miš must follow the subject (unless a "negative pronoun" is employed). Thus, while (48a) and (48b) are considered equivalent, (48c) is not an acceptable variant:

(48) a. huwwa miš za9laan
    he   NEG angry

    He's not angry.

b. ma-huwwa-aš za9laan
    NEG-he-NEG angry

    He's not angry.

c. miš huwwa za9laan (bass...)
    NEG he   angry (just...)

    It's not (just) that he's angry ...

Arguments have been given against the position that present tense sentences have a node where tense is marked, and against the position that there is a phonologically null inflection of KWN in present tense sentences. There remains the third position stated in (30) above, that is, that present tense sentences, like all finite sentences, have a node where tense, sentential negation, and person subject is marked, but that in some present tense sentences, this node may be empty. If (30) covers all the possibilities, there is negative
evidence in support of the last position, but there is positive evidence also, as follows: in some present tense sentences with a predicate that marks person subject, the particle marking sentential negation may attach directly to the predicate.

\[(49) \quad \text{a. ma-biyiktib-}{}^\text{-} \ig-gawaab} \\
\quad \text{NEG-writing-NEG the-letter} \\
\quad \text{bi-IMPF 3ms} \\
\quad \text{He isn't writing the letter.} \\
\text{b. ma-katab-}{}^\text{-} \ig-gawaab} \\
\quad \text{NEG-written-NEG the-letter} \\
\quad \text{PERF 3ms} \\
\quad \text{He didn't write the letter.} \]

The attachment of the negative particles to the predicate seen in these examples is consistent with the view that there is an empty node in these sentences rather than a zero inflection of KWN to which the negative particle would be drawn.\(^3\)

As we have seen, finite sentences without KWN in some ways resemble sentences with a finite inflection of KWN; that is, they lack a verb in either the imperative or subjunctive inflection. And some sentences without KWN differ from sentences with KWN in the position of the negative particle; this particle always follows any independent subject if no inflection of KWN appears. Sentences with finite KWN and sentences with the "negative pronouns" fall together on the optionality

\[\text{3. The phenomena of NEG attachment seen here are reminiscent of what has been termed "affix hopping" in English. When there is no auxiliary verb or modal present in an English sentence, tense appears on just those predicates that mark person subject (i.e., verbs). When there is no auxiliary verb present in an Egyptian Arabic sentence, NEG may attach to just those predicates that mark person subject (a class including verbal predicates). These parallels will be discussed further in Chapter 7.}\]
of an independent subject, but not on the position of this subject, nor on predicate type. This partial similarity between present and non-present tense sentences seems consistent with the view that present tense sentences have a node, a particular space, where tense is marked, and sentential negation and person subject may be marked, and yet this space does not constitute a phonologically null inflection of KWN, since it does not correspond to all the positions in non-present tense sentences where the various inflections of KWN occur; nor does it always mark person subject. And in some negative present tense sentences, as shown in (49), this node may also be empty.

The generalizations stated above on the primary constituents of finite sentences in Egyptian Arabic may be schematized as follows:

(50)  a. (Subject) \{ 
\begin{align*} 
\emptyset & \quad \text{Predicate} \\
\text{KWN} & \quad \text{+ person subject} \\
\text{NEG+KWN} & \\
\text{NEG} & \\
\end{align*} \\
\} \\
\} \\
\} \\
b. (Subject) \{ 
\begin{align*} 
\text{NEG+KWN} & \quad \text{Predicate} \\
\text{NEG} & \quad \text{+ person subject} \\
\text{NEG PRO} & \\
\end{align*} \\
\} \\
\} \\
c. Subject \{ 
\begin{align*} 
\emptyset & \quad \text{Predicate} \\
\text{NEG} & \quad \text{- person subject} \\
\text{PRO*} & \\
\end{align*} \\
\} \\
\} \\
\} \\

In (50c) PRO* refers to the "pronoun of separation" that is required in present tense sentences with a definite predicate noun. In all the schemata in (50), \emptyset represents the empty node in present tense sentences argued for above. It was noted earlier that in sentences with both a subject and some inflection of KWN, that KWN may either precede or follow the subject. Therefore, some sentences subsumed under (50a) and (50b) will show a different order.
2.2.3 Conclusions on AUX in Egyptian Arabic

Arguments have been presented here in support of the view that finite sentences in Egyptian Arabic have a constituent, independent of the predicate of the sentence, where tense is marked. The fixed inventory of this constituent has been specified as follows: the finite inflections of the copular verb KWN, the particles marking sentential negation, and pronouns marking person subject. This constituent therefore qualifies as an instantiation of the category AUX, according to the definition given in the opening section of this chapter. Tense marking and a small fixed inventory are definitional features of the category AUX, as defined by Steele, while particles marking sentential negation and person subject are non-definitional properties of AUX across languages (see Steele et al., in press).

In presenting language internal arguments for a syntactic category AUX, I have identified also two other constituents of Egyptian Arabic sentences: Subject and Predicate. In the remaining sections of this chapter, I will propose an alternative definition of AUX, and language independent definitions of the other syntactic categories of the language, in terms of the functional structure of sentences. I will argue that this coherent set of language independent definitions of syntactic categories provides for a more economical way of defining AUX than that selected by Steele. I will begin by explaining what I mean by functional structure, and how functional structure relates to the distinction between morphological classes and syntactic categories.
2.3. The Functional Structure of Sentences

By functional structure I mean what is sometimes called the logical form of a sentence: its function/argument structure. It is axiomatic for predicate logic that the sentences of all languages have a functional structure. If we know the meaning of a sentence, we are able to recognize that some parts of it mark functions and other parts mark the arguments of those functions. In a simple transitive sentence such as

(51) John gave Mary a book. \( F (a,b,c) \)

we recognize *gave* as marking a function with three arguments. There is no single or absolute notation of functional structure; the notation is selected to meet the analytical task at hand. For some purposes, all the following sentences may be assigned the same functional structure:

(52) John gave a book to Mary. \( F (a,b,c) \)
(53) A book was given to Mary by John.
(54) Mary was given a book by John.
(55) Who John gave the book to was Mary.
(56) What John gave Mary was a book.
(57) A book was what John gave Mary.
(58) Mary was who John gave a book to.
(59) What John did was (to) give Mary a book.
(60) John's gift to Mary was a book.

These sentences do not mean quite the same, and their differences in meaning are related to their differences in syntactic structure. All the sentences describe the same happening, and for certain purposes
may be considered paraphrases of one another; they have the same truth conditions. Their differences in syntactic structure serve to bring one or another aspect of the event described into focus. In (51, 52), the agent is in focus; in (53-58) the patient or recipient is in focus; and in (59, 60) the act of giving is given prominence. We can capture some of these meaning differences in a notation of functional structure that would formalize the following rough schematizations:

\[(53') (F_{\text{was given to Mary by John}}) (a \text{ book})\]

\[(54') (F_{\text{was given a book by John}}) (a \text{ Mary})\]

\[(55') \text{ Ex (John gave a book to } x \text{ & } x \text{ is Mary)}\]

\[(56') \text{ Ex (John gave } x \text{ to Mary & } x \text{ is a book)}\]

\[(57') \text{ Ex (} x \text{ is a book & John gave Mary } x\text{)}\]

\[(58') \text{ Ex (} x \text{ is Mary & John gave a book to } x\text{)}\]

\[(59') ((F_1 \text{ (John)}) \ast (F_2 \text{ (John, Mary, a book)}) \& (F_1 \text{ is } F_2))\]

\[(60') (F_{\text{book}}) (a \text{ John's gift to Mary})\]

Note that all these sentences are intransitive. A simple transitive sentence is transitive in functional structure and in syntactic structure. The function-marking elements of syntactic structure are here termed predicators, to distinguish them from the predicates of predicate logic. Syntactic structures are sentences, and functional structures are formulae. Simple transitive sentences have a transitive predicator; I will call them unmarked syntactic structures. In unmarked transitive sentences, the agent argument of a transitive predicator is marked in the subject of the sentence. If any other element is made

4. (55-58) have bound variables, and (59) has a similar anaphoric link between did and gave.
subject of the sentence, the sentence becomes intransitive. Intransitive sentences that have the same truth conditions as a simple transitive sentence (as in 53-60) can be said to be marked or derived sentences.

Similarly, an unmarked intransitive sentence has the agent or theme argument of the predicator as subject.

(61) John swims. \( F(a) \)
(62) John swims at the Y. \( L(F))(a) \)
(63) At the Y is where John swims.

Ex (John swims at x)

When the subject of an intransitive sentence does not correspond to the single non-oblique agent or theme argument of an intransitive predicate in the corresponding formula, as in (63), we may call this sentence also a marked or derived syntactic structure. My purpose here is to show that for non-ergative languages, the agent argument of a sentence with a transitive predicator, and the single (theme) argument of a sentence with an intransitive predicator is marked in the subject of the sentence, in sentences with unmarked syntactic structure.

The predicational function of a formula is marked in the predicator of the sentence. In simple transitive sentences, the predicator is transitive. All other sentences have intransitive predicators.

5. \( L \) in this formula refers to the locative adverbial prepositional phrase at the Y, which takes the predicational function of the sentence under its scope.
2.4. AUX and Sentence Mood

Some languages have one-word sentences, consisting of an inflected verb form which marks the predicational function and also the subject (and sometimes the object) of the sentence by bound pronominal affixes. There seems to be a link between verbs and sentences across languages, such that a verb is the root or nuclear constituent of a sentence. In both linguistics and the philosophy of language, a simple sentence is often taken to consist of some verb and its argument(s). But this notion of the structure of a simple sentence in a natural language is incomplete, since a verb and its arguments alone do not constitute a sentence. The sentences of a natural language have a property that is not shared by the sentences of an artificial language such as the predicate calculus: sentences in a natural language carry sentence mood. Kahn (1973, p. 187n) describes the role of the indicative or declarative mood as follows:

Compare a sentence with a map or drawing. The map or drawing may be said to have truth conditions; it shows how things stand if it is a faithful representation. But it does not claim to be faithful; there is nothing in the picture that corresponds to the indicative mood. A declarative sentence, on the other hand, not only describes a possible state of affairs but says that it is realized.

Kahn also cites Wittgenstein's more cryptic formulation of the same point:

A proposition shows how things stand if it is true. And it says that they do so stand. (Tractatus 4.022)

It is the speaker who makes a claim; by employing a declarative sentence, he executes a given speech act, that of asserting or claiming. But there are certain dependencies between the mood of a sentence and the
kind of speech act which may be executed by uttering that sentence: declarative sentences are linked to the execution of assertions; interrogative sentences to the execution of questions; and imperative sentences to the execution of commands and requests. By using a declarative sentence, a speaker both states something and claims that what he states is true. This self-referring feature of declarative sentences lies at the root of paradoxes such as

(64) This sentence is false.

and other versions of the Cretan paradox. We may record sentence mood in a notation of the function/argument structure of sentences as follows:

(65) He cited Wittgenstein. \( \uparrow (T (F (a,b))) \)
(66) Did he cite Wittgenstein? \(? (T (F (a,b))) \)
(67) [you] cite Wittgenstein! \( \downarrow (F (a,b)) \)

Here \( F_{(a,b)} \) shows the functional structure that these sentences have in common, and tense is recorded in (65, 66) by \((T)\). Sentence mood is recorded by the initial function markers \((\uparrow), (\downarrow), \) and \((?)\).

Languages differentiate among sentence moods by a combination of grammatical devices: morphological (verbal inflections), syntactic and prosodic structures. Languages often mark the indicative mood (in part) via tense. That is, if a language marks tense, at least declarative sentences in that language will be tensed, while interrogative sentences may or may not be.

In the functional structure of a simple sentence (as in (65) above), sentence mood corresponds to a function which embeds the predicational function of a sentence and its arguments. Mood and tense
are generally termed sentential functions, in that they take the
predicational function of a sentence and its arguments under their
scope. In syntactic structure, tense, mood, and other functions marked
in AUX are features of the simple clause; there are no clause boundary
phenomena such as COMP. Across languages, AUX frequently changes
in constituency or locus or both with S mood, and thus serves to mark
S mood. SUBJECT/AUX inversion is a well-known feature of the
interrogative mood in English. Hale (1973) pointed out that sentences
in the imperative mood in Walbiri have an AUX that is different from
the AUX of indicative sentences. Akmajian et al. (1979) show how AUX
in English and Luiseno changes across S mood, and in succeeding
chapters I will show how AUX varies across sentence mood in Egyptian
Arabic.

Steele (in Steele et al., in press) has provided a definition
of the syntactic category AUX in universal grammar as a distinct
category which marks tense and/or modality, and has a small closed
inventory. We need to list the inventory of a category in order to
show that it is small and fixed. Listing the members of a set is not
the most economical means of defining that set. My proposal is that we
can define AUX more economically, and avoid depending upon listing the
inventory of the category, by making reference to the functional
structure of sentences, as shown in the following section.
2.5. Language Independent Definitions of Syntactic Categories

Syntactic categories are defined in terms of the functional structure of sentences, as follows:\(^6\)

(68) \textsc{Pred}: A sentential constituent where at least some transitive functions are marked.

(69) \textsc{Aux}: A sentential constituent where intransitive only functions are marked, that embed a function marked in \textsc{Pred} and its arguments.

(70) \textsc{Subj}: A sentential constituent where the single argument of an intransitive function marked in \textsc{Pred} is marked, and where the agent argument of a transitive function marked in \textsc{Pred} is marked.

(71) \textsc{Adv}: A sentential constituent where only intransitive functions are marked, that embed a function marked in \textsc{Pred}, or embed a function marked in \textsc{Pred} and its arguments.

These definitions, like the definition of \textsc{Aux} proposed by Steele (in Steele et al., in press), depend upon both syntactic and semantic criteria. The notion of syntactic constituent is presupposed here, as in Steele's definition; and the crucial semantic notion required is transitivity. In defining syntactic categories, the term constituent is taken as designating nodes dominated by \textit{S}; the rules of the language particular grammar refer to sentence partials, and determine the sentential constituents for a language. The notion of transitivity relates to functional structure, and refers to functions with two non-oblique arguments (agent and patient). Formulating semantic criteria for use in defining syntactic categories across languages has proven to be a notoriously difficult problem; but in basing our definitions

\(^6\) There is no convenient term in logic for the linguistic term \textit{embed}; operators are said to take certain material under their scope. The parentheses that occur in logical formulae are defined as logical constants (see Mates, 1972, p. 45).
on functional structure, we make use of one kind of information on the semantic structure of sentences where there is a generally agreed upon body of results. Once PREDICATE is defined as a sentential constituent where at least some transitive functions are marked, the other categories can be defined off the notion of transitivity.

2.6. Transitivity

Transitivity is a central notion in syntactic structure. In Section 2.3, I pointed out that various kinds of derived sentences, including passive and cleft sentences, are intransitive sentences that may correspond in functional structure to simple transitive sentences. Transitivity thus participates in the definition of derived structure. Similarly, clauses may be defined with reference to transitivity and functional structure: a clause may have no more than one transitive function. Not all clauses have transitive functions, but a clause is a domain where one transitive function may occur. In a complex sentence, there may be more than one transitive function, corresponding to the number of clauses:

(72) I don't want John to play the piano.

(73) John likes to play the piano and sing "Old Man River."

Intransitive functions are marked by adjectives, prepositions, adverbs, etc.; there may be many intransitive functions per clause. The predicational function of a sentence is marked in the syntactic category PREDICATE, and at least some of these predicational functions are transitive. In main clauses, the agent argument of a transitive
predicational function and the single non-oblique argument of an
intransitive function are marked in the syntactic category SUBJECT.

Transitivity is crucial in differentiating AUX from PREDICATE.
In AUX, various sentence operators such as tense, modality, aspect, and
sentential polarity may be marked; these sentence operators are
distinct from predicational functions in that they are all intransitive,
and in that they take the predicational function and its arguments
under their scope.

The fourth syntactic category, ADVERBIAL, is always optional:

(74) Possibly, John gave Mary a hard time.

Some functions that may be marked in ADV are modal, and are sentence
operators, like the functions marked in AUX. But some functions that
may be marked in ADV are not sentence operators, and embed only the
predicational function:

(75) Quickly, John gave Mary the news.

These non-modal functions, and some modal functions, may also be marked
in the PRED category. The ADV functions that are marked only in ADV
are sentence operators. Thus, while all the functions marked in ADV
are intransitive, at least some of these functions differ in scope
from the functions marked in AUX.

In some languages, those with AUX verbs, the analytic problem
is that of differentiating AUX from PREDICATE. In other languages,
particularly "isolating" languages with little morphological structure,
the problem may be that of distinguishing AUX from ADV sentence
particles. But if a language has a sentential constituent that marks
intransitive functions only, and these functions are all sentential in
scope, then we may label this constituent AUX. The definition proposed here for AUX thus selects the same class of elements across languages as does the definition proposed by Steele, and does so in more economical terms. It is also one of an integrated set of language independent category definitions. I conclude that it is a refinement of the definition proposed by Steele.

2.7. Morphological Classes and Syntactic Categories

The list of syntactic categories defined above differs markedly from the categories usually defined for English, where the phrase structure rule for an English sentence is given as NP AUX VP—or on an analysis that does not recognize a category AUX, simply NP VP. My claim is that NP and VP are not syntactic categories, but syntactic expansions of morphological classes.

Morphological classes are the traditional parts of speech. In many languages, these form classes may be defined as sets of forms showing certain inflectional affixes—the morphological apparatus of the language. Thus, in English, a noun may be defined as a class of items that take a plural inflection by means of one of a set of mutually exclusive affixes, typically -s. A verb is one of a class of items that occur in paradigmatic sets that mark person and number. Some "isolating" languages have little if any morphological apparatus; if a language has no morphological affixes, it has no morphological classes. Some languages have clitics, more or less loosely attached particles that determine morphological classes. The definite articles in English and Egyptian Arabic are examples of such clitics. Members of these
morphological classes also participate in larger strings that may be defined in the phrase structure rules of the language. Thus, for English:

(76) \( NP \rightarrow (\text{Det}) (\text{Quant}) (\text{ADJ}) \text{N} (\text{PP}) (S) \)

(77) \( VP \rightarrow V^n (\text{NP}) (\text{PP}) (\text{ADV}) \)

NP and VP are the proper constituents of syntactic categories, not of sentences. I propose that these syntactic expansions of morphological classes be labeled morphosyntactic categories.

Thus, NP, PRO, and S appear in the syntactic category SUBJECT. NP and PRO are grouped on the basis of functional structure, not on the basis of morphological class membership. Similarly, many morphosyntactic categories other than VP may mark predicational functions in PRED: NP, PP, ADJ P, PART P, LOC, ADV, etc. And, crucially, members of the morphological class verb may appear in either AUX or PRED. That is, some languages have AUX verbs. If we choose to count the sequence verb + NEG as VP, then VP may appear in AUX.

The rules of the grammar specify the inventory of a particular syntactic category in terms of the morphosyntactic categories that may appear there. In some cases, individual items must be listed. Across languages, we may generalize as follows, for languages that have AUX:

(78) The syntactic category AUX has the smallest inventory of any syntactic category in the language, while PRED has the largest inventory. No morphosyntactic category is excluded from marking predicational functions in PRED.

Just as we make reference to semantic features in matching syntactic categories across languages, we make reference to semantic features in matching morphological classes and morphosyntactic categories across
languages. Given a form class some members of which mark transitive functions, we are prompted to label this form class verb. Given a syntactic expansion of such a form class, we are prompted to label it VP. Given a sentential constituent where at least some transitive functions are marked, we label it PREDICATE. Given a sentential constituent where the only functions marked are intransitive sentence operators, we label it AUX.

Syntactic categories thus have two important properties; they are parts of sentences that play specified roles in the functional structure of sentences, and they are parts of sentences to which the rules of the grammar refer. These two properties of syntactic categories are independent of one another, and mark an interface between syntax and semantics. In defining syntactic categories, and in matching syntactic categories across languages, we make reference to both of these properties of syntactic categories. The syntactic rules tell us how to segment sentences; given these segmentations, we match

7. As we have seen, Egyptian Arabic has more than one morphological class whose members may mark transitive functions in PREDICATE. In such instances, we must choose which of these form classes we will label verb. I have followed traditional terminology in calling one of these form classes verb (those which mark aspect) and the second preposition (those that function as prepositions without pronominal suffixes). The third class of elements that mark transitive functions in PREDICATE, the nouns of volition, has not to my knowledge been previously recognized and named. In Chapter 3, the class of elements that may mark transitive functions in PREDICATE will be described in detail. It will be shown there that these elements share another feature: the particles marking sentential negation may attach to them. The morphological class verb differs distributionally from other transitive predicates in that verbs alone occur as the predicational function in imperative sentences.
syntactic categories across languages on the basis of correspondences in functional structure.

In sum, my proposal is that it is inaccurate to define PREDICATE in languages such as English and Egyptian Arabic as coincidental with verb, or to define SUBJECT as coincidental with noun. Given that these sentential constituents have larger inventories, it is uneconomical to define these categories by listing their inventories, when we may define them in simple terms by reference to the functional structure of sentences.

The terminology employed is not important; what is important here is the recognition that there is no one-to-one correspondence between morphological classes and syntactic categories. Across languages, AUX is a small, mixed bag as far as morphological class constituency is concerned. But for English and Egyptian Arabic at least, no syntactic categories and morphological classes coincide, though there is a clear association between verb and PREDICATE, and noun and SUBJECT (as well as the sub-category OBJECT). We could term the syntactic categories defined here functional categories, as long as we do not lose sight of the fact that they are pieces of sentences, not pieces of formulae, and that these categories are defined by the syntax of the language, in addition to playing specified roles in the functional structure of sentences.

Ross (1967), Pullum and Wilson (1977), and Gazdar, Pullum, and Sag (1980), among others, have argued that auxiliary elements in English and other languages are the initial verbs in verb sequences; within the simple clause in surface structure, but said to derive from
a series of embedding matrix clauses in underlying structure. On this view, AUX and VP constitute a single multi-layered sentential constituent. If verb or VP is not a syntactic category, the question of whether or not the elements marking sentence operators in AUX are verbs is of little interest, and certainly not relevant to the question of whether AUX and PREDICATE are independent sentential constituents to which the rules of the grammar make reference. Some members of the morphological class verb appear in AUX or PREDICATE in some languages, just as members of the morphological class noun may appear in either SUBJ or PREDICATE. There has been some dispute as to whether the English modals are verbs; there seems little point to this dispute, since nothing hangs on it. Whether they are verbs or particles, the AUX modals mark sentential functions in the functional structure of sentences, and morphological classes and syntactic categories do not coincide.

2.8. Testing These Definitions of Syntactic Categories

The set of categories SUBJECT, AUX, PREDICATE and ADVERBIAL defined here would obviously need modification to apply to some languages. SUBJECT would need to be defined differently for ergative languages, where the patients of transitive clauses and the single non-oblique arguments of intransitive clauses fall together as absolutes. And some languages appear to have an OBJECT category, not dominated by PREDICATE, where the patient arguments of transitive functions are marked. In English and Egyptian Arabic objects are a sub-constituent of PREDICATE. Further modifications may be required for particular
languages; this is an empirical question. But the universality of functional structure in language suggests that this approach to formulating language independent definitions of syntactic categories, and to relating categories across languages, will prove to be a useful one.

Steele (in Steele et al., in press) points out that the test of a proposed language-independent definition of a syntactic category lies in whether or not the class it selects across languages turns out to have linguistically interesting non-definitional properties. In the last chapter of this thesis, I will discuss certain non-definitional properties of the categories defined in this chapter, along with a comparison of the categories AUX and PREDICATE in English and Egyptian Arabic, and some observations on these categories in a small sample of other languages. Before undertaking these cross-language evaluations of the category definitions, I will provide more complete language internal evidence on the instantiation of each category in Egyptian Arabic. The inventory of each category will be specified, and I will describe the syntactic structure of the major clause and sentence types in some detail, in order to show how the syntactic categories of the language co-vary across sentence mood.
CHAPTER 3

THE SYNTACTIC STRUCTURE OF INDICATIVE SENTENCES

3.1. Introduction

In this chapter I will specify the inventories of the syntactic categories defined in Chapter 2: SUBJECT, AUX, PREDICATE, and ADVERBIAL. I will define the PREDICATE and AUX types in the language, and show how these types determine the conditions on the appearance of independent subjects and NEG attachment in the language. I will discuss the semantics of tense and aspect in Egyptian Arabic. Finally, I will show how AUX in interrogative sentences differs optionally from AUX in declarative sentences.

3.2. The Syntactic Structure of Indicative (IND) Sentences

All (complete) IND sentences in EA have at least the syntactic categories AUX and PREDICATE; some also have a syntactic category SUBJECT. A syntactic category ADVERBIAL is optional for both these sentence types. These four syntactic categories are the complete inventory of sentence-level constituents of simple independent IND sentences in EA. (Conjunctions, complementizers, etc., are constituents of complex sentences.) A sentence schema for IND sentences in EA is as follows:
PRED$_1$ refers to those predicator types that do not mark person subject by means of bound pronominal affixes: predicate nouns, predicate adjectives, participles, prepositional phrases, etc. PRED$_2$ refers to those predicator types that mark person subject: verbs, the prepositional predicitors used in existential and possessive sentences, and "nouns of volition," as identified in Chapter 2. AUX$_1$ refers to those AUX constituents that do not mark person subject: the unattached negative particle and zero (present tense). AUX$_2$ refers to those AUX constituents that do mark person subject: the inflections of KWN, the "pronoun of separation" and the "negative pronoun." Where person subject is not marked in either AUX or PRED, an independent SUBJECT is required. We cannot collapse AUX and PRED, as shown in Chapter 2, because their syntax and constituency is distinct. KWN and the pronouns appearing in AUX are not predicitors. Where SUBJ is optional, it may precede or follow AUX; where it is required, it is sentence initial. ADVERBIAL is always optional, and may appear at more than one locus in the sentence, according to ADV type. ADV clauses will be described in Chapter 5, which deals with subordination in EA. In EA, the order of required categories is fixed; that of optional categories may not be.
The following examples illustrate these syntactic structures:

(2) ir-raagil-da waziir

That man is a cabinet minister.

This sentence has a predicate noun, and AUX is zero, PRES tense.

Therefore no person-subject marking occurs in either AUX or PRED, and sentence-initial SUBJ is necessary to the referentiality of the sentence. Compare:

(3) ir-raagil da kaan waziir.

(That man) he was a cabinet minister.

Here person-subject is marked in AUX, via an inflection of the AUX verb KWN, and the SUBJ NP is optional, providing additional information.
on the subject of the sentence. (The dotted line in the tree marks the optional subject.)

The following sentences (4-6) have verbal predicates (PRED$_2$):

(4) \textit{il-walad kaan biybi\textit{i9} burtu'aan fi-s-suu'}

(The boy) he was selling oranges in the market.

The following word order is equally acceptable, or may be preferred:

(5) \textit{kaan il-walad biybi\textit{i9} burtu'aan fi-s-suu'}

(The boy) he was selling oranges in the market.

In (4, 5), SUBJ is optional, and the sentence is AUX initial with respect to required constituents. The fact that SUBJ may intervene
between AUX and PRED is evidence for the independence of these sentence constituents. Optional ADV may also intervene between AUX and PRED:

(6) axuuya kaan filwa't da biyisma9 ir-raduy

\[
\text{S} \\
\text{SUBJ} \\
\text{NP} \\
\text{axuuya} \\
\text{my-brother} \\
\text{AUX} \\
\text{V} \\
\text{kaan} \\
\text{PAST} \\
3ms \\
\text{ADV} \\
\text{PP} \\
\text{fil wa't da} \\
at-that-time \\
\text{biyisma9} \\
\text{listening} \\
\text{ir-raduy} \\
\text{the-radio} \\
\text{PRED} \\
\text{VP} \\
\text{V} \\
\text{NP} \\
\]

(My brother) he was (at that time) listening to (hearing) the radio.

This sentence has a verbal predicator. Person subject is also marked in AUX, via an inflection of the AUX verb KWN; therefore, the category SUBJ is optional, as it is in all non-present tense sentences.

(7) min ġeer ṣakk, faṣl ỉṣ-ṣeeff Harr

\[
\text{S} \\
\text{ADV} \\
\text{PP} \\
\text{min ġeer ṣakk} \\
\text{without doubt} \\
\text{SUBJ} \\
\text{NP} \\
\text{faṣl ỉṣ-ṣeeff} \\
\text{summer season} \\
\text{AUX} \\
\text{AUX} \\
\text{PRES} \\
\text{∅} \\
\text{Harr} \\
\text{hot} \\
\text{PRED} \\
\]

Without a doubt, the summer is hot.

Sentence (5) shows an adverbial prepositional phrase which is a subsentential constituent, a constituent of PRED. Sentences (6, 7)
show optional ADV in the syntactic category ADV, which is always optional. Some but not all the functions marked in ADV are modal. (The inventory of ADV will be described in Section 3.7.) Sentences (5, 6) show the object argument of a transitive function marked in \( \text{PRED}_2 \). The following example shows an oblique argument marked there:

(8) kaan biyibuu$ looking li-r-raagil

\[
\begin{array}{c}
\text{S} \\
/ \text{AUX} \text{PRED}_2 \text{VP} \\
/ \text{V} \\
/ \text{kaan PAST} \\
/ \text{biyibuu$ looking} \\
/ \text{li-r-raagil at-the-man}
\end{array}
\]

He was looking at the man.

An optional NP subject may appear before or after AUX here.

3.3. The Inventory of AUX

The constituency of the category AUX was specified in Chapter 2, where arguments were given for the independence of AUX. The paradigms of the verb KWN are:

(9) a. "IMPERFECT" of KWN  

|   | akuun | kunt   
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 m</td>
<td>tikuun</td>
<td>kunt</td>
</tr>
<tr>
<td>f</td>
<td>tikuuni</td>
<td>kunti</td>
</tr>
<tr>
<td>3 m</td>
<td>yikuun</td>
<td>kaan</td>
</tr>
<tr>
<td>f</td>
<td>tikuun</td>
<td>kaanit</td>
</tr>
</tbody>
</table>

b. "PERFECT" of KWN
The verb paradigms are given their traditional names here. The paradigms are used as follows:

(a) The IMPF of KWN is the subjunctive of KWN, and never appears in AUX, as described in Chapter 2. The subjunctive of KWN will be treated in the next chapter, which deals with non-indicative sentences in EA.

(b) The PERF of KWN appears in AUX to mark past tense.

(c) The Ha-IMPF of KWN appears in AUX to mark future tense.

(d) The bi-IMPF is for some speakers in some environments in free variation with the Ha-IMPF. Thus, it may also mark future tense in AUX. There is no inflection of KWN that is ever used to mark present tense.

The subject pronouns that may appear in the AUX node are as follows:

(10) a. Affirmative Pronouns

<table>
<thead>
<tr>
<th>Number</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ana</td>
<td>iHna</td>
</tr>
<tr>
<td>2m</td>
<td>inta</td>
<td>intu</td>
</tr>
<tr>
<td>f</td>
<td>inti</td>
<td></td>
</tr>
<tr>
<td>3m</td>
<td>huwwa</td>
<td>humma</td>
</tr>
<tr>
<td>f</td>
<td>hiyya</td>
<td></td>
</tr>
</tbody>
</table>

b. Negative pronouns

<table>
<thead>
<tr>
<th>Number</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>maniiš</td>
<td>maHnaaš</td>
</tr>
<tr>
<td></td>
<td>mantaaš</td>
<td>mantuuš</td>
</tr>
<tr>
<td></td>
<td>mantiiš</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mahuwwaaš</td>
<td>mahummaaš</td>
</tr>
<tr>
<td></td>
<td>mahiyyaaš</td>
<td></td>
</tr>
</tbody>
</table>
The negative particles:

(11) a. Independent  b. Attached

\[\text{miš (or muš)} \quad \text{ma...š}\]

This completes the list of elements that may appear in AUX.

3.4. The Inventory of PREDICATE

The inventory of AUX is small and closed; the inventory of PRED is large and open. Members of the morphological classes verb, participle, adjective, noun, preposition, and adverb mark predicational functions in PRED; no lexical class is excluded from marking predicational functions in PRED. We turn now to the inventory of \(PRED_1\), the class of predicates that do not mark person subject.

3.4.1. Sentences with \(PRED_1\)

3.4.1.1. Participial Predicators. There are Active and Passive participles in EA, which mark voice and aspect.

3.4.1.1.1. ACTIVE PART Predicators:

The ACT PART inflections are as follows:

(12) ROOT: KTB "write"

\[
\begin{align*}
\text{kaatib} & \quad \text{ms} & \quad "\text{writing}, \\
\text{katba} & \quad \text{fs} & \quad \text{"writer}" \\
\text{katbiin} & \quad \text{pl}
\end{align*}
\]

ACT PART are always active in voice; they are perfective, or (for a lexically defined class) imperfect in aspect.
(13) il-bint \left\{ \begin{array}{l} \emptyset \\
\text{kaanit.} \\
\text{Hatkuun} \end{array} \right\} \text{ katba id-dars} \\
\text{the-girl} \left\{ \begin{array}{l} \text{(has)} \\
\text{had} \\
\text{will have} \end{array} \right\} \text{ written the-lesson} \\

The girl has (had, will have) written the lesson.

\text{katba} in (13) marks perfective aspect, and marks a transitive function. The ACT PART that mark imperfective aspect are derived from roots that refer to either a steady state or an on-going process; verbs derived from these roots are either stative verbs or verbs of motion. I will call these verbs \text{durative} (see Section 3.4.2.1 below). Durative verbs must be identified as such in the lexicon. Examples of durative active participles are:

(14) ir-raagil \left\{ \begin{array}{l} \emptyset \\
\text{kaan} \\
\text{Haykuun} \end{array} \right\} \text{ maa&i} \\
\text{the-man} \left\{ \begin{array}{l} \text{(is)} \\
\text{was} \\
\text{will be} \end{array} \right\} \text{ walking} \\

The man is (was, will be) walking.

(15) il-awlaad \left\{ \begin{array}{l} \emptyset \\
\text{kaanu} \\
\text{Haykuunu} \end{array} \right\} \text{ naymiin} \\
\text{the children} \left\{ \begin{array}{l} \text{(are)} \\
\text{were} \\
\text{will-be} \end{array} \right\} \text{ sleeping} \\

The children are (were, will be) sleeping.

Durative active participles mark imperfective aspect; they are usually intransitive.
3.4.1.1.2. PASSIVE PART Predicators:

The PAS PART inflections are as follows:

(16) ROOT: KTB "write"
   ms maktuub "written"
   fs maktuuba
   pl maktubiin

PAS PART are always passive in voice and perfective in aspect. They are intransitive, and no agent may be stated.

(17) il-baab
     \{ \emptyset \} maftuuH
     \{ \kaan \} PAS PART ms
     \{ \Haykuun \}

   the door \{ (has) \}
   \{ had \}
   \{ will-have \}

   The door has (had, will have) been opened.

3.4.1.2. Other PRED.

This class includes adjectives:

(18) hiyya
     \{ \emptyset \} mab\textgu{\textgu{\`u\`u}}ta hinaak
     \{ \kaanit \} ADJ fs
     \{ \Hatkuun \}

   she \{ (is) \}
   \{ happy there \}
   \{ was \}
   \{ will-be \}

   She is (was, will be) happy there

There are also predicate nouns:

(19) ir-raagil da
     \{ \emptyset \} 9askari
     \{ \kaan \} NP ms
     \{ \Haykuun \}

     the-man DEM \{ (is) \}
     \{ a policeman \}
     \{ was \}
     \{ will-be \}

   That man is (was, will be) a policeman

Locative predicators include:
(20) axuuya \( \{ \emptyset \} \) fi maṣr \( \{ \text{dil wa'}t \} \) kaan PP LOC \( \{ \text{fil wa'}t da \} \) Haykuun

my-brother \( \{ \text{(is) was will be} \} \) in \( \{ \text{Egypt Cairo now at-that-time} \} \)

My brother is (was, will be) in Egypt (Cairo) now (at that time).

3.4.2. Sentences with \( \text{PRED}_2 \)

\( \text{PRED}_2 \) mark person-subject in the predicator by means of bound pronominal affixes.

3.4.2.1. Verbal Predicators. Verbal predicators occur in paradigmatic sets that mark person, number, and gender (in the singular) as we saw in the paradigms of the AUX verb KWN above. These paradigms are:

(21) KTB "write"

<table>
<thead>
<tr>
<th></th>
<th>IMPERFECT</th>
<th></th>
<th>PERFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td>b.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>aktib</td>
<td>katabt</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>m tiktib</td>
<td>katabt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f tiktibi</td>
<td>katabt</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>m yiktib</td>
<td>katab</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f yiktib</td>
<td>katabt</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>niktib</td>
<td>katabna</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>pl tiktibu</td>
<td>katabtu</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>pl yiktibu</td>
<td>katabu</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Ha-IMPF</td>
<td>d.</td>
<td>bi-IMPF</td>
</tr>
<tr>
<td>1</td>
<td>Haktib</td>
<td>baktib</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>m Hatiktib</td>
<td>bitiktib</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f Hatiktibi</td>
<td>bitiktibi</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>m Hayiktib</td>
<td>biyiktib</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f Hayiktib</td>
<td>bitiktib</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>n Hayiktib</td>
<td>biniktib</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>pl Hatiktibu</td>
<td>bitiktibu</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>pl Hayiktibu</td>
<td>bitiktibu</td>
<td></td>
</tr>
</tbody>
</table>
My claim is that verbal predicates in EA, like participial predicates, mark aspect alone; tense in sentences with verbal predicates is marked in AUX just as it is elsewhere in the language. We will return to the topic of tense and aspect in EA in Section 3.8 below.

The usage of the verbal paradigms shown in (21) differs according to whether the verb is durative or non-durative. For non-durative verbs:

(22) \[
\begin{align*}
\emptyset & \quad \text{il-walad biybi9 burtu'aan fi-s-suu'} \\
\text{kään} & \quad \text{bi-IMPF} \\
\text{Haykuun} & \quad 3ms \\
\end{align*}
\]

\begin{align*}
\text{(is)} & \quad \text{the-boy selling oranges in-the-market} \\
\text{was} & \quad \text{Imperfective aspect} \\
\text{will-be} & \\
\end{align*}

The boy is (was, will be) selling oranges in the market.

(23) \[
\begin{align*}
\emptyset & \quad \text{il-bint Hatištiri burtu'aana} \\
\text{kaanit} & \quad \text{Ha-IMPF} \\
*\text{Hatkuun} & \quad 3fs \\
\end{align*}
\]

\begin{align*}
\text{(is)} & \quad \text{the-girl going-to-buy an-orange} \\
\text{was} & \quad \text{Prospective aspect} \\
*\text{will-be} & \\
\end{align*}

The girl is (was, *will be) going to buy an orange.

(24) \[
\begin{align*}
\emptyset & \quad \text{kalu il-burtu'anaat} \\
\text{kaanu} & \quad \text{PERF 3 pl} \\
\text{Haykuunu} & \\
\end{align*}
\]

\begin{align*}
\text{(they-have)} & \quad \text{eaten the-oranges} \\
\text{they-had} & \quad \text{Perfective aspect} \\
\text{they-will-have} & \\
\end{align*}

They have (had, will have) eaten the oranges.

(22) shows the verb BY9 ("sell") inflected in the bi-Imperfect; (23) shows STRY ("buy") inflected in the Ha-Imperfect; and (24) shows the verb 'KL ("eat") inflected in the Perfect. These are the three verb paradigms of the IND mood in EA. Note that the sequence
Haykuun Ha- is excluded. Verbs differ from participles in EA in that:
(1) they mark person, and (2) they do not mark voice.

Some historical notes on these verbal paradigms may be useful. In standard Arabic, the PERF marks perfective aspect, and the IMPF marks imperfective aspect. In all the modern colloquial Arabic languages, additional verb paradigms have evolved by means of a set of prefixes that occur with the IMPF. In EA, these are bi- and Ha-. bi- is said to derive from a preposition bi "with," "in." Ha- is said to derive from the ACT PART of the root RWH "go," and some speakers use raayiH or the particle raH on occasion instead of the prefix Ha- (or ha-). Standard Arabic has a subjunctive mood that has not survived in the colloquial languages. In EA, the IMPF paradigm has come to have a subjunctive or non-finite interpretation for non-durative verbs. For durative verbs, the usage of the paradigms is as follows: (a) the IMPF marks either the subjunctive mood or (indicative mood) imperfective aspect; (b) the PERF marks perfective aspect; (c) the Ha-IMPF marks the prospective aspect; and (d) the bi-IMPF marks the habitual aspect.

Table 3.1 compares durative and non-durative forms in EA.

<table>
<thead>
<tr>
<th>Form</th>
<th>Durative</th>
<th>Non-durative</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPF verb</td>
<td>Subjunctive Mood or Indicative, Imperfective aspect</td>
<td>Subjunctive Mood</td>
</tr>
<tr>
<td>bi-IMPF verb</td>
<td>Habitual aspect</td>
<td>Imperfective aspect</td>
</tr>
<tr>
<td>ACT PART</td>
<td>Imperfective aspect</td>
<td>Perfective aspect</td>
</tr>
</tbody>
</table>
In the Perfect verb paradigm, and the Passive participle paradigm, durative and non-durative forms do not differ.

There are two sub-types of durative verbs. For some durative verbs, the Imperfect is ambiguous between the imperfective aspect and the subjunctive mood. The verb *aftikir* is an example:

(25) Ø aftikir innu miši
    AUX I-think that-he left
    PRES IMPF ls COMP-PRO PERF 3ms

\[ \text{I think he left.} \]
\[ \text{I would think he left.} \]

The alternative translations show the ambiguity. *aftikir* does not mark imperfective aspect with the bi-IMPF. For other durative verbs, the IMPF marks only the subjunctive mood, and the ACT PART is used to mark imperfective aspect. *raayiH* in (26a) is an example:

(26) a. 9ali Ø raayiH mašr
    AUX going Egypt
    PRES ACT PART (ms)

Ali is going to Egypt.

b. Ø biyruuH mašr kull şeef
    AUX he-goes (habitually) Egypt every summer
    PRES bi-IMPF

He goes to Egypt every summer.

c. yiruuH mašr!
    he-go Egypt
    IMPF (ms)

Let him go to Egypt!

In (26b), the bi-IMPF of RWH marks the habitual aspect; in (26c) the IMPF marks the subjunctive/jussive (to be described in the next chapter). As shown in preceding examples, for non-durative verbs the bi-IMPF marks the imperfective aspect and the ACT PART marks the perfective aspect. These verb classes must be so marked in the lexicon.
3.4.2.2. Non-Verbal PRED\(^2\). These non-verbal predicators mark person-subject by means of bound pronominal suffixes.

3.4.2.2.1. Possessive and Existential Sentences:

These sentences have a preposition as a PRED\(^2\). These prepositions occur with the set of pronominal suffixes that mark possession elsewhere:

(27) kitaab "book"

1 kitaabbi "my" 1 pl kitabna "our"
2 m kitaabak "your" m. 2 pl kitabku(m) "your"
 f kitaabik "your" f. 3 pl kitabhum "their"
3 m kitaabu(h) "his"
 f kitabha "her"

Compare:

(28) 9and "with", "at", "chez"

9andi 9andina
9andak 9andukum
9andik 9anduhum
9andu
9andaha

(Changes in the suffixes are phonologically determined.) In possessive sentences with these prepositional PRED, NP subjects are optional:

(29) il-walad \(\emptyset\) 9andu kitaab

\(\begin{array}{l}
\text{kaan} \\
\text{Haykuun}
\end{array}\)

the boy \(\begin{array}{l}
\text{(is)} \\
\text{was} \\
\text{will-be}
\end{array}\) with-him book

(The boy) he was (had, will have) a book.

The proposed structure is as follows;
Note that this non-verbal PRED₂ is transitive. The analysis of the sentence shown in (30) is supported by the fact that KWN in AUX may agree in person, number, and gender with the subject of the sentence:

(31) kaanu 9anduhum itneen xaddamiin nubiyyin

They had two Nubian servants.

AUX marking agreement with the subject marked pronominally in PRED is in free variation with a third person masculine singular "abstract subject" marked in AUX. ("There was unto them two Nubian servants.")
Several locative prepositions are used in possessive sentences. 9and is the least restricted in usage, and can be used in any possessive sentence.

\[
\begin{align*}
(32) & \quad \begin{cases}
\emptyset & 9\text{andaha} \text{ wilaad } \text{kitiir} \\
\text{kaanit} & \text{Hatkuun}
\end{cases} \\
\text{is} & \quad \text{with-her children many} \\
\text{was} & \quad \text{will be} \\
3fs &
\end{align*}
\]

She has (had, will have) a lot of children.

An NP subject may precede AUX here:

\[
(32')
\]

\[
\begin{align*}
\text{S} & \\
\text{SUBJ} & \quad \text{AUX} \\
N & \quad V \\
\text{Salma} & \quad \text{KWN} \quad \text{(be)} \\
\text{PP} & \quad \text{PP} \\
9\text{andaha} & \quad \text{with-her} \\
\text{wilaad } & \quad \text{kitiir} \\
\text{many } & \quad \text{children}
\end{align*}
\]

Salma has (had, will have) a lot of children.

\[
(33) \quad \begin{align*}
\text{illi} & \quad \emptyset \quad 9\text{anduhum} \text{ filuus} \quad \emptyset \quad 9\text{anduhum} \text{ nufuuz} \\
\text{who} & \quad \text{AUX} \quad \text{with-them money} \quad \text{AUX} \quad \text{with-them influence} \\
\text{PRES} & \quad \text{PP} \quad \text{PRES} \quad \text{PP}
\end{align*}
\]

Those who have money have influence.

The prepositions wayya and ma9a are usually used with reference to possessions carried on the person:
I have (had, will have) some money with me.

The preposition *li* is usually employed with reference to real property.

I have (had, will have) a farm.

But it may be used elsewhere (see Mitchell 1956, p. 29).

You are (were, will be) right.

The preposition *9ala* "on" may be used in a possessive construction with a modal interpretation:

You have (had, will have) to go with her.

Compare also "it's up to you to go." Wise (1975, p. 135) cites "semi-idiomatic" uses of the preposition *uddaam* "before, in front of":

(34) \[
\begin{align*}
&\emptyset \\
kunt & ma9aaya \\
Hakuun & filuus \\
\{is\} & wayyaaya \\
\{will be\} & with-me \\
\end{align*}
\]

I have (had, will have) some money with me.

(35) \[
\begin{align*}
&\emptyset \\
kaan & liyya \\
Haykuun & 9izba \\
\{is\} & at-me \\
\{will be\} & farm \\
\end{align*}
\]

I have (had, will have) a farm.

(36) \[
\begin{align*}
&\emptyset \\
kaan & lak \\
Haykuun & Ha'' \\
\{is\} & with-you \\
\{will be\} & right \\
\end{align*}
\]

You are (were, will be) right.

(37) \[
\begin{align*}
&\emptyset \\
kaan & 9aleek \\
Haykuun & tiruuH \\
\{is\} & ma9aaha \\
\{will be\} & on-you \\
\end{align*}
\]

You have (had, will have) to go with her.
Existential sentences employ the preposition fi "in" as a predicator, and a pronoun suffix (3ms). AUX always marks third person masculine singular. What is claimed to exist must be marked in an indefinite NP.

(38) a. fiih naas kitiir fil Hafla
   in-it people much at-the-party
   There are a lot of people at the party.

b. kaan fiih naas kitiir fil Hafla
   was in-it people much at-the-party
   There were a lot of people at the party.

c. Haykuun fiih naas kitiir fil Hafla
   will-be in-it people much at-the-party
   There will be a lot of people at the party.

Compare the non-existential sentence with a definite subject:

(39) a. il'ooqa fiiha naas kitiir
   the-room in-it people much
   The room has a lot of people in it.

b. il'ooqa \{\underbrace{\text{kaan}}_{\text{kaanit}}\} fiiha naas kitiir
   the-room was in-it people much
   The room had a lot of people in it.

(AUX may or may not agree in number and gender here.)

c. il'ooqa \{\underbrace{\text{Haykuun}}_{\text{Hatkuun}}\} fiiha naas kitiir
   the-room will-be in-it people much
   The room will have a lot of people in it.
3.4.2.2.2. Nouns of Volition Sentences:

These sentences have a noun expressing volition as a PRED₂.

These nouns appear with the set of pronominal suffixes that occur with the prepositional PRED₂ just described. They are also transitive predicators.

(40) \[
\begin{array}{c}
\emptyset \\
\text{kaan} \\
\text{(is)} \\
\text{was}
\end{array}
\] biddi beet fil Hayy ig-gidiid

I really want (wanted) a house in the new quarter.

As noted in Chapter 2, future tense with a noun of volition is considered semantically anomalous. These transitive PRED₂ may take sentential complements:

(41) \[
\begin{array}{c}
\emptyset \\
\text{kaan} \\
\text{(is)} \\
\text{was}
\end{array}
\] biddi 'aruuH faransa is-sanaadi

I really want (wanted) to go to France this year.

As with possessive sentences with prepositional PRED₂, AUX in these sentences may be either third person masculine singular "abstract subject," or AUX may agree in person and number with the subject of the sentence.

(42) a. kaanit biddaha beet gidiida
    was 3fs wish-her house new

    She really wanted a new house.

b. kaanu bidduhum yiruuHu faransa
    was 3 pl wish-their they go France

    They really wanted to go to France.
Other nouns of volition that may occur in such constructions include: nifs "feel like"; 'asād "intention"; ḡaraḍ "purpose"; niyya "disposition, appetite"; xaaṭir "mind, idea"; ha'all "right." AUX varies in agreement in all these nouns of volition sentences.

3.4.3. Objects

There is no syntactic category object in EA; objects (direct and indirect) are marked in PRED, either by suffixed pronouns or by NPs:

(43) 9ali ø katab-hum-l-ak
     AUX wrote them for you
     PRES PERF 3ms-PRO-PREP-PRO

Ali wrote them to/for you.

(44) 9ali ø katab-u li hasan
     AUX wrote-it to IO
     PRES PERF 3m-PRO PREP NP

Ali wrote it to/for Hassan.

(45) 9ali ø katab ig-gawaab li hasan
     AUX wrote the-letter to
     PRES PERF 3ms DO IO

Ali wrote the letter to/for Hassan.

Some di-transitive verbs permit the indirect object to appear before the direct object, without a preposition. This construction is much less common than in English; only a few verbs allow it:

(46) 9ali ø idda il-filuus li hasan
     AUX gone the money to
     PRES PERF 3ms DO IO

Ali gave the money to Hassan.

(47) 9ali ø idda hasan il-filuus
     AUX gave the-money
     PRES IO DO

Ali gave Hassan the money.
Later in this chapter, we will look at negative sentences in some detail. I want to point out here that when the discontinuous NEG marker ma---$ attaches to predicators, it spans all these object and prepositional suffixes:

(49) 9ali Ø maddahuluu$  
AUX Neg-PERF 3ms PRO PREP PRO-NEG  
PRES gave-it-to-him (NEG)

Ali didn't give it to him.

An NP that marks a direct object may be topicalized, and appear in sentence-initial position when the speaker wants to give it particular emphasis:

(50) ik-kitaab-da Ø ma$uftuu$ abl kida  
the-book-DEM AUX NEG-I-saw-it before this  
PRES PERF ls PRO

That book I'd never seen (it) before.

I interpret these topicalized sentence-initial objects not as appearing in a category object, but as an NP attached to the sentence in a topic/comment construction:

(50')

```
(ik-kitaab-da)
NP

S

S

I never saw it before

ma$uftuu$ abl kida
```
Note that the object pronoun still appears in PRED. Similarly:

\[(51) \text{il-kitaab-da } \emptyset \text{ mabaššit\v{s} fiih abl kida } \]
\[\text{the-book-DEM AUX NEG-I-looked in-it before now } \]
\[\text{PRES PERF ls } \]

That book I never looked at (it) before now.

When an oblique argument is fronted, the preposition is fronted also:

\[(51') \text{fik-kitaab-da } \emptyset \text{ mabaššit\v{s} abl kida } \]
\[\text{at-the-book DEM AUX NEG-I-looked before now } \]
\[\text{PRES PERF ls } \]

(At that book I never looked before now.)

In (51'), the initial PP appears in the optional category ADV (to be described in 3.7 below).

3.4.4. Derived Forms of the Verb in EA

A large part of the rich morphology of the Arabic languages is devoted to derived forms, or "measures" of the verb. In these derived forms, additional verb stems are created through affixes added to the (typically CCC) root; these verb stems are then inflected in the PERF and IMPF paradigms described above. These derivational affixes are not freely productive, but the derived forms for the most part show semantic correspondences. Thus, there is a class of passive verbs, a class of causative verbs, etc., where the members of each class share a derivational affix. The reader is referred to Mitchell (1956, 1962), to Aboul-Fetouh (1969), and to Abdel-Massih et al. (1979) for excellent treatments of derived verbs in EA. Wise (1975) presents a transformational analysis of these morphological passives and causatives; this account is vulnerable to the objections that these affixes are not
freely productive, and that some derived forms do not share the semantic feature assigned to the derivational affix. It appears that the modern Arabic languages show "frozen" forms in the verb measures that are relics of active derivational processes in earlier stages of the language.

Passive verbs have a prefix -in or -it, and differ from their active analogues in having one less argument; they mark intransitive functions, while corresponding unprefixed verbs mark transitive functions.

(52) fariid ø kasar ik-kubbaaya
     AUX broke the-glass
     PRES PERF 3ms

Fariid broke the glass.

(53) ik-kubbaaya ø inkasarit
     the-glass AUX been-broken
     PRES PERF 3fs

The glass is broken.

(54) fariid kaan katab ir-risaala
     AUX written the thesis
     PAST PERF 3ms

Fariid had written the thesis.

(55) ir-risaala kaanit inkatabit is-sana illi faatit
     the thesis AUX written the year that passed
     PAST PERF 3fs

The thesis had been written the previous year.

(56) fariid ø sa9du fi şuğlu
     AUX helped him in work-his
     PRES PERF 3ms PRO

Fariid helped him in his work.
(57) huwwa Haykuun itsaa9id fi ālu
he AUX helped in work-his
FUTURE PERF 3ms

He will be helped in his work.

Some speakers prefer the affix -it rather than -in in some of these derived passives.

A derived causative verb differs from its non-causative analogue in that the function it marks has an added argument. One-argument verbs correspond to two-argument verbs, and two-argument verbs correspond to three-argument verbs in derived form. In causative verbs, the middle radical is geminate. Examples:

(58) fariid Ø maat
AUX died
PRES PERF 3ms

Fariid died.

(59) hasan Ø mawwit fariid
AUX killed
PRES PERF 3ms

Hassan killed Fariid.

The root MWT is "die"; the root MWWT is "kill." In the following, FHM is "understand"; FHHM is "explain, cause to understand":

(60) fariid Ø yifham il-muškila
AUX understands the-problem
PRES IMPF 3ms

Fariid understands the problem.

(61) fariid Ø yifahhim hasan il-muškila
AUX explains the problem
PRES IMP 3ms

Fariid is explaining the problem to Hassan.
In (61), the indirect object precedes the direct object. An alternative order, with the preposition \textit{li}, "to" is possible, as in other di-transitive sentences:

(62) fariid $\emptyset$ yifahhim il-mu$\text{\text{"u}}$kila li hasan
      AUX explaining the problem to
      PRES IMPF 3ms

Fariid is explaining the problem to Hassan.

These and other derived forms of the verb in EA are all PRED$_2$, and present no problems for the syntactic analysis of EA sentences proposed here. The objects of these transitive and di-transitive verbs are marked in NPs or pronominal suffixes that appear in PRED, and may also appear as topicalized objects.

Some causative verbs with geminate middle radicals have no corresponding verbs with a single middle radical; however, the CCC root may appear in an NP or adjective. For example: \textit{wayam} "(a) swelling": \textit{WR$\text{"a}$M} "to swell"; \textit{sahl} "easy": \textit{SHHL} "to facilitate": \textit{kilma} "word": \textit{KLLM} "speak to."

Lexical borrowings do not often appear as verbs in Arabic, because of the CCC root and vocalic infix pattern occurring in the verb paradigms. Derived verb forms based on loan words are quite rare, showing the low productivity of these derivational affixes. One example known to me is \textit{FLLM}, "to make a movie" from \textit{film} "movie."

Wise (1976, p. 165n) notes also \textit{SGGR} "smoke cigarettes" and \textit{MZZK} "make music."
3.4.5. Predicate Ellipsis

In response to a yes/no question, where the context reduces potential misunderstanding, a speaker may reply with a partial sentence without a predicate— with AUX alone.

(63) kaanit il bint fi-g-gineena walla la'?
was 3fs the-girl in-the-garden or no?
AUX LOC PP

Was the girl in the garden or not?

(64) aywa, kaanit
yes was 3fs
AUX

Yes, she was.

(65) kaanu il-awlaad naymiin, miš kida?
were 3 pl the children sleeping, not so?
AUX ACT PART pl

The children were sleeping, weren't they?

(66) la', makanuuš
No NEG were 3 pl
AUX

No, they weren't.

(67) kaan il-walad biybi9 burtu'aan fi-s-suu'?
was the-boy selling oranges in the market?
AUX bi-IMPF 3ms

Was the boy selling oranges in the market?

(68) la', makanš
no NEG was 3ms
AUX

No, he wasn't.

In (64, 66, 68), AUX is the only constituent of the second clause and AUX marks tense, person subject, and sentence polarity. These examples show the elision of both verbal (67) and non-verbal (63, 65) predications.
3.5. Sentential Negation

As shown in Chapter 2, S-NEG is marked in AUX, via a particle miṣ or muṣ or via the discontinuous elements ma...ṣ which may appear attached to an inflection of the AUX verb KWN or to the subject-marking pronouns that appear in the AUX node. In some present tense sentences, where there is no inflection of KWN, the NEG particles may appear attached to the predicator of the sentence. We may generalize over NEG attachment as follows:

(69) In non-present tense sentences, NEG may attach to the AUX verb KWN; in present tense sentences, NEG may attach to a subject pronoun in AUX, if the predicator is a PRED₁; or S-NEG may attach to the predicator, if it is a PRED₂.

Since PRED₂ (predicators that mark person subject) includes items other than verbs, we find NEG attaching to nouns of volition and prepositional predicators as well as verbs and pronouns. NEG never attaches to PRED₁. Examples will be given below. Since all the items that NEG attaches to mark person subject, we can reformulate (69) as follows:

(70) S-NEG may attach to the first element in the sentence that marks person subject in the AUX or PRED node, excluding elements appearing in the SUBJECT node.

By (70), S-NEG may attach to AUX, or to PRED₂ if AUX is empty; and S-NEG may attach to subject-marking pronouns in AUX, but not to subject-marking pronouns in the SUBJECT node of the sentence. This economical statement of NEG attachment in the language makes reference to the major syntactic categories in the language. Examples of NEG attachment to non-verbal PRED₂ are as follows:
Examples (71), (73) and (75) are present tense non-verbal $\text{PRE}_2$ sentences where NEG attaches to $\text{PRE}_2$ when the AUX node is empty. In the corresponding past tense sentences, NEG attaches to the AUX verb. NEG attachment with these non-verbal $\text{PRE}_2$ corresponds to NEG attachment with verbal $\text{PRE}_2$ when the AUX node is empty, as shown in Chapter 2.

Constructions with these negated nouns and prepositions have previously been treated as aberrant sentence types. Aboul-Fetouh (1969, p. 55) remarks: "There are a few noun stems which may occur in a
verbal slot (ma---§)." These non-verbal PRED\textsubscript{2} are few in number compared to verbs but their frequency is high: all possessive and existential sentences, and many volitional sentences. Other writers have remarked that some prepositions have two ways of being negated (cf. Harrell et al., 1963, pp. 29.3, 29.4) and point out meaning differences, but give no account of the differences in syntactic structure that underlie the semantic contrast. Compare:

(77) mafiiš  
NEG in-it 
Hadd yi'dar yi9mil kida 
PRED\textsubscript{2} 3ms 
one can do so

There's no one who can do that.

(78) faruu' miś filbeet dilwa't  
NEG in-the-house now 
AUX LOG PP PRED\textsubscript{1}

Farouk is not at home now.

Structures:

(77')

\begin{center}
\begin{tikzpicture}[level distance=1.5cm, sibling distance=1.5cm, grow cyclic, shape=rectangle]

  \node (S) {S}
    child {node (AUX) {AUX}}
    child {node (PRED\textsubscript{2}) {PRED\textsubscript{2}}}
      child {node (NEG) {NEG}}
      child {node (V) {V}}
      child {node (PREP) {PREP}}
        child {node (P) {P}}
          child {node (PREP) {PREP}}
            child {node (P) {P}}
              child {node (NP) {NP}}
                child {node (PRO) {PRO}}
                  child {node (NP) {NP}}
                    child {node (S) {S}}
                      child {node (miś) {miś}}
                        child {node (not) {not}}
                          child {node (PRES) {PRES}}
                            child {node (∅) {∅}}
                              child {node (fiih) {fiih}}
                                child {node (Hadd) {Hadd}}
                                  child {node (yi'dar) {yi'dar}}
                                    child {node (yi'mil) {yi'mil}}
                                      child {node (kida) {kida}}
                                        child {node (one) {one}}
                                          child {node (can) {can}}
                                            child {node (do) {do}}
                                              child {node (so) {so}}

\end{tikzpicture}
\end{center}
In (77), the AUX node is empty; the predicator marks person subject, and NEG attaches. All non-verbal PRED\textsubscript{2} are transitive. The pronominal suffix on the preposition marks the abstract third person singular subject of the sentence. (Compare es gibt or il y a.)

(78')

In (78), PRED does not mark person subject, and NEG does not attach. Note also NEG attachment in the following:

(79) a. ∅ 9andi saa9a laakin miš ma9aaya
AUX with-me watch but not with-me
PRES

I have a watch but not with me.

b. ma9andiiš saa9a
NEG-with-me watch

c. (ma)ma9ayiiš saa9a
NEG-with-me watch

I don't have (own) a watch. I don't have a watch \{ on \} me.

In these examples, NEG attaches to a preposition only if it is the predicator. Compare also:

(80) a. ma9anduhumš 9arabiyya
NEG-AUX-with-them car
PRES

They don't have a car.
b. huwwa miš 9anduhum
he NEG-AUX with-them
PRES

He's not with them (at their house).

(81) a. makanš fiih wa't  b. faruu' makanš fil beet
NEG AUX in-it time NEG AUX pp
PAST PAST

There wasn't time. Farouk wasn't at home.

(82) a. makanš 9anduhum 9ařabiyya
NEG-AUX with-them car
PAST

They didn't have a car.

b. huwwa makanš 9anduhum
he NEG-AUX with-them
PAST

He wasn't with them (at their house).

In this account of NEG attachment in EA, we have arrived at generaliza­
tions that cover a number of sentence types that have previously been
considered to be irregular or exceptional: possessive, existential,
nouns of volition, and negative pronouns. In stating these generaliza­
tions, reference has been made to the proposed syntactic categories of
EA, to their relative order, and to the fact that these are required
and optional categories according to sentence type. The fit of these
generalizations over the phenomenon of NEG attachment in EA lends
support to the syntactic analysis proposed here.

3.6. The Inventory of SUBJ

In foregoing examples, we have seen proper names and pronouns
appearing in SUBJ, to mark the subject argument of a function marked
in PRED. We have also seen NPs such as ir-raagil, "the man" appearing
in SUBJ. Expanded NPs incorporating an adjective or a relative clause may mark subject:

(83) ir-raagil it-tawiil illi kaan hina imbaariH Ø 9aawiz
    the-man the-tall who AUX here yesterday AUX wanting
    PAST PRES ACT PART ms

yikallimak
    speak-to-you
    IMPF 3ms-PREP-PRO

The tall man who was here yesterday wants to speak to you.

Participles may be definite and appear in SUBJ as NPs:

(84) ik-kaatib il-mašhuur kaan fil Hafla
    the-writer the-famous AUX at-the-party
    DET ACT PART DET PAS PART PAST

The famous writer was at the party.

Finite or non-finite clauses may also function as subjects of matrix clauses:

(85) inn waaHid Ø 9amal kida kaan 9eeb
    that one AUX did so AUX shame
    COMP PRES PERF 3ms PAST

That someone did such a thing was a shame.

(86) inn waaHid yi9mil kida Ø 9eeb
    that one do so AUX shame
    COMP IMPF 3ms PRES

For one to do such a thing is a shame.

In (86) the clause serving as subject of the matrix clause is subjunctive (non-finite); these clause types will be discussed in Chapter 3. Verbal nouns may also appear in non-finite clauses that are the subjects of matrix sentences.
My buying a book for my friend surprised him.

Carrying out his orders wasn't possible.

3.7. The Inventory of ADV

There are non-sentential adverbs that are marked in PRED:

(89) kaan yigri bisur9a

He was running fast.

(90) il-mubaara kaanit mal9uuba kwayyis

The game was well played.
All adverbs that appear in PRED mark non-sentential functions; they embed only a function marked in PRED. In the syntactic category ADV, always optional, some non-sentential and some sentential functions are marked; the latter take the function marked in PRED and its arguments under their scope, and are modal. These modal adverbs will be discussed in Chapter 6, on modality in EA.

Temporal and locative prepositional phrases often appear in ADV, as do simple locatives and temporals such as hina "here" or bokřa "tomorrow." There are also ADV of condition:

(91) 9ala kull Haal, miš 9awza ašuufu taani

In any case, I don't want to see him again.
An example of a temporal prepositional phrase in ADV is:

(92) fi-ṣ-ṣubH aHibb aṣrab ahwa saada

In the morning, I like to drink unsweetened coffee.

Non-sentential adverbs may be typicalized to appear in ADV.

(93) bišwees wi bi ṣu9uuba kaan biyit9allim yi'ra wi yiktib

Slowly and with difficulty he was learning to read and write.
There are also clauses that may appear in the syntactic category ADV; these clause types will be described in Chapter 4.

Optional ADV, like optional SUBJ, may appear between AUX and PRED:

(94) kaanit min da'ii'a fil-beet

\[
\begin{array}{c}
\text{S} \\
\text{AUX} \quad \text{ADV} \quad \text{PRED}_1 \ P \\
\text{V} \quad \text{PP} \quad \text{PP} \\
\text{kaanit} \quad \text{min da'ii'a} \quad \text{fil-beet} \\
PAST \quad a\text{-minute-ago} \quad \text{in-the-house}
\end{array}
\]

Whe was in the house a minute ago.

Here the temporal adverbial prepositional phrase is topicalized, and appears in ADV. Unmarked word order is as follows:

(95)

\[
\begin{array}{c}
\text{S} \\
\text{AUX} \quad \text{PRED}_1 \ P \\
\text{V} \quad \text{PP} \quad \text{PP} \\
\text{kaanit} \quad \text{fil-beet} \quad \text{min da'ii'a}
\end{array}
\]

Temporal and locative prepositional phrases thus may appear in three loci in the sentence: (1) in ADV, where ADV may either precede or follow AUX (91, 92, 93); (2) as PRED$_1$; or (3) as a sub-sentential constituent of PRED$_1$ or PRED$_2$.

Some adverbs that mark sentential functions in ADV always appear S-initially:
(96) lissa xarag

He has just gone out.

Whereas others usually occur in S-final position:

(97) miš Hayirga9 abadan

He will never return.

I recommend to the reader an interesting and valuable treatment of adverbs in EA in Wise. (1975, Chapter I). Wise recognizes a sentential constituent ADV in EA, and that certain adverbial expressions may appear either in this constituent or before or after the predicator of the sentence.

3.8. The Semantics of Tense and Aspect in EA

In Section 3.4.2.1 above I noted that some IND sentences in EA mark tense alone; these are sentences with PRED₁ and sentences with non-verbal, non-participial PRED₂. Other IND sentences mark both tense and aspect; these are sentences with a verbal or participial PRED₂.
Tense is marked in AUX and aspect is marked in verbs or participles, as follows:

(98) a. AUX + bi-IMPF

<table>
<thead>
<tr>
<th></th>
<th>biyiktib</th>
<th>He is writing, writes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>kaan</td>
<td>&quot;</td>
<td>He was writing.</td>
</tr>
<tr>
<td>Haykuun</td>
<td>&quot;</td>
<td>He will be writing.</td>
</tr>
</tbody>
</table>

b. AUX + Ha-IMPF

<table>
<thead>
<tr>
<th></th>
<th>Hayiktib</th>
<th>He is gonna write.</th>
</tr>
</thead>
<tbody>
<tr>
<td>kaan</td>
<td>&quot;</td>
<td>He was gonna write.</td>
</tr>
</tbody>
</table>
*Haykuun | "       | ---                 |

KTB is a non-durative verb, where the IMPF is the subjunctive or non-finite form, and bi- marks indicative mood, imperfective aspect, and Ha- marks the prospective aspect. For a durative verb such as XRG "go out":

(99) a. AUX + ACT PART

<table>
<thead>
<tr>
<th></th>
<th>xaarig</th>
<th>He is going out.</th>
</tr>
</thead>
<tbody>
<tr>
<td>kaan</td>
<td>&quot;</td>
<td>He was going out.</td>
</tr>
<tr>
<td>Haykuun</td>
<td>&quot;</td>
<td>He will be going out.</td>
</tr>
</tbody>
</table>

b. AUX + bi-IMPF

<table>
<thead>
<tr>
<th></th>
<th>biyuxrug</th>
<th>He usually goes out.</th>
</tr>
</thead>
<tbody>
<tr>
<td>kaan</td>
<td>&quot;</td>
<td>He usually went out.</td>
</tr>
<tr>
<td>Haykuun</td>
<td>&quot;</td>
<td>He usually will go out.</td>
</tr>
</tbody>
</table>

c. AUX + Ha-IMPF

<table>
<thead>
<tr>
<th></th>
<th>Hayuxrug</th>
<th>He is gonna go out.</th>
</tr>
</thead>
<tbody>
<tr>
<td>kaan</td>
<td>&quot;</td>
<td>He was gonna go out.</td>
</tr>
</tbody>
</table>
*Haykuun | "       | ---                 |

Here the ACT PART marks imperfective aspect; the bi-IMPF marks habitual aspect, and the Ha-IMPF, as always, marks prospective aspect.

The PERF paradigm, for all PRED2 verbs marks perfective aspect:

(100) | katab   | He wrote, has written, had written. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>kaan</td>
<td>&quot;</td>
</tr>
<tr>
<td>Haykuun</td>
<td>&quot;</td>
</tr>
</tbody>
</table>
For non-durative verbs, the ACT PART marks perfective aspect:

(101)  Ø kaatib He has written.
kaan " He had written.
Haykuun " He will have written.

For non-durative verbs, the PAS PART marks passive voice, perfective aspect:

(102)  Ø maktuub It has been written.
kaan " It had been written.
Haykuun " It will have been written.

Whereas most durative verbs, being intransitive, do not have a corresponding PAS PART form. Some durative verbs do have a corresponding PAS PART:

(103)  Ø ma9ruuf inn mamduuh kaan mawguud
AUX known COMP (name) AUX present
PRES PAS PART ms PAS PART ms PAST PAS PART ms

It is known that Mamduh was present.

PRES tense marked in AUX plus perfective aspect in PRED (verb or participle) in EA corresponds to simple past tense constructions in many languages; compare modern French il a écrit, "he wrote." When a PERF verb form is preceded by kaan, the construction is PAST PERF; when a PERF form is preceded by Haykuun, the construction is a FUTURE PERF. When no form of KWN precedes the PERF, Ø PRES tense makes the construction PRES PERF.

Ø katab has a wider time reference than the more specific forms with past and future tense and the perfective aspect. The time reference of Ø katab is dependent upon context. Compare the English:

(104) a. He \[
\begin{cases}
\text{wrote} \\
\text{has written}
\end{cases}
\] the lesson before now.
b. He \[
\begin{cases}
\text{wrote} \\
\text{had written}
\end{cases}
\] the lesson before then.
In EA, the combination of present tense in AUX and perfective aspect verb permits a present perfect time reference. All other tense-aspect constructions exclude it. Participial sentences are parallel: only the present tense/perfective aspect combination permits a present time reference; the other combinations exclude it. When a speaker wishes to be specific about past perfect or future perfect time reference, he uses PAST and FUTURE tense with verb or participle.

Although verbs and participles both mark aspect, in other respects they do not mean the same. Participles are nominals; with the definite article, they are NPs. The active participle of a non-durative verb, marking perfective aspect, means that the agent is in a state of having performed the act specified by the root, and that the effect of the act is still current. The PERF verb form of a non-durative verb means that the agent's act is complete. The distinction may be seen in the following contrast:

(105) a. miin Ø fataH il-baab?
   who AUX opened the door
   PRES PERF 3ms

Who (has) opened the door?

b. miin Ø faatiH il-baab?
   who AUX opened the door
   PRES ACT PART ms

Who has opened the door?

McCcarus (1976, p. 11) points out this contrast in Syrian and Modern Standard Arabic, and it is present in EA also. In (105a), the door may or may not be open; in (105b) it is open. That is, Ø fataH may mean either "opened, has opened" while Ø faatiH more often means "has opened." Both PAST and FUTURE tense in AUX occurs before each form:
And the contrast is not present in these sentences. McCarus (1976) presents an interesting analysis of tense and aspect in Modern Standard Arabic that is relevant to tense and aspect in EA. McCarus (1976, p. 8) notes that KWN is not like any other verb:

... a word must be said about kaana "to be." kaana is unique in MSA. It functions as a time switcher. The perfect tense kaana transforms the sentence to past time, while the imperfect yakuunu, which normally occurs in MSA with the predictive particle sa-, makes a prediction .... (EA has Ha- instead of sa-)

McCarus (1976, p. 8) concludes: "It is to be understood that kaana is excluded from the discussion of MSA verbs in this paper. It functions as an indicator of earlierness (perfect tense) or prediction (imperfect tense)."

When we recognize that although sentences in EA mark both tense and aspect, tense is marked only by KWN in AUX and aspect is marked by other verbs and by participles in PRED, it is easier to unravel the aspectual distinctions marked in PRED. And if we recognize the role of KWN in marking tense, we are able to account for the crucial fact that sentences that have neither verbs nor participles in PRED mark tense, and do not mark aspect.

Further support for the claim that PRED verbs and participles mark aspect alone may be found in an analysis of the non-finite clause...
type known as Haal ("condition") in Arabic. Haal constructions mark aspect, but not tense, since they have no inflection of KWN:

(107) kaän fiīh raagil biyğanni
AUX in-it man singing
PAST bi-IMPF 3ms

There was a man singing.

(108) Ø la'eetu kaatib ig-gawaab
AUX I-found him written the-letter
PRES PERF 1s PRO ACT PART ms

I found him having written the letter.

Haal constructions will be discussed further in Chapter 5, on subordination. In Chapter 5 we will see other non-finite embedded clauses where verbs and participles mark aspect alone:

(109) Ø 9awzak tikuun bitğanni
AUX she-wants you be singing
PRES ACT PART fs PRO IMPF 2ms bi-IMPF 2ms

She wants you to be singing.

(110) Ø 9awzak tikuun katabt ig-gawaab
AUX she-wants-you be written the-letter
PRES ACT PART fs PRO IMPF 2ms PERF 2ms

She wants you to have written the letter.

In these examples tikuun is the (2ms) non-finite subjunctive be of KWN, and the embedded clause is non-finite. Tense is not marked, but aspect is marked in the verb forms of the embedded clause.

Therefore, some sentences mark both tense and aspect; these are finite sentences with verbal and participial PRED. Some sentences mark only tense; these are finite sentences with non-verbal, non-participial PRED. And some clauses mark only aspect; included here are certain non-finite embedded clauses, as in (107) through (110). I conclude that tense in AUX and aspect in PRED are independent.
3.9. Aspectual Verbs

There are two verbs which may mark continuative aspect in EA. These verbs appear with other verbs in verb sequences with no intervening clause boundary, and are the only verbs other than KWN in AUX to do so. These aspectual verbs are not AUX verbs, however. They are PRED₂ verbs, and when they occur with another PRED₂ verb they form a PRED₂ verb sequence. I will call them ASP PRED₂.

\[
\begin{align*}
(111) & \quad \emptyset \quad \text{fiğıl} \quad \text{yiktib} \\
& \quad \text{kaan} \quad \text{stayed} \quad \text{writing} \\
& \quad \text{Haykuun} \quad \text{PERF} \ 3\text{ms} \quad \text{IMPF} \ 3\text{ms} \\
& \quad \text{He} \quad \text{kept on,} \quad \text{writing} \\
& \quad \text{had kept on} \\
& \quad \text{will have kept on}
\end{align*}
\]

\[
\begin{align*}
(112) & \quad \emptyset \quad \text{ağad} \quad \text{yiktib} \\
& \quad \text{kaan} \quad \text{sat} \quad \text{writing} \\
& \quad \text{Haykuun} \quad \text{PERF} \ 3\text{ms} \quad \text{IMPF} \ 3\text{ms} \\
& \quad \text{He} \quad \text{kept on} \quad \text{writing} \\
& \quad \text{had kept on} \\
& \quad \text{will have kept on}
\end{align*}
\]

These sentences contrast with the following sentences with a conjunction and an embedded clause:

\[
\begin{align*}
(113) & \quad \emptyset \quad \text{fiğil} \quad \text{9aşan} \quad \text{yiktib} \\
& \quad \text{AUX} \quad \text{stayed} \quad \text{for} \quad \text{writing} \\
& \quad \text{PRES} \quad \text{PERF} \ 3\text{ms,} \quad \text{CONJ} \quad \text{IMPF} \ 3\text{ms} \\
& \quad \text{He} \quad \text{stayed in order to write.}
\end{align*}
\]

\[
\begin{align*}
(114) & \quad \emptyset \quad \text{ağad} \quad \text{9aşan} \quad \text{yiktib} \\
& \quad \text{AUX} \quad \text{sat} \quad \text{for} \quad \text{writing} \\
& \quad \text{PRES} \quad \text{PERF} \ 3\text{ms,} \quad \text{CONJ} \quad \text{IMPF} \ 3\text{ms} \\
& \quad \text{He} \quad \text{sat down in order to write.}
\end{align*}
\]

In (111, 112), these verbs are ASP PRED₂; in (113, 114) they are ordinary PRED₂ verbs. The second verb in these verb sequences is always in the IMPF, the non-finite form. The ASP PRED₂ may occur in
the PERF, as in these examples, or in the IMPF (they are durative verbs), or in the Ha-IMPF:

(115)  ø Hayu9ud yiktib
AUX gonna stay writing
PRES Ha-IMP 3ms IMPF 3ms

He's gonna keep on writing.

The proposed structure is as follows:

(116) makanš Hayifdal yiktib

He wasn't gonna keep on writing.

The aspectual marker 9ammaal appears in similar constructions:

(117)  ø 9ammaala ti'ra ik-kitaab
AUX ASP fs read the-book
PRES IMPF 3fs

She is in the process of reading the book.

9ammaal agrees in number and gender with the subject marked in the following IMPF verb. It may be shortened to 9am, and may be cliticized to the IMPF verb by some speakers. ¹ None of these aspectual markers may

¹ Mitchell (1978, pp. 238-241) points out a progressive or habitual aspect construction with 9ammaal or the bi-Imperfect and an object preceded by the preposition fi "in." This kind of an association between aspect and oblique case is a recurrent feature across languages, as noted by Anderson (1977).
appear with the bi-IMPF. ASP PRED$_2$ + PRED$_2$ are the only verb sequences in EA that are not either AUX + PRED, or complex sentences where a COMP or CONJ at the clause boundary is optionally omitted.

3.10. Questions

The interrogative mood and the declarative mood are subdivisions of the indicative mood in EA. Interrogative sentences show the same pattern of tense marking in AUX described in this chapter for declarative sentences. AUX does not change in locus in yes/no questions, which differ from statements in having a rising intonation. Interrogative sentences with a question-word need not differ from declarative sentences in intonation,\(^2\) and the Q-word is not necessarily fronted; however, fronting of Q-words for emphasis does occur.

Yes/no questions differ from declarative sentences in intonation.

(118) a. huwwa Ø ſaatir
  he AUX clever
  PRES

He's clever.

b. huwwa Ø ſaatir?
  he AUX clever
  PRES

Is he clever?

---

2. Abdel-Massih et al. (1979, p. 222) describe two intonation patterns for Q-word interrogative sentences. Q-word sentences may be given the same intonation contour as declarative sentences, but this is considered less polite than the following contour:

Ø areet | ik-kitaab-da leeh?
Why did you read this book?
Rising intonation marks the (?) mood in a yes/no question, and signals the hearer to assent or dissent. Yes/no questions often appear with tags:

(119) il-balad 0 kibrit awi, miʃ kida?
the-town AUX grown much NEG so
PRES PERF 3fs

The town has grown a lot, hasn't it?

(120) il-9aɾabiyya 0 gahza dilwa't walla la'?
the car AUX ready now or no:
PRES

Is the car ready now, or not?

The response to a yes/no question may be affirmative to signal assent, and negative to signal dissent, when the question is negative:

(121) 0 maʃuftuuʃ?
AUX NEG-you-saw him
PRES PERF 2ms-PRO

Didn't you see him? (You didn't see him?)

(122) aywa, 0 maʃuftuuʃ
yes AUX NEG-I-saw him
PRES PERF 1s PRO

Yes, I didn't see him.

(123) la', 0 ʃuftu(h)
no, AUX I-saw him
PRES PERF 1s PRO

No, I saw him.

But the responsives may also agree in polarity with the accompanying reply.

The unmarked word order for sentences with Q-words is the same as for corresponding declarative sentences:
(124) a. Ø $aaft miin?
   AUX saw who
   PRES PERF 3ms Q
   Who did he see?

b. miin Ø $aaftu?
   who AUX saw-him
   Q PRES PERF 3ms PRO
   Who saw him?

The following examples of sentences with Q-words are adapted from Mitchell (1956, pp. 49-53; 1962, pp. 112-149):

(125) Ø biiti9mil eeh dil-wa’t?
   AUX you-do what now
   PRES bi-IMPF 2ms Q
   What are you doing now?

(126) kunt Hatuxrug imta?
   AUX you-gonna-leave when
   PAST Ha-IMPF 2ms Q
   When were you going to leave (go out)?

(127) inta kunt raayiH feen?
   you AUX going where
   ms PAST ACT PART ms Q
   Where were you going?

(128) Ø $uft miin?
   AUX you-saw who(m)
   PRES PERT 2ms Q
   Who(m) did you see?

(129) Ø Hatgahhiz is-$ufra is-saa9a kaam?
   AUX you-gonna-prepare the-table the-hour how-many
   PRES Ha-IMPF 2ms Q
   At what time are you gonna set the table?

(130) Ø mabiyištaŋaluš leeh?
   AUX NEG-they-working why
   PRES bi-IMPF 3 pl Q
   Why aren't they working?
What color did you want it?

Q-words may sometimes be fronted for emphasis; I refer the reader to Mitchell and to Abdel-Massih et al. (1979), pp. 222-228) for a discussion of such sentences.

My concern in this section is to show how NEG in interrogative sentences differs from NEG in declarative sentences. In interrogative sentences, the locus of NEG is the same, but the constituency of AUX differs optionally from the constituency of NEG in declarative sentences, as follows:

Gamal-Eldin (1967, p. 87) gives the following examples (adapted here):

(132) maṣufṭiiš Hadd fil beet.
NEG-you-saw anyone at house
PRES PERF 3ms

You didn't see anyone at the house.

With an end-rise intonation, this sentence is a question:

(133) Didn't you see anyone at the house?

In these negative questions, the initial ma- of the discontinuous NEG ma---š may be omitted:

(134) Šuṭṭiiš Hadd fil beet?
NEG-you-saw anyone at house
PRES PERF 3ms

Didn't you see anyone at the house?

This optional omission of ma- does not occur in NEG declarative sentences.
Mitchell (1956, p. 50; 1962, p. 115) states that some questions have a -§ suffix (in present tense sentences with a PRED) that is not to be identified with the -§ of the discontinuous NEG:

(135) 9andak§ sagaayir?
     -with-you cigarettes
     PRES

Do you have any cigarettes?

Mitchell interprets such sentences as affirmative in polarity; the -§ is then an optional Q-marker. Whether -§ is part of the discontinuous NEG, or a separate Q-marker, it constitutes an optional variation that is correlated with sentence mood.

In "rhetorical" or "queclarative" sentences (see Sadock 1974), the NEG marker may remain unattached. Abdel-Massih et al. (1979, p. 137) gives the following examples (here adapted):

(136) mi§ Hazzartak?
     NEG-AUX I-warned-you
     PRES PERF 1s PRO

Didn't I warn you?

(137) mi§ ti'uum takullak lu'ma?
     NEG-AUX you-get-up you eat (you) morsel
     PRES IMPF 2ms IMPF 2ms PRO

Won't you get up and eat a bite?

Wise (1975, p. 6) cites the following:

(138) mi§ ultilak kida?
     NEG-AUX I-told-you so
     PRES PERF 1s PRO

Didn't I tell you so?

Unattached NEG is optional in these "queclarative" negative questions.

Earlier in this chapter we have seen how person-subject is marked in AUX, in inflections of KWN, and in subject pronouns in AUX.
There is a second optional feature of interrogative sentences in EA that is distinct from declarative sentences; and this optional feature involves independent subject pronouns.

An independent pronoun that agrees with an NP subject may precede this subject in a question:

(139) huwwa il-walad šaṭir?
  he the-boy clever

Is the boy clever?

(140) hiyya il-bint šaṭra?
  she the-girl clever

Is the girl clever?

There are also interrogative sentences in which the sentence-initial pronoun is always third person masculine singular, and does not agree with the subject:

(141) huwwa inta bitiṣrab ahwa?
  he you drink coffee

Do you drink coffee?

(142) huwwa ihna niruuḥ dilwaṭ?
  he we so now

Are we going now?

These pronouns are confined to PRES tense sentences; in PAST or FUTURE tense, an inflection of KWN appears in AUX. They are not confined to yes/no questions; Harrell et al. (1963, p. 33.1) gives the following example:
In sum, all the syntactic differences between interrogative and declarative sentences outlined here are optional, and all involve features marked in AUX. A speaker may choose to distinguish interrogative sentences solely by intonation, tags, and Q-words, or he may employ one of the above optional contrasts in PRO or NEG to signal interrogation.

3.11. Conclusions

In this chapter I have outlined the syntactic structure of indicative sentences in EA, with reference to the syntactic categories SUBJECT, AUX, PREDICATE, and ADVERBIAL. I have defined the predicator types $\text{PRED}_1$ and $\text{PRED}_2$, and given an account of NEG attachment that depends on these definitions. I have specified the inventories of these categories, and described the semantics of tense/aspect in EA. I have outlined the syntactic structure of yes/no and Q-word questions in EA, and described certain optional features marked in AUX whereby interrogative sentences may differ from declarative sentences. We turn now to an analysis of non-finite sentences in EA, which lack the pattern of tense-marking in AUX that we have seen in these indicative sentences.
4.1. Introduction

In Chapter 3, we surveyed the syntactic structure of simple indicative sentences in EA—declarative and interrogative sentences. Indicative sentences are finite sentences; in them, a range of tense distinctions are marked in AUX, and this temporal reference is used to execute a claim that the functional structure under the scope of the tense operator states a true proposition. This claim is bound by the question operator in interrogative sentences. In this chapter, we will briefly survey the three non-finite moods in EA—the imperative, subjunctive, and conditional. Imperative and subjunctive sentences in EA have no AUX node, and have no tense marking. Conditional sentences in EA have an AUX node, but the AUX that appears in these conditional sentences differs in several respects from the AUX node in indicative sentences. Only PAST tense is marked in AUX in COND sentences, and this PAST tense has a semantic role that differs greatly from the role PAST tense plays in IND sentences. Tense marking in IND sentences marks something as a fact, as realis; PAST tense marking in COND sentences marks something as not a fact, as irrealis. Irrealis sentences describe hypothetical situations rather than real situations, and these sentences are non-finite.
4.2. IMPERATIVE Sentences in EA

IMP sentences in EA lack the contrast between AUX and PRED that appears in IND sentences. Akmajian et al. (1979, p. 43) equate imperatives in English with $V^2$, a level of predicate structure in indicative sentences in English. Imperatives in EA (and in many other languages) constitute a morphological class that is distinct from the verb forms that appear as non-finite predicators. EA has two non-finite verbal inflections: one of these is the imperative; the second is the IMPF, which appears in SBJT and COND sentences and in non-finite embedded clauses. EA IMP sentences lack an AUX-PRED distinction, and have a single sentence-level constituent marking functions. This syntactic category we may term IMP PRED. IMP PRED is the sole required category in IMP sentences; SUBJ and ADV are optional.

An example of the IMP inflection of a CCC root is:

(1) Root: KTB ("write")

a. iktib!  b. iktibi!  c. iktibu!
IMP ms  IMP fs  IMP pl
Write! (ms)  Write! (fs)  Write! (pl)

Morphological imperatives occur only in the affirmative, as in many languages (see Jelinek 1979). Negative IMP sentences employ the SBJT, and will be described in Section 4.3.

Optional syntactic categories in IMP:

(2) (inta)  iktib  (ig-gawaab)  (dilwa't)!
you m.s.  write  the-letter  now
SUBJ  IMP ms  DO

(OBJ is not a syntactic category, but a sub-sentential constituent that may appear in IMP PRED, as in PRED.)
I interpret IMP PRED as distinct from AUX or PRED in indicative sentences because: (a) it is a distinct morphological class, (b) NEG is not marked there, and (c) neither tense nor aspect are marked there. Aspect may be marked in IMP sentences by the IMP inflection of the aspectual verbs described in the last chapter:

(3)  

<table>
<thead>
<tr>
<th></th>
<th>a. ifḍal</th>
<th>iktib!</th>
<th>b. u'9ud</th>
<th>iktib!</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>stay</td>
<td>write</td>
<td>sit</td>
<td>write</td>
</tr>
<tr>
<td></td>
<td>IMP ms</td>
<td>IMP ms</td>
<td>IMP ms</td>
<td>IMP ms</td>
</tr>
</tbody>
</table>

Keep on writing!  
Keep on writing!

In (3), a sequence of two IMP forms appears, corresponding to the PRED verb sequences that occur with these aspectual verbs. There are other IMP IMP verb sequences, when the first verb is a verb of motion, such as the following: RWH "go"; XRG "go out"; DXL "enter"; and T9L "come" (this last is a suppletive root that appears in IMP only). These IMP sequences may optionally be interrupted by wi "and":

(4)  

<table>
<thead>
<tr>
<th></th>
<th>a. ruuH</th>
<th>idris'</th>
<th>b. ruuH</th>
<th>wi</th>
<th>idris!</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>go</td>
<td>study</td>
<td>go</td>
<td>and</td>
<td>study</td>
</tr>
<tr>
<td></td>
<td>IMP ms</td>
<td>IMP ms</td>
<td>IMP ms</td>
<td>IMP ms</td>
<td></td>
</tr>
</tbody>
</table>

Go study!  
Go and study!

Mitchell (1962, p. 93) notes that the IMP form ib'a/-i/-u may precede another verb in the IMP to convey a delayed order:

(5)  

<table>
<thead>
<tr>
<th></th>
<th>qaHHini</th>
<th>is-sa9a</th>
<th>sitta</th>
<th>wi</th>
<th>ib'a</th>
<th>hatli</th>
<th>mayya</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wake-me</td>
<td>the-hour</td>
<td>six</td>
<td>and</td>
<td>become</td>
<td>bring me</td>
<td>water</td>
</tr>
<tr>
<td></td>
<td>IMP ms</td>
<td>PRO</td>
<td>IMP ms</td>
<td>IMP ms</td>
<td>IMP ms</td>
<td>PRO</td>
<td></td>
</tr>
</tbody>
</table>

suxna 9ašaan il-Hilaa'ā  
hot for the-shaving

Wake me at six o'clock and then bring me hot water for shaving.

The IMP itfadḍal "please" may also appear before a second IMP:
(6) itfaqqal istirayyaH!
please rest
IMP ms IMP ms

Please sit down.

Or "please" may be expressed in ADV:

(7) istanna $wayya, min faqlak
wait little please
IMP 2ms PP (ADV)

Please wait a moment.

Other IMP may not occur immediately before a second IMP:

(8) a. *i'ra iktib
read write
IMP ms IMP ms

b. i'ra wi iktib!
read and write
IMP ms IMP ms

Read and write!

If the conjunction appears between an IMP that may be used to mark aspect and a second IMP, there is a meaning difference:

(9) a. ifdal wi 'iktib!
stay and write
IMP ms IMP ms

b. u'9ud wi 'iktib!
sit and write
IMP ms IMP ms

Stay and write!
Sit down and write!

A large class of roots may appear in the IMP before a verb in the IMPF (an embedded clause):

(10) a. it9allim tiktib!
learn you-write
IMP ms IMPF 2ms

b. it9awwid tiktib!
get-used-to you-write
IMP ms IMPF 2ms

Learn to write!
Get used to writing!

With ib'a, itfaqqal, or an initial directional IMP, a sequence of two IMPs and a non-finite verb may appear:

(11) ruuH it9allim tiktib!
go learn you-write
IMP ms IMP ms IMPF 2ms

Go learn to write!
There are ditransitive IMP sentences with derived causative verbs:

(12) kattib il-walad id-dars!
write (caus.) the-boy the-lesson
IMP ms

Make the boy write the lesson!

The verb KWN "be" which marks tense in AUX in IND sentences, appears (rarely) in the IMP inflection.

(13) kuun mu'addab! Be polite! (ms)
kuuni mu'addaba! " (fs)
kuunu mu'addabiin! " (pl)

4.3. The SUBJUNCTIVE Mood: the IMPERFECT Verb Paradigm

Jespersen (1924, Chapter XXIII) offers the following characterizations of sentence mood: the indicative is the "fact mood"; the imperative is the "will-mood"; and the subjunctive is the "thought-mood," and observes that the subjunctive is a "non-committal mood" as compared to the "downright statement" of an independent indicative sentence. Sentences in the subjunctive mood in EA are not asserted; like imperative sentences, they do not carry the tense-marking (in an AUX node) that IND sentences do.

In Chapter 3, the IMPERFECT verb paradigm was given, and the contrast between durative and non-durative roots was described. For non-durative verbs, the IMPF is always SBJT. I use the term "subjunctive" here to cover non-finite embedded clauses as well as dubitative independent sentences.

The IMPF may also appear in the second of two conjoined clauses, by conjunction reduction:
There are other contexts where the IMPF may replace the Ha-IMP, where prospective aspect need not be specified:

(15) bukra Ø aktib ig-gawabaat
tomorrow AUX I-write the-letters
PRES IMPF 1s

Tomorrow I write the letters.

4.3.1. Independent Non-finite Sentences with the IMPF

Subjunctive sentences, like imperative sentences, are non-asserted. Since English has no independent sentences in the SBJT mood, EA SBJT sentences must be translated with various other non-finite and non-asserted constructions: infinitival and modal clauses, etc.

The IMPF paradigm for a "regular" CCC root is here repeated:

(16) DRS "study"

1 adris 1 pl nidris
2m tidris 2 pl tidrisu
2f tidrisi 3 pl yidrisu
3m yidris
3f tidris

(Other verb classes have different vowels.) Examples of subjunctive sentences from Wise (1975) and Mitchell (1956):

(17) yalla niruuH! (18) yiruuH fi daHya
oh-god we go he-go in hell
VOC IMPF 1 pl IMPF 3ms

Let's go! Let him go to hell!
The subjunctive may also be used to give orders:

(22) inta tiktib ig-gawaab dilwa't!
    you write the-letter now

You (are to) write the letter now!

When the IMPF is used as an imperative, the COMP ma- may be attached initially:

(23) ma-tiktibu(h)!
    COMP-you write it

You write it!

EA, like many other languages, excludes sentences in which NEG occurs with the IMP inflection, and uses a NEG SBJT to convey a prohibition:

(24) matiktibuus!
    NEG-you-write-it
    IMPF 2ms

Don't write it!

(25) matimšiiš 9al-Haššiš, ya walad!
    NEG walk on-the-grass VOC boy
    IMPF 2ms

Don't walk on the grass, boy! (Mitchell 1956, p. 69).

Negative imperatives may also be constructed with the IMPF preceded by a verb or a particle translated "beware" or "beware lest":

(19) a'9ud hina
    I-sit here
    IMPF 1s

Am I to sit here?

(20) il-amiiš yitgisil
    the-shirt be-washed
    IMPF 3ms

The shirt is to be washed.

(21) maHaddiš yistaga mil maktabi wi ana ḡaayib
    nobody use my office and I absent
    IMPF 3ms ACT PART ms

Nobody is to (let nobody) use my office while I'm away.
The IMP inflection of KWN "be" was described in Section 4.1. There is also an IMPF paradigm of KWN, given in Chapter 3, that is never used to mark present tense. SBJT sentences are non-finite, unasserted; tense is not marked.

A man is to be, should be wise (prudent).

Could he (would he) be at home now?

Many durative verbs refer to states or acts of wanting, thinking, desiring, being able, preferring, etc. Since durative verbs in the IMPF are ambiguous as to IND/SBJT mood, sentences with the IMPF of a durative verb are also ambiguous:

I can/could go.

Does he want /would he like/ to drink a cup of coffee?

With the bi-IMPF (habitual aspect) these sentences are unambiguously IND mood:
I usually can go.

He usually likes to drink a cup of coffee in the morning.

In these examples, the vertical line marks the clause boundary. Note that the verb in these non-finite embedded clauses is in the IMPF.

4.3.2 The IMPF in Non-finite Embedded Clauses in EA

The term "subjunctive" derives from Latin grammar, and was originally applied to a verbal inflection found in subordinate clauses--subjoined clauses. This non-finite mood is often used, across languages, to record indirect contexts.

In EA, non-finite embedded clauses may employ the IMPF. Embedded clauses in EA will be the topic of Chapter 5; my purpose here is only to show that they are one environment in which the IMPF occurs. Examples:

(34) kaan 9aawiz | yidris (35) Ø riği | yiruuH
   AUX wanting | study | AUX consented | go
   PAST ACT PART ms | IMPF 3ms | PRES PERF 3ms | IMPF 3ms

He wanted to study. He consented to go.

(36) kaan 9aleek | tiruuH
   AUX on-you | go
   PAST PREP-PRO | IMPF 2ms

You had to go.
They intend to go to the market.

Their purpose is to talk to him.

I could have gone.

These examples show a variety of matrix clause predicators that select a non-finite complement with a verb in the IMPF. The root KWN may appear in the IMPF in an embedded clause also:

The boss wants you not to be lazy.

Thus, in both independent SBJT sentences, and in non-finite embedded clauses, the IMPF of KWN appears, rather than the pattern of KWN marking a range of tense distinctions in AUX that we have seen in IND sentences in Chapter 3.

NEG attachment to the IMPF verb is also shown in (40). Since SBJT clauses lack an AUX node, NEG appears in PRED, where it attaches. PRED in SBJT clauses is always verbal, since KWN in the IMPF inflection appears if no verbal PRED is present. Thus, SBJT clauses have no AUX constituent.
4.4. Conditional Sentences in EA: Irrealis

In Chapter 3, the use of KWN in AUX to mark tense was described—tense as realis. Here we will look at sentences in which PAST tense is used paradoxically to mark irrealis. In her pioneering paper on irrealis in Uto-Aztecan, Steele (1975a) pointed out an interesting cross-language phenomenon: many genetically unrelated languages use PAST tense to mark hypotheticality. Compare, in English:

(41)  a. # Tom knows the answer, and he doesn't know it.
    b. # Tom knew the answer, and he didn't know it.
    c. If Tom knew the answer, and he [doesn't] know it, . . .

Tense to mark realis is employed in (41a, b); in (41c) PAST tense is used to mark irrealis. Compare also:

(42)  a. It's time we left.
    b. It's time for us to leave.

(43)  a. Would you rather I went?
    b. Would you prefer for me to go?

PAST tense in (42, 43a) corresponds to the non-finite clause in (42, 43b). PAST irrealis in EA is limited to conditional sentences:

(44)  huwwa  \[ \[ \emptyset \] kaan \] in-the-house (realis)
      he            Haaykuun  AUX

He      \[ \[ is \] was \] at home.
        \[ \[ will-be \] \] will-be

(45)  $uuf \quad iza \quad kaan \quad fil beet \quad (irrealis)
      see \quad if \quad PAST \quad in-the-house

See if he's at home (if he be).
Conditional sentences in EA employ PAST irrealis, and verbs in a variety of inflections: the IMPERATIVE, the IMPERFECT, and the PERFECT. Constructions with PAST irrealis and a verb in any one of these inflections all seem to mean the same. Of these constructions, the one employing the IMP is perhaps less frequently used.

4.4.1. Conditional Sentences with IMPERATIVE Verbs

(46) kunt ruuH Ŝuufu(h)
PAST go see-him
IRR IMP 2m IMP 2m PRO

You should have gone to see him.

(47) kuntu idrisu id-dars, ya wilaad
PAST study the-lesson VOC boys
IRR IMP pl

You should have studied the lesson, children.

These sentences are modal, and are used to point out a failed past obligation.

PAST irrealis may occur before the IMP of the root KWN, "be":

(48) kunt kuun hina badri
PAST be here early
IRR IMP ms

You should have been here early.

Some speakers consider such constructions awkward, and prefer to use the IMP of the verb "become":

(49) kunt ib'a hina badri
PAST be(come) here early
IRR IMP ms

You should have been here early.

But this seems to be a matter of idiolect. There are no negative conditional sentences with PAST irrealis and an IMP verb. This was to
be expected, since NEG is excluded from IMP sentences also. The NEG analogue of these sentences employs the IMPF paradigm.

4.4.2. Conditional Sentences with IMPERFECT Verbs

In these sentences, PAST irrealis appears with the second non-finite verb paradigm, the IMPF. Both affirmative and negative constructions occur. Compare the following with (46) above:

(50) kun tiₘuH tiₘuufu
      PAST go see him
      IRR IMPF 3ms IMPF 3ms PRO

You should have gone to see him.

(PAST irrealis + IMPF, like PAST irrealis + IMP, can be translated indifferently "could have, would have, should have.")

(51) makuntiₚ tiₘuH tiₘuufu
      NEG-PAST go see-him
      IRR IMPF 2ms IMP 2ms PRO

You shouldn't have gone to see him.

Here NEG attaches to KWN, just as it attaches in AUX in IND sentences. These examples show that COND sentences in EA have an AUX node, but this AUX differs from the AUX of IND sentences.

Across languages, AUX and PRED co-vary with sentence type. AUX in IND sentences marks a range of tense distinctions, PRES, PAST, and FUTURE, and thereby marks realis; AUX in COND sentences marks PAST tense only, and thereby marks irrealis.

NEG attachment differs optionally in the COND AUX from AUX in IND sentences. NEG may attach to PAST irrealis, or it may follow it:
(52) makan\$ Hiseen yiruuH yi\$uuufu  
NEG-PAST go see-him  
IRR IMPF 3ms IMPF 3ms PRO  

Hussein shouldn't have gone to see him.

(52) kaan Hiseen mayruH\$ yi\$uuufu  
PAST NEG-go see-him  
IRR IMPF 3ms IMPF 3ms PRO  

Hussein shouldn't have gone to see him.

And with a non-verbal predicate:

(54) law kaan Hiseen mi\$ za91aan, kunt ana akuun mab\$uu\$a  
if PAST NEG angry PAST I be happy  
IRR IRR IMPF Is  

If Hussein weren't angry, I'd be happy.

(55) law makan\$ Hiseen za91aan, kunt ana akuun mab\$uu\$a  
if NEG-PAST angry PAST I be happy  
IRR IRR IMPF  

If Hussein weren't angry, I'd be happy.

Unmarked word order in comparable indicative sentences is:

(56) makan\$ Hiseen raayi\$ yi\$uuufu  
NEG-PAST going see-him  
AUX ACT PART ms IMPF 3ms PRO  

Hussein wasn't going to see him.

(57) makan\$ Hiseen za91aan  
NEG-PAST angry  
AUX  

Hussein wasn't angry.

Sentences (54, 55) show the COND AUX (PAST irrealis) preceding the IMPF of the verb KWN, whereas there are no KWN KWN sequences in IND sentences. Abdel-Massih et al. (1979, p. 55) give the following example:
If they had heeded your advice, their life would now be hell.

Speakers prefer to have the SUBJ appear between COND AUX and the IMPF of KWN here, to interrupt KWN KNW sequences, and some prefer to substitute "become" for "be":

(59) ....kaanit Hayathum \{tib'a\} gaHiim
    PAST life-their {ba'it} hell
    IRR {became}
    {IMPF 3fs}
    {PERF 3fs}

....their life would have become hell.

Again, this appears to be a question of individual variation.

4.4.3. Conditional Sentences with INDICATIVE Verbs

The syntax of conditional sentences will be described in some detail in Chapter 6, on modality in EA. I want to point out here that in the apodasis (conclusion) clause of a counterfactual conditional sentence, PAST irrealis + IMPF and PAST irrealis + PERF (IND) are in free variation; there is no semantic contrast. This alternation between IMPF and PERF is shown in (59) just above, and in the following:
If she were going to Egypt, I would go with her.

In the protasis clause of (60), PAST irrealis appears before an IND verb in the Ha-IMPF (prospective aspect).

If the children had been tired, they wouldn't have told us.

NEG attachment is optional on or after PAST irrealis + PERF also:

If the children had been tired, they wouldn't have told us.

In (60), we saw PAST irrealis before a verb in the Ha-IMPF. Some speakers permit PAST irrealis before FUTURE tense in existential
conditional sentences. The following examples are from Harrell et al. (1963, pp. 19.2-19.4):

(63) iza makanit$ gaabit $wayyit 9ee$ sa makan$ if NEG-PAST brought little(of) bread then NEG-PAST
IRR PERF 3ms
IRR

Haykuun fii(h) Haaga nakulha
AUX in (it) thing we-ate-it
FUTURE PERF 1 pi PRO

If she hadn't brought a little bread, there wouldn't have been anything for us to eat.

(64) kaan Haykuun fii(h) infagaar
PAST AUX in-it explosion
IRR FUTURE PREP

There would have been an explosion.

However, speakers I consulted again preferred to avoid these KWN KWN sequences, using "become" in the IMPF:

(65) kaan yib'a infagaar
PAST be(come) explosion
IRR IMPF sms

There would have been an explosion.

4.4.4. Variability in the Syntax of Conditional Sentences

I have pointed out here some of the considerable variability in the syntactic structure of conditional sentences in EA. Other variation will be described in Chapter 6, where the reader will be referred to Harrell et al. and to Abdel-Massih et al. for information on still more variation between speakers with respect to conditional sentences. It is interesting that conditional sentences in English are also quite variable.

There are marginal syntactic phenomena in English that suggest that for some speakers, conditional sentences have an AUX that is
distinct from the AUX that appears in asserted sentences, just as the
AUX that appears in questions is distinct. For such speakers, an
analysis that recognized a conditional mood and a conditional AUX would
be required. For example, in English, some speakers say:

(66) If Jack were only here . . .

In non-conditional sentences, third person singular requires was. Also,
some speakers use sentence-initial irrealis without "if":

(67) a. Were he to ask me . . .
    b. Had you asked me . . .

NEG attachment differs here:

(68) a. *Weren't he to ask me . . .
    b. *Hadn't you asked me . . .

There are also speakers who say

(69) If you had've asked me, I would've gone.

Had never precedes have elsewhere. Only modals in AUX precede have, and
had here is marking modality, irrealis. This is comparable to kaan
before Haykuun in (63, 64).

Speaker variability of this kind suggests that we have reached
the limits of an (idealized) synchronic study.

4.5. Summary

I have surveyed here the three kinds of non-indicative sentences
in EA: imperative, subjunctive, and conditional sentences. Imperative
and subjunctive sentences have no AUX node, and a PRED category that
diffs from the PRED of indicative sentences; the root KWN "be" appears
in non-finite IMP and IMPF inflections in these two sentence types.
Imperative sentences exclude NEG, and NEG is marked in PRED in
subjunctive sentences. Conditional sentences are highly variable across speakers, and have an AUX category that differs from the AUX of IND sentences. The COND AUX marks only PAST tense (irrealis), and NEG-attachment is optional; for some speakers, KWN KWN sequences occur. Verbs in any inflection appear in COND sentences. A comparison of AUX and PRED in these sentence types with AUX and PRED in IND sentences shows how AUX and PRED co-vary across sentence type in the language.
5.1. Introduction

This chapter will be concerned with how sentences may be constituents of other sentences in EA. An embedded sentence may be defined as a predicate and its arguments that constitute all or a part of an argument to another predicate, or that is adjoined adverbially to another sentence. We will not be concerned here with conjoined sentences, where pairs of sentences of equal syntactic rank are linked by conjunctions such as wi "and," aw "or," laakin "but," etc. The reader is referred to an excellent inventory of conjunctions and their usage in EA in Abdel-Massih et al. (1979, pp. 58-75) and to Wise (1975, Chapter XII) for a transformational account of conjoined sentences.

Conjoined sentences in EA may or may not carry AUX:

(1) makanuu$ 9awziin ni'abilhum wi makanuu$ NEG AUX wanting we-meet-them and NEG AUX PAST 1 pl ACT PART pl IMPF 1 pl-PRO PAST 1 pl

9awziin nikallimhum wanting we-talk (to) them ACT PART pl IMPF 1 pl-PRO

We didn't want to see them and we didn't want to talk to them.

(2) ruuH kallimu wi 9iraf is-sabab go talk (to) him and learn the-cause IMP ms IMP ms PRO IMP ms

Go talk to him and find out the reason.
Conjoined clauses, like independent sentences, are finite or non-finite.

Our concern here is the role of AUX in subordinate clauses in EA. When a sentence is a constituent of another sentence, there are certain dependencies between the predicate of the matrix clause and the syntactic structure of the embedded clause. These dependencies between the matrix predicate and the structure of the embedded clause are semantic—specifically, I will argue, modal in nature. There are lexically defined classes of predicates that select either finite or non-finite complements, and I will show that the contrast between these sets of embedding predicates is a modal one.

5.2. Relative Clauses: Finite and Non-Finite

EA, like English, has both finite and non-finite relative clauses. Consider the following ambiguous sentence in English:

(4) I'm looking for a dog that talks (a talking dog).

On one reading, the speaker reports that he is looking for a particular talking dog, which is lost. On the other, he reports that he would like to find such a creature, if one exists. Quine (1966, p. 183) noticed such sentences, and pointed out that some languages, such as Spanish, differentiate between such sentences by the use of the subjunctive in relative clauses.
English may differentiate between the two readings of (4) by prosodic features, but this distinction seems to be optional. There are paraphrases of the two readings, such as:

(6) a. I'm looking for a dog that is (actually) able to talk.
   b. I'm looking for a dog that would be able to talk.

This contrast is not the same as that between restrictive and non-restrictive relative clauses; both (6a) and (6b) are restrictive relative clauses.

With a modal, (6b) corresponds to the Spanish subjunctive.

English may also use infinitival complements for NPs:

(7) a. I need a cat to catch all these mice around here.
   b. I need a cat that would catch all these mice around here.
   c. *I need a cat that catches all these mice around here.
   d. I need the cat that catches all these mice around here.

Non-finite relative clauses in English (infinitival and modal), as in (7a) and (7b), state a desired or required attribute of the NP head of the clause. Finite relative clauses (like appositive gerunds) may refer either to desired or to known attributes, as in (4). Compare:

(8) a. I'm looking for a dog that talks.
   b. I'm looking for the dog that talks.
   c. I'm looking for this dog that talks.
   d. I'm looking for a dog to talk with.

Here (8a) has an indefinite article, and the sentence is ambiguous between known and desired attributes (of a known or desired entity).
When the attribute is known to the speaker but not to the hearer, and a particular entity is referred to, (8a) may be used. When the attribute is known to both, (8b) is used. With the added convention that the speaker will tell the hearer more about the referent of the clause, (8c) may be used like (8a). In using (8d), the speaker has no particular referent in mind, and the attribute is a desired one. That finite relative clauses are ambiguous between known and desired attributes is shown in the following:

(9)  a. # I'm looking for a man who speaks Burushaski, but I don't know that he does.

b. # I'm looking for a man who speaks Burushaski, but I don't care if he does.

When a speaker describes his role in a play, where he has knowledge that the character he plays does not, (9a) is possible. A situation in which the speaker's inner feelings are in conflict with his purposes could be described by (9b); or (9b) is fine when the relative clause describes a known attribute, and the attribute is used merely to pick out the referent.

In Chapter 4, independent sentences with the IMPF with a subjunctive, jussive, or modal meaning were described:

(10) yiruuH fi daHyaf
    go in hell
    IMPF 3ms

    Let him (may he, etc.) go to hell!

EA has relative clauses with the (non-finite) subjunctive IMPF, and relative clauses with (finite) indicative verb forms. Before giving examples of this contrast, I will describe the structure of relative clauses in EA in general.
5.2.1. The Relative Particle *illi*

There is said to be only one relative pronoun in EA, which is closely related to the definite article:

(11) ir-raagil il-xaarig
the-man the-going out
DET NP DET ACT PART ms

the man going out, the man who is going out

(12) ir-raagil illi Ø xaarig
the man (who) AUX going out
DET NP - PRES ACT PART ms

the man who is going out

These are both definite NPs; (11) is a noun compound; (12) is a noun + relative clause, when the ACT PART is the non-verbal predicate of that clause. Only relative clauses that modify definite NPs have the relative pronoun:

(13) raagil xaarig
man going out
NP ACT PART ms

man going out, man who is going out

(14) *raagil illi xaarig
man (who) going out
NP ACT PART ms

Compare also:

(15) Ø sufnt il-bint illi kaanit bitnaqdaft il-oogda
AUX I-saw the-girl (who) AUX cleaning the room
PRES PERF 1s PAST bi-IMPF 3fs

I saw the girl who was cleaning the room.

(16) Ø sufnt bint kaanit bitnaqdaft il-oogda
AUX I-saw girl AUX cleaning the room
PRES PERF 1s PAST bi-IMPF 3fs

I saw a girl who was cleaning the room.
(17) *Ø  šuft  bint illi  kaanit  bitnaqadaf  il'ooqa
AUX  I-saw  girl  (who)  AUX  cleaning  the-room
PRES  PERF  ls  PAST  bi-IMPF  3fs

(These sentence types will be discussed further in 5.7, on perception
verb complements.) English has no relative pronoun in infinitival
relative clauses, but it does have a relative pronoun in modal relative
clauses, even with an indefinite NP:

(18) a. I'm looking for someone to help me.
b. I'm looking for someone who would help me.
c. I'm looking for the one who helps me.

Compare:

(19) Ø  badawwar  9ala  Hadd  yisa9idni
AUX  I-search  for  someone  help-me
PRES  bi-IMPF  ls  PRES  bi-IMPF  3ms  PRO

I'm looking for someone to help me. (Non-finite.)

(20) Ø  badawwar  9ala  waaHid  Ø  biysa9idni
AUX  I-search  for  one  AUX  helps-me
PRES  bi-IMPF  ls  PRES  bi-IMPF  3ms-PRO

I'm looking for one who helps me. (Finite.)

(21) Ø  badawwar  9ala  ir-raqgil  illi  kaan  biysa9idni
AUX  I-search  for  the-man  (who)  AUX  helping-me
PRES  bi-IMPF  ls  PRES  PAST  bi-IMPF  3ms  PRO

I'm looking for the man who was helping me.

In non-finite relative clauses with non-verbal predicates, the copula
KWN appears in the IMPF (subjunctive) inflection:

(22) il-waaHid  illi  yikuun  badri  hina  yixdul  il-awwal
the-one  (who)  be  early  here  enter  the-first
IMPF  3ms  IMPF  3ms

The one who gets here early gets in first.

When PAST tense appears in the matrix clause, past tense may appear
in a finite relative clause:
He was looking for (someone) who was helping him.

But PAST tense does not appear in a non-finite relative clause:

He was looking for someone to help him.

Compare also:

I'm looking for the bear that dances. (known attribute)

I'm looking for a dancing bear. (desired attribute)

I looked for a dancing bear. (desired attribute)

PAST tense may occur in non-finite relative clauses in EA, in irrealis constructions that are translated into English with "would have, should have, could have." These irrealis constructions occur in conditional sentences in EA, as described in Chapters 4 and 6.

Whoever drove well, we would have given a prize. (desired attribute)
At the beginning of this section on relative clauses, it was noted that in English non-finite relative clauses state desired or required attributes, while finite relative clauses are ambiguous between known vs. desired attributes. In EA, non-finite relative clauses (with a verb in the IMPF) state desired attributes, and finite relative clauses (with a verb in an indicative inflection) state known attributes. But there are some relative clauses where the durative IMPF verb is ambiguous between finite and non-finite readings, since the verb does not take the prefix bi- in the imperfective aspect. These verbs were discussed in Chapter 3. Many such verbs are deontic:

(29) Ø badawwa₃ 9ala dibba ti'dar tur'uṣ
AUX I-search for bear can dance
PRES bi-IMPF 1s PREP IMPF 3fs IMPF 3fs

I'm looking for a bear that can dance.

This sentence in EA is ambiguous between known and desired attributes, just as the English translation is. The semantic contrast between known attributes and desired attributes is a modal one: epistemic vs. deontic modality. Later in this chapter I will point out a parallel contrast in predicate complements, and I will argue for the modal nature of this contrast between finite and non-finiteness in all embedded sentences.

5.2.2. The Arguments of Relative Clause Predicates

When the noun that a relative clause modifies corresponds to an object argument of the relative clause predicate, that object is omitted from the relative clause in English:
a. This is the man that they saw.

b. This is the book that she brought me.

In EA, these object arguments are not deleted from relative clauses:

(31) aho (ir-raagil illi ʂafuuh
here the-man (who) they-saw-him
PRES PERF 3pl PRO
Here's the man that they saw.

(32) aho ik-kitaab illi gabituuli
here the book (who) she-brought-it-to-me
PRES PERF 3fs-PRO-PREP-PRO
Here's the book that she brought me.

(33) ir-raagil illi kallimtak 9aleeh kaan
the-man (who) I-spoke-to-you about-him AUX
PRES PERF 3ms PRO PREP PRO PAST
filHafla at-the-party
The man I spoke to you about was at the party.

When the noun that the relative clause modifies corresponds to the subject of the relative clause, that predicate argument does not appear in the relative clause in English, and usually does not appear in the relative clause in EA:

(34) Here's the man who saw the accident.

But person subject is marked in verbal, possessive prepositional and nouns of volition predicates in EA, and therefore person subject is marked in relative clauses with these predicates:

(35) aho (ir-raagil illi ʂaaf il-Hadsa
here the-man (who) he-saw the-accident
PRES PERF 3ms
Here's the man who saw the accident.
Where the predicate of the relative clause does not mark person subject (and no inflection of KWN in AUX is present) an independent PRO subject may optionally appear:

(36) is-sitt illi (hiyya) ∅ min iskindiriyya ∅
the-lady (who) she AUX from Alexandria AUX

safrat irmarriH
traveled yesterday
PERF 3fs

The lady who (she's) from Alexandria left yesterday.

Accordingly, I conclude that there is no anaphoric relationship between illi and any argument of the predicate of the relative clause, and that illi is not a pronoun but a determiner for sentences dominated by NP and right Chomsky-adjoined to a definite NP, as follows:

(37) ir-raagil illi ∅ kallimtak 9aleeh kaan fil Hafla.

The man who I spoke to you about was at the party.
Compare:

(38) kaan fil Hafla raagil ø kallimtak 9aleeh

(There) was at the party a man I spoke to you about.

With a noun compound:

(39) kaanit šaatit ir-raagil iz-za9laan

She had seen the angry man.

Or relative clause with a definite NP head:
(40) kaanit šaafit ir-raaqil illi kaan za9laan

She had seen the man who was angry.

In a corresponding present tense sentence with illi, a subject pronoun is required in the relative clause:

(41) huwwa Ø šaayif ir-raaqil illi huwwa Ø za9laan
He sees the man who is angry.

Relative pronouns in Indo-European are thought to be historically related to demonstratives and determiners. In EA, illi still functions as a determiner and not as a pronoun, since it is not anaphorically bound to NPs in the matrix clause.
5.3. Predicate Complements in EA

Both English and EA have finite and non-finite predicate complements. Some languages do not; when a language lacks this contrast, the predicate complements are all non-finite.¹

5.3.1. Complementizers in EA

There are several COMPS, of which the most frequently occurring is inn, used with both finite and non-finite complements. inn is optional where the matrix and embedded clauses have the same subject. With some predicates, inn is optional; with others, it is required (see Wise 1975, Chapter V). I have not attempted to inventory EA predicates with respect to this contrast. There is considerable variation between speakers in regard to required/optional inn, and in this matter (as elsewhere) a native speaker's judgment is critical. I have divided predicates into two classes: (1) those that require/allow inn, and (2) those that exclude it. Here there seems to be a consensus among speakers. Where inn is excluded there are three possibilities: (1) another COMP may appear, (2) there is no COMP at the clause boundary (these two cases will be described in this chapter), and (3) there is no clause boundary between two verbs in some sentences. Such verb sequences occur when the first verb is KWN in AUX, and when there is a sequence of aspectual verb plus predicational verb; these two cases were described in Chapter 2. Later in this chapter (5.3.2.4) we will also see embedded

¹. Luiseno is an example of such a language. See Hyde (1971) and Steele et al. (in press).
clauses with KWN in the IMPF (subjunctive) and a verb in the PERF; this is the \( V^n \) system of EA.

I will now describe the contrast between finite and non-finite PRED complements in EA, beginning with finite complements.

5.3.2. Finite Predicate Complements: Propositional Attitudes

Finite complements have AUX, indicative verbs or non-verbal predicates, and correspond in syntactic structure to independent sentences. The predicates that select such complements all refer to speech or cognition. These "dicto-cognitive" predicates belong to a semantic class having to do with knowledge: believing, knowing, saying, recalling, concluding, etc. I will call these complex sentences with dicto-cognitive matrix predicates about knowledge, and finite complements, epistemic complex sentences.

5.3.2.1. The COMP inn in Finite Clauses. This COMP appears in most finite PRED complements in EA. When there is no NP subject of the complement, a pronominal suffix marking the subject is attached to the COMP:

(42) ana kunt 9aarif innu kaan raah li-s-suu'
    I AUX knowing that-he AUX went to-the-market
    PAST ACT PART ms COMP-PRO PAST PERF 3ms

I knew that he had gone to the market.

(43) Ø iftakart innaha makanit s malzuuta
    AUX I-thought that-she NEG AUX happy
    PRES PERF 1s COMP-PRO PAST 3fs

I thought that she wasn't happy.
In all these complex epistemic sentences, the predicate concerns knowledge and the embedded clause is finite. It is possible for an epistemic PRED to take a finite modal complement which in turn takes a non-finite complement:

(49) fikrit [inn Ø mumkin] inn il-waaHid yi9mil kida
idea-of that AUX possible that somebody do so
COMP PRES COMP IMPF 3ms
Ø biynarfizni
AUX making-me-nervous
PRES bi-IMPF 3ms PRO

The idea (that it's possible) that anyone would do such a thing makes me nervous.
I heard that it's necessary for him to go with her (that he has to go with her).

These modal constructions will be discussed in Chapter 6, which deals with modality in EA.

5.3.2.2. The COMP koon in EA. This COMP is infrequently heard. It is a verbal noun of the root KWN: "being." It occurs only with finite complements, that is, in epistemic constructions. It may co-occur with inn; it may always be replaced by inn, but not vice versa. It takes suffixed pronouns, as inn does, and it often occurs with non-verbal PREDS: (see Abdel-Massih et al., 1979, pp. 151-152):

(51) Ø ahamm Haaga koonu Ø mu'addab
    AUX most- thing innu AUX polite
    important

The most important thing is that he is polite.

5.3.3. Non-Finite Complèments in EA: Non-Propositional Attitudes

In these complex sentences, the matrix predicates also form a semantic class; they refer to volition: wanting, forcing, commanding, obliging, etc. Not all are dicto-cognitive; some refer to coercive or anti-coercive acts (make, let). The non-finite complements they select have a verb in the IMPF (subjunctive) and lack AUX. I will call these complex sentences deontic constructions.
5.3.3.1. The COMP inn with Non-Finite Complements. This COMP appears in many deontic complex sentences:

(52) is-sitt Ø 9awza innak tiruuH li-s-suu' the-lady AUX wanting that-you you-go to-the-market

The lady wants you to go to the market.

When COMP-PRO is not present, the pronominal suffix marking the subject of the embedded clause is attached to the matrix PRED:

(53) is-sitt Ø 9awzak tiruuH li-s-suu' the-lady AUX wanting-you you-go to-the-market

The lady wants you to go to the market.

Other deontic constructions with inn:

(54) Ø biyHibb innu yil9ab kutšeena AUX he likes that-he play cards

He likes to play cards.

(55) kaan naawi innu yizurna AUX intending that-he he-visit-us

He intended to visit us.

(56) kaanu talabu innu yimši imbaarih AUX requested that-he leave yesterday

They had requested him to leave yesterday.

(57) Ø ṣagga9tu innu yidris kull yoom AUX I-encouraged-him that-he study every day

I encouraged him to study every day.

(58) Ø iddaali furšit inni aruuH maشرح AUX he-gave-me chance-of that-I I-go Egypt

He gave me the chance to go to Egypt.
The boss wants you to be here early.

These examples show how predicates that take non-finite complements share semantic features such as volition or coercion.

5.3.3.2. Non-Finite Complements without inn: 9aṣaan. Some speakers allow the COMP inn after certain deontic predicates, and some do not:

(60) a'dar [inni aruuH I-can that-I I-go IMPF 3s [COMP-PRO] IMPF 3s

I can/could go.

(61) Ø xalla [inn il-mudarrisa tiz9al AUX he-made/let that the-teacher (f) get mad PRES PERF 3ms [COMP] IMPF 3fs

He made the teacher (get) mad.

(62) kaan biyHawwil [innu yiktibu bil 9arabi AUX trying that-he he-write it in-the Arabic PAST bi-IMPF 3ms [COMP-PRO] IMPF 3ms-PRO

He was trying to write it in Arabic.

But there are some deontic predicates that exclude inn for all speakers. With most of these, the conjunction 9alaṣaan, 9aṣaan "in order to" optionally introduces the non-finite complement. These predicates are all verbs of motion, and describe a preliminary act that the agent performs in order to be able to perform the act he intends:

(63) Ø ḥawwah [9aṣaan yidris AUX went-home in-order-to study PRES PERF 3ms [CONJ] IMPF 3ms

He went home [in order to] study.

so he could
He went out to buy the food.

He was going to (Egypt to) see the pyramids.

In (65), if the object maṣr intervenes, the CONJ 9aṣaan is required; otherwise it is optional. Other verbs of motion that occur in these purposive constructions are: GY', "come"; NZL "go down"; TL9 "go up"; 'WM "get up" and DXL "enter."

5.3.3.3. Other Conjunctions that Introduce Non-Finite Complements. Abdel-Massih et al. (1979, pp. 64-69) list other less frequent conjunctions that may introduce clauses that have a verb in the subjunctive (IMPF). These include laHsan / aHsan / la "lest":

Study lest you fail the test.

I will show them the documents lest they (should) think that I am lying to them.

Here laHsan/aHsan is a subordinating conjunction; it may also serve as a coordinating conjunction, where it means "because." Another subordinating conjunction that occurs in deontic constructions is maHma:
Don't believe him, no matter what he says.

I'll finish this paper no matter what he does.

5.3.3.4. The IMPF (Subjunctive) of KWN and Verb Sequences

(Vn) in Non-Finite Complements. Sentence (59) above showed subjunctive KWN with a non-verbal PRED, a locative:

The boss wants you to be here early.

IMPF KWN may occur with other non-verbal PREDs, such as ADJ:

The boss wants you not to be lazy.

And with participles:

I was afraid he might be asleep.

The director [movie] wants you to be walking in the street in this scene.
The director wants the door to be closed in this scene.

Subjunctive KWN does not precede a verb in the bi-IMPF or Ha-IMPF in non-finite embedded clauses, but it may precede a verb in the PERF, marking perfective aspect. IMPF KWN plus a verb in the PERF inflection form a verb sequence that is comparable to the $V^n$ system of English, as described by Akmajian et al. (1979). Compare:

(74) Ø 9awzak ti'ara ik-kitaab

AUX wanting-you read the-book

PRES ACT PART ms PRO IMPF 2ms

He wants you to read the book.

(75) kaan 9awzak ti'ara ik-kitaab

AUX wanting-you read the-book

PAST ACT PART ms PRO IMPF 2ms

He wanted you to read the book.

(76) kaan 9awzak tikuun areet ik-kitaab

AUX wanting-you be read the-book

PAST ACT PART ms PRO IMPF 2ms PERF 2ms

He wanted you to have read the book (already).

Similarly:

(77) Ø xuft innu yikuun katab ig-gawaab

AUX I-feared that-he be written the-letter

PRES PERF ls COMP-PRO IMPF 3ms PERF 3ms

I was afraid that he \[
\begin{cases}
\text{would} \\
\text{might}
\end{cases}
\]

have written the letter already.

In Chapter 3 it was noted that there are two (non-AUX) verbs which mark continuative aspect, and may occur with another verb in the simple
clause. The second member of such a verb sequence is always in the IMPF. In non-finite embedded clauses, both verbs in the verb sequence are in the IMPF:

(78) ir-ra'iis Ø 9aawiz innak tifḍal tistagażal
the-boss AUX wanting that-you continue work
PRES ACT PART ms COMP-PRO IMPF 3ms IMPF 3ms

hina innahardha
here today

The boss wants you to keep on working here today.

(79) il-mudaaris Ø ʂagga9 fatHi innu yu'9ud
the teacher (m) AUX encouraged Fathi that-he continue
PRES PERF 3ms COMP-PRO IMPF 3ms

yizaakir
study
IMPF 3ms

The teacher encouraged Fathi to keep on studying.

5.4. On the Modality of Complex Sentences

So far in this chapter on subordination, we have looked at relative clauses and predicate complements. EA, like English, has both finite and non-finite relative clauses. There are ambiguous relative clauses in both languages, but finite relative clauses may be used to state known attributes, while non-finite relative clauses are used to state an attribute that is desired by the speaker:

(80) a. I'm looking for someone who was helping me.
    b. I'm looking for someone to help me.

Finite PRED complements are selected by a set of PRED that have to do with knowledge: believing, forgetting, concluding, etc. ("propositional attitudes"). Non-finite complements are selected by a class of PRED that have to do with volition: wanting, persuading,
forcing, etc. ("non-propositional attitudes"). This parallel in the semantics of these complex sentence types is not a coincidence, but reflects their modal nature. In the next chapter, we will look at modal constructions in EA in some detail. My claim here is that matrix clause PRED in both English and EA (and many other languages that mark tense) fall into two classes: those that take finite complements and those that take non-finite complements. The former class of PRED, epistemic, includes some PRED that mark modal notions per se: necessity and possibility. The latter class of PRED, deontic, also includes some PRED that mark modal notions per se. Some of these modal PRED occur with both kinds of complements:

\begin{verbatim}
(81) miš mumkin innu kaan byištəqal fil beet
    NEG AUX POSS that-he AUX working at home
    PRES COMP-PRO PAST bi-IMPF 3ms

    It's not possible that he was working at home.

(82) miš mumkin innu yıštəqal fil beet
    NEG AUX POSS that-he working at home
    PRES COMP PRO IMPF 3ms

    It's not possible for him to work at home.
\end{verbatim}

Where the complement is finite, the construction is epistemic; where the complement is non-finite, the construction is deontic. This contrast between possible that and possible for is the same as that seen in other PRED that occur with both types of complements. For example, the verb tell in English may be used to report on a claim (tell that) or to report on an order (tell to):

(83) He told me that he was tired.

(84) He told me to go.
Parallel sentences in EA:

(85) Ø ali innu kaan tab9aan
     AUX he-told-me that-he AUX tired
     PRES PERF 3ms PRO COMP-PRO PAST

    He told me that he was tired.

(86) Ø ali inni aruuH
     AUX he-told-me that-I I-go
     PRES PERF 3ms PRO COMP-PRO IMPF Is

    He told me to go.

I take these meaning contrasts as evidence for the modal nature of complex sentences proposed here. We will return to this question in Chapter 6.

5.5. Embedded Questions

Questions in both EA and English carry AUX, but they are non-asserted. In the functional structure of questions, a question operator, marking the interrogative mood, embeds a tense operator. Embedded questions are bound by the matrix clause. In English, the verb ask may be used to report on a question (a request for information) or to report on a request (for something else):

(87) He asked me if George were here.

(88) He asked me to lend him some money.

In (87), the COMP if suspends assertion; were marks irrealis.

Compare:

(89) 'is'alhu iza kaan 9aawiz yistanna walla la'
     ask-him if PAST wanting wait or no
     IMP ms COMP IRR ACT PART ms IMPF 3ms

    Ask him if wants to wait or not.
Ask him to carry those boxes.

Embedded yes/no questions with iza "if" and PAST tense used as irrealis correspond in structure to protasis (antecedent) clauses of conditional sentences, to be described in Section 6.4 of the following chapter. My purpose here is just to point out that they are all non-asserted. Other examples:

(91) Ø 9aawiz a9raf iza inta kunt areet ik-kitaab
    AUX wanting I-know if you PAST read the-book
    PRES ACT PART ms IMPF 1s ms IRR PERF 2ms

    walla la'
or no.

    I want to know whether you read the book or not.

(92) $uuf iza kaan fil beet
    see if PAST at home
    IMP ms IRR

    See if he's at home.

Question-word sentences are also non-asserted. (As noted in Chapter 3, question-words in EA are usually not fronted.) Embedded clauses of this type have no COMP, as is the case with embedded orders:

(93) Ø ma9rafØ raaH feen, wi Ø ma9rafØ
    AUX NEG-I-know went where and AUX NEG-I-know
    PRES IMPF 1s PERF 3ms PRES IMPF 1s

    $aaf miin
    saw who
    PERF 3ms

    I don't know where he went, and I don't know who he saw.
The reader is referred to Wise (1975, pp. 72-74) and to Abdel-Massih et al. (1979, pp. 146-148) for additional information on embedded questions in EA.

5.6. Adverbial Clauses: the COMP ma

The COMP ma appears as the second element in a number of compound conjunctions, many temporal, that adjoin adverbial clauses to main clauses. These adverbial clauses may be either finite or non-finite. The contrast is as follows:

(94) Ø biyidris 9arabi abl ma yiruuH ma$r
AUX studying Arabic before go Egypt
PRES bi-IMPF 3ms (that) IMPF

He's studying Arabic before going to Egypt. (whenever)

(95) Ø kalliultu abl ma Ø mişi
AUX I-spoke-to-him before AUX left
PRES PERF 1s PRO (that) PRES PERF 3ms

I spoke to him before he left. (when)

(96) Hakuun fi iskindiriyya yoom ma titgawwiz
I'll-be in Alexandria day that she-marry
AUX FUT COMP IMPF 3fs

I'll be in Alexandria the day she marries. (whenever)

(97) kunt fi iskindiriyya yoom ma Ø itgawwizit
AUX in Alexandria day that AUX she-married
PAST COMP PRES PERF 3fs

I was in Alexandria the day she got married. (when)

(98) mätraH ma truuH, aruuH
where (that) you-go I-go
COMP IMPF 2ms IMPF 1s

Wherever you go, I (will) go.
He found the wallet where he left it.

These last examples are adapted from Abdel-Massih et al. (1979, pp. 152-155) who list 14 compound conjunctions that introduce adverbial clauses and have the COMP ma as a second element. Wise (1975, p. 149) has this example:

(100) feen ma tiruuH, miš Hatlaa'î zayyu
where that you-go NEG AUX gonna-find like-him
COMP IMPF 2ms PRES Ha-IMPF 2ms

Wherever you go, you won't find anyone like him.

These writers and Gamal-Eldin (1967, p. 101) point out that ma may precede or follow the NP subject of the adverbial clause:

(101) a. ruuH abl ma il-maHal yi'fil
   go before (that) the-store close
   IMP ms COMP IMPF 3ms

   Go before the store closes.

b. ruuH abl il-maHal ma yi'fil
   go before the-store (that) close
   IMP ms COMP IMPF 3ms

   Go before the store closes.

In these adverbial clauses also, the finite/non-finite contrast appears to be a modal one, but it is not quite the same contrast as that described earlier for embedded clauses. Whenever, wherever refer to possible times and places, while when, where refer to real times and places. In the foregoing examples, the possible times and places are related to the FUTURE, while the real times and places are related to the PAST. In the next chapter, the neutralization of the tense/modality contrast in FUTURE sentences will be discussed.
Compare the following English sentences:

(102) a. Catch it before it melts.
b. Catch it before it has melted.
c. Catch it before it can melt.

(103) a. He caught it before it melted.
b. He caught it before it had melted.
c. He caught it before it could melt.
d. He caught it before it would have melted.

In (102) the speaker does not claim that something is melting, but that it can, may, or will. In (103), the speaker does not claim that something melted, but that it could have, might have, or would have. PAST tense temporal clauses in English do not necessarily refer to an actual event, as shown in (103), although they ordinarily do:

(104) a. He'll get to heaven before I do.
b. He got to Dallas before I did.

Other predicates marking a non-volitional change of state (melt, get cold) permit reference to PAST (unrealized) possibility:

(105) a. They rescued her before she went crazy.
b. They rescued her before she starved.
c. They rescued her before she drowned.

while other predicates do not:

(106) a. They rescued her before she phoned her parents.
b. They rescued her before she could phone her parents.

Temporal conjunctions such as before and abl ma "before" mark a function that binds the tense operator in the adverbial clause (PRES or PAST tense in English, PAST tense in EA). By using the PERF, EA also does not mark a contrast between real and potential past time events in temporal adverbial clauses:
5.7. Perception Verb Complements (PVC) and Haal ("Condition") Clauses in EA

Akmajian (1977) pointed out that PVC in English lack AUX, and argued for the non-sentential nature of PVC. He assigned to perception verbs such as see and hear the following subcategorization frames:

\[(111)\]

a. \[___ NP\] We saw [the moon rising over the mountain]\_NP

b. \[___ NP VP\] We saw [the moon]\_NP [rise over the mountain]\_VP

There is no parallel contrast in PVC types in EA. All PVC appear to have the structure shown in (111b). The subjunctive IMPF does not occur in PVC in EA, just as the modals and infinitival to do not appear in PVC in English. Any verbal predicates that occur in PVC in EA appear in the bi-IMPF, the inflection described in Chapter 3 as comparable to an -ing participle in English. (For some durative verbs, the indicative/subjunctive contrast is lost, and bare IMPF forms do
appear in PVC. PVC are non-finite, and are one of two environments in the language where the bi-IMPF occurs without AUX; the second is the Haal clause, which I am about to describe. The appearance of bi-IMPF forms without AUX in these clause types constitutes evidence that bi-IMPF forms mark aspect alone, and not tense, as I argued in Chapter 3.

The grammatical term Haal comes from traditional Arabic grammar. Abdel-Massih et al. (1979, p. 105) define Haal as follows: "A Haal is a modifier which indicates the state or condition of the noun modified at the time of the main clause." In the following examples the sentence-final predicates are termed Haal modifiers:

(112) a. salwa Ø naamit ga9aana
   AUX slept hungry
   PRES PERF 3fs ADJ fs

   Salwa fell asleep hungry.

b. farida Ø saafit 9umay miHtaar
   AUX saw perplexed
   PRES PERF 3fs PAS PART ms

   Farida saw Omar perplexed.

c. 9ali Ø rigi9 biy9ayyaṭ
   AUX returned weeping
   PRES PERF 3ms bi-IMPF 3ms

   Ali returned weeping.

These subordinate predicates are not preceded by AUX; they are non-finite complements. In Arabic, the conjunction wi, "and," and a pronoun subject of the Haal predicate may appear, and the modifying clause is still non-finite:
These non-finite Haal clauses are distinct from a finite conjoined sentence:

(114) 0  $uft  9ali wi  kaan biy9ayyat
        AUX  I-saw  Ali and  AUX  crying
        PRES  PERF 3fs  PAST  bi-IMPF-3ms

I saw Ali, and he was crying.

A Haal construction consists of a PRED modifying a noun which is an argument of the matrix sentence. This noun may be the object of a perception verb, as in (113b). The subcategorization frame

[___ NP PRED] therefore applies:

(112) b. fariida  0  $aafit  9umar miHtaar
        AUX  saw  Omar perplexed
        PRES  PERF 3fs  PAS PART ms

Farida saw Omar perplexed.

But in EA the bi-IMPF is the only verbal form that appears in Haal constructions:

(115) 0  $uft  9ali biy9ayyat  [___ NP PRED]
        AUX  I-saw  crying
        PRES  PERF 1s  bi-IMPF 3ms

I saw Ali crying.
Akmajian (1977) cites Chomsky on the structural ambiguity of a sentence such as:

(116) We saw the boy eating the ice cream cone.

This sentence may be interpreted as including either a PVC or a relative clause, with no relative pronoun (who). In EA, a sentence such as

(117) ana $\emptyset$ ṣaayif raagil biyšalli
I AUX seeing man praying
PRES ACT PART ms man bi-IMPF 3ms

is also structurally ambiguous: (1) Haal modifier or PVC; and (2) relative clause. (Recall that indefinite NP heads of relative clauses in Arabic exclude illi.) In English, there is a contrast between

(118) a. I see a man, praying.
    b. I see a man praying.

But without such a pause, (118b) might be 3-ways structurally ambiguous. Haal constructions in EA require no pauses; there may be other prosodic features that differentiate them from relative clauses or PVC, but I am not able to distinguish them.

If the head of a relative clause in Arabic is definite, illi must appear:

(119) ana $\emptyset$ ṣaayif ir-raagil illi $\emptyset$ biyšalli
I AUX seeing the-man who AUX praying
PRES ACT PART ms PRES bi-IMPF ms

(Rel. clause)

I see the man who is praying.

These sentences have no structural ambiguity. And, if a sentence is non-PRES tense, a form of KWN may appear to mark tense:
I saw a man who was praying.

Compare:

I saw \{ a man \} praying.

But (117) above is at least two-ways structurally ambiguous.

The contrast between relative clauses on the one hand, and Haal/PVC on the other in EA is clear. Whether Haal may be distinguished from PVC requires further investigation. Akmajian (1977) points out that the following sentence cannot contain a relative clause:

(122) a. We didn't hear anyone playing the piano.
b. *We didn't hear anyone, who was playing the piano.

A comparable sentence in EA is clearly not a Haal construction:

(123) a. We didn't hear anyone singing.
b. *We didn't hear anyone, and he singing.

If we take the expansion shown in (123b) as diagnostic of a Haal construction, then we may conclude that there is a difference between Haal modifiers and PVC in EA, and that some sentences, such as (117) above, are 3-ways structurally ambiguous: between relative clause, Haal, and PVC constituents.
Akmajan (1977, p. 452) notes the "often cited" contrast between:

(124) a. I saw the moon.
    b. I saw that the moon was rising.

Perception verbs plus finite clauses appear to be cases of semantic extension. See that, hear that, feel that, sense that, perceive that are epistemic constructions; this accords with the account of the modal nature of complex sentences proposed here. See that can often be paraphrased by realize, etc.; hear that by learn, etc. In EA the verb SM9 "hear" may take finite complements:

(125) \( \emptyset \) simi9t il-awlaad biy\'annu
    AUX I-heard the children singing
    PRES PERF 1s bi-IMPF 3pl

    I heard the children singing. \[ \text{Haal} \]
    \[ \text{PVC} \]

(126) \( \emptyset \) simi9t inn il-awlaad kaanu biy\'annu
    AUX I-heard that the children AUX singing
    PRES PERF 1s COMP PAST bi-IMPF 3pl

    I heard that the children were singing.

Compare also:

(127) \( \emptyset \) simi9t inn il-awlaad \( \emptyset \) biy\'annu
    AUX I-heard that the children AUX singing
    PRES PERF 1s COMP PRES bi-IMPF 3pl

    I heard that the children are singing. (i.e., can sing, have learned to sing)

The verb $WF "see" may also appear in epistemic constructions, but its use is more limited. Compare:

(130) \( \emptyset \) suft 9ali biyi\'rab hasan
    AUX I-saw 9ali beating
    PRES PERF 1s bi-IMPF 3ms

    I saw Ali beating Hassan.
$SWF + inn$ is confined to inferential contexts, but to things that the
subject of $SWF$ senses directly himself:

(132) $Ø$  ṣuft  inn  9ali  $Ø$  ḍarab  haṣan
AUX  I-saw  that  AUX  beat
PRES  PERF  Is  COMP  PRES  PERF  3ms

I felt that Ali insulted him. (?)

Thus some perception verbs in EA take finite complements; these
constructions are epistemic. But perception verbs and non-finite
complements are related to epistemic constructions also, because of the
inherent link between perceiving and knowing. Seeing is not believing,
but there is a very close relationship.

The contrast between predicates that select finite complements
and predicates that select non-finite complements, with resulting
epistemic vs. deontic constructions, thus does not apply to perception
verbs and their complements, in both EA and in English, because of the
necessary link between perception and knowledge. The structural
ambiguities that occur between PVC, relative clauses, and Haal construc-
tions in EA also parallel structural ambiguities in English.

5.8. Summary

In this chapter I have described various kinds of embedded
or subordinate clauses in EA. Relative clauses are either finite or
non-finite, depending upon whether the attribute they state is known
or required/desired. Predicate complements are finite or non-finite
depending upon whether the predicate has to do with knowledge or with
volition/coercion. Constructions of the former type are epistemic; constructions of the latter type are doentic. Some predicates take either type of complement, with corresponding differences in meaning. Temporal adverbial clauses present a more complex picture. There are non-finite (subjunctive) clauses in EA, referring to possible events; English uses modals or present tense in comparable clauses. Temporal adverbial clauses that mark past tense in both languages are ambiguous between actual and potential past time events. Perception verbs in both languages have non-finite complements that are related to relative clauses and to appositive predicates. There are in each language a few instances of perception verbs (with extended meanings) with finite clauses; these are epistemic constructions. I conclude that sentences that embed other sentences are necessarily modal constructions. In the following chapter, we will examine constructions that mark modality proper in EA—that is, the notional categories of possibility and necessity—in some detail, and I will claim that the account of the modal structure of complex sentences presented here will give us an explanation of modal ambiguity across languages.
CHAPTER 6
MODALITY IN EGYPTIAN ARABIC AND IN UNIVERSAL GRAMMAR

6.1. Introduction

The syntactic category AUX is a sentential constituent where various sentence operators in the functional structure of the sentence are marked. Among the set of sentence operators that may be marked in AUX in universal grammar, the grammar of EA elects to mark only TENSE and S NEG. On a broad interpretation of the term modality, all sentence operators may be termed modal. On a narrower definition, only sentence operators that mark the notional categories of necessity/possibility and obligation/permission are called modal. The notional categories necessity/possibility are related to the speaker's judgment as to the truth of some proposition he is entertaining; these notional categories of natural language have been captured in modal logic by the modal operators $\Box$ (NEC) and $\Diamond$ (POS). Obligation/permission are notional categories that have to do with the speaker's judgment as to some agent's freedom to act; this is the area of study of deontic logic, a sub-discipline of modal logic, where OBL/PER have been recognized as a pair of modal operators parallel to NEC/POS. These pairs of modal operators share a highly interesting property, pointed out by von Wright (1968): within each pair, each operator may be defined in terms of the other, with two instances of negation, as follows:
(1) a. What is necessarily true is not possibly not true, and vice versa;

and

b. What one is obliged to do, one is not permitted not to do, and vice versa.

In this chapter, I will propose that these two sets of modal operators may be reduced to a single pair in the functional structure of sentences in universal grammar, since they are mutually exclusive in distribution. We will look at the syntactic structures that are used to mark modal notions in EA in some detail, and compare them to modal sentences in English. I will argue that in both languages, sentences marking epistemic modality have a functional structure in which a modal operator embeds a tense operator; and that sentences marking deontic modality have a functional structure in which a modal operator directly embeds a predicational function and its arguments. This view of modality in universal grammar will also enable us to give an account of the ambiguity of modal sentences in both EA and English.

EA has no AUX modals. Modality is marked in a number of syntactic structures in EA that are parallel to certain modal sentences in English and other languages. In the linguistic literature on EA, these modal constructions are often termed "modals" or "auxiliaries" apparently because they often may be translated by sentences with AUX modals in English. These modal sentences in EA fall into two classes: (1) sentences with modal adverbs; and (2) complex sentences where modality is marked by some predicate in the higher or matrix clause. Since AUX is a syntactic category that is distinct from ADV (see Chapter 2 above) and since AUX is a constituent of the simple clause,
these modal adverbs and matrix clause modal predicates are excluded from AUX in EA.

6.2. Adverbs that Mark Modality in EA

Some but not all adverbs mark modality across languages.

Compare:

(2) a. Possibly, John left. POS(T(L(j))
    b. John left quickly. T((Q(L))(j))

In (2a), possibly marks a modal operator that takes the tensed (T) sentence John left under its scope. In (2b), quickly takes leave (the predicate) only under its scope. This difference in adverbial scope may be seen in

(3) a. It's possibly true that John left.
    b. *It's quickly true that John left.

Modal adverbs in EA include:

(4) ta pháp makuntis za9laan
    certainly NEG-AUG angry
    ADV PAST Is

Of course I wasn't angry.

(5) gàliban Ø HayruH is-sinima
    probably AUX he-will-go (to) the-movies
    ADV PRES Ha-IMPF 3ms

He'll probably go to the movies.

(gàliban also may be translated "often times.") These modal adverbs in EA are epistemic.

6.3. Complex Modal Sentences in EA

Modality is most frequently expressed in EA in complex sentences, where modality is marked in a verb, noun, participle, preposition, etc., that functions as a predicate in the matrix clause.
The complementizer inn (with suffixed person subject pronoun) may optionally appear at the clause boundary in these sentences, demonstrating that they are embedding constructions rather than modal-verb or verb-verb sequences within the simple clause. This matrix clause may embed either a finite clause (epistemic modality) or a non-finite clause (deontic modality).

6.3.1. Verbs in Modal Sentences in EA

Verbs that mark modality in EA are durative verbs that take the IMPF in both indicative and subjunctive (see Chapter 2 above).

Examples:

(6) ZHR: "appear"

Ø yižhar (innu) kaan 9aayiz yizurna
AUX it-seems that-he AUX wanting he-visit-us
PRES IMPF 3 ms COMP-PRO PAST ACT PART ms IMPF 3ms-PRO

It seems that he wanted to visit us.

(7) MKN: "be possible"

Ø yimkin (innaha) Ø ibtadit tifham
AUX it-is-possible that-she AUX she-began she-understand
PRES IMPF 3ms COMP-PRO PRES PERF 3fs IMPF 3fs

Maybe she began to understand.

(8) GWZ: "be possible, be permitted"

Ø yiguuz (innaha) Ø Hatkuun bitzaakir
AUX it-is-possible that-she AUX will-be she-is-studying
PRES IMPF 3ms COMP-PRO PRES AUX FUT bi-IMPF 3fs

Maybe she will be studying.
(9) $\text{HH}$ "be possible, be correct"

\[
\begin{array}{llll}
\text{Ø} & \text{yigaHH} & (\text{innu}) & \text{Haykuun misaafir} \\
\text{AUX} & \text{it-is-possible} & \text{that-he} & \text{will-be going away} \\
\text{PRES} & \text{IMPF 3ms} & \text{COMP-PRO} & \text{AUX FUT ACT PART ms}
\end{array}
\]

Maybe he will be going away.

Sentences (6-9) are epistemic modal sentences, since the matrix verb expresses the speaker's judgment on the truth of the proposition expressed in the embedded clause; and this embedded clause is finite. There are also deontic sentences with some of these verbs.

(10) GWZ: "be possible, be permitted"

\[
\begin{array}{llll}
\text{Ø} & \text{mayguzlak$} & \text{ti9addi is-\text{-aari9}} \\
\text{AUX} & \text{NEG-is-permitted-to-you} & \text{you-cross the-street} \\
\text{PRES} & \text{IMPF 3ms-PREP-PRO} & \text{IMPF 2fs}
\end{array}
\]

You are not permitted to cross the street.

The vertical line marks the clause boundary, where COMP-PRO optionally occurs.

(11) MKN: "be possible, be permitted"

\[
\begin{array}{llll}
\text{Ø} & \text{yimkinlak} & \text{taaxud il-\text{-aariyya}} \\
\text{AUX} & \text{is-permitted-to-you} & \text{you-take the-car} \\
\text{PRES} & \text{IMPF 3ms PREP-PRO} & \text{IMPF 2ms}
\end{array}
\]

You are allowed to drive the car.

In these sentences, the higher verb marks OBL/PER (the speaker's judgment as to some agent's freedom to act) and the embedded clause is non-finite; therefore, the construction is deontic. These sentences, with the suffixed PREP li, "to, for," parallel English sentences with "possible for":

(12) a. It is not possible for you to cross the street.
    b. It is possible for you to drive the car.
Deontic "possible for" contracts with epistemic "possible that," as in the EA sentences (7-9) above.

6.3.2. Active Participles

There is no verb in the colloquial EA that is commonly used to express necessity. There is a verb LZM "need," but most speakers do not use LZM with a sentential complement:

(13) Ø yilzamna filuus
    AUX is-lacking-to-us money
    PRES IMPF 3ms-PRO NP

We need money.

The ACT PART of LZM, however, is the most commonly employed marker of necessity in modal sentences:

(14) kaan lazmu yisaafir maʃr
    AUX is-NEC-to-him he-travel (to) Egypt
    PAST ACT PART ms PRO IMPF 3ms

He had to travel to Egypt.

(15) Ø laazim Ø biyiʃtaʃal kitiir
    AUX NEC AUX he-works much
    PRES ACT PART ms PRES bi-IMPF 3ms

It must be that he works a lot.

The root GWZ also appears in an ACT PART that is used to mark modality:

(16) Ø gaayiz kaan biyiʃmaʃran kitiir
    AUX POS AUX he-practices much
    PRES ACT PART ms PAST bi-IMPF 3ms

Maybe he was practicing a lot.

There is also the ACT PART baayin "it seems":

(17) Ø baayin 9alʃeh (innu) Ø ʃaab
    AUX it-seems on it that-it AUX difficult
    PRES ACT PART ms PREP-PRO COMP-PRO PRES

It seems difficult.
6.3.3. Passive Participles

The root LZM also appears:

(18) ḫuwwa malzuum
AUX he is-obliged
PRES PRO PAS PART ms IMPF 3ms

He is obliged to work.

(19) kaan masmuuH
AUX is-permitted
PAST PAS PART ms IMPF 3ms

He was permitted to visit the town.

(20) ḫ mamnuu9
AUX is-forbidden
PRES PAS PART ms IMPF 2ms

You are forbidden to smoke here.

(21) kaan mafruu9
AUX is-required
PAST PAS PART ms IMPF 2ms

You were required to finish the work.

(22) ḫ mumkin ḫ Hatzurni bukhra
AUX is-possible AUX she-will-visit-me tomorrow
PRES PAS PART ms PRES Ha-IMPF 3fs PRO

She may visit me tomorrow.

(23) ḫ ma9ruuf innu ḫ raagil ḫani
AUX is-known that-he AUX man rich
PRES PAS PART ms COMP-PRO PRES

It is known that he is a rich man.

Sentences (18-21) are deontic, with a non-finite embedded clause; (22, 23) are epistemic, with a finite embedded clause.

6.3.4. Other Complex Modal Sentences in EA

Modal sentences also employ other predicators. There are nominals:
You must see the Nile.

It was necessary for you to come.

It is necessary for you to come.

Prepositional modal sentences include:

You had to go.

You must either fix dinner or wash the dishes.

All these complex modal sentences are deontic in modal force, with non-finite embedded clauses.

6.4. Conditional Sentences in EA: Irrealis

Conditional sentences were introduced in Chapter 3, where I pointed out that AUX and PRED are not the same in COND and IND sentences. In this section, I will describe the syntactic structure of COND sentences in more detail, and comment on the modality of these sentences. Conditional sentences have two clauses: "if" (the protasis)
and "then" (the apodasis). When using a conditional sentence, the speaker does not assert either of these clauses or their conjunction, but something else: that there is a connection between the two sentences.  

(If (p) is true, then (q) is true.)

Across languages, modal constructions appear in conditional sentences. In this section, we will look at some modal constructions in conditional sentences in EA and English. Across languages, there are two major varieties of conditional sentences: simple conditionals and counterfactual conditionals.

(29) If you ask me, I'll go.  
(30) If you had asked me, I would have gone. 

In (29) the agent's options (at the time of the utterance) are still open; in (30), they are closed.

Conditional sentences in EA are highly variable across individual speakers. There are three words translated "if": in, iza, law. Of these, in is perhaps the least frequently used in the colloquial. Many speakers follow the Standard Arabic pattern of using iza in simple conditionals and law in counterfactuals; some do not. There are other idiolectal variations in the syntax of these sentences. For simplicity, I will outline here the usage of a typical educated speaker, and refer the reader to Harrell et al. (1963, Chapter 19) and Abdel-Massih et al. (1979, pp. 49-58) for details on speaker variability. For comparison, English has three kinds of conditional sentences, with respect to syntactic structure:

1. Some variations: iza/in/iza in for "if" in simple conditionals; law/law inn "if," "if that" in counterfactuals.
Type A. If you ask me, I'll go.
Type B. If you asked me, I'd go.
Type C. If you had asked me, I would have gone.

Both Harrell et al. and Abdel-Massih et al. (using different terminology) would class both Type A and Type B in English as simple conditionals, with the contingency stronger in Type B, while Type C is distinguished as contrary to fact. Thus, both PRES and PAST tenses in English are said to occur in simple conditionals (differing in degree of contingency), while PAST PERFECT occurs in counterfactuals.

But the situation in English is more complicated than this. With some stative verbs and non-verbal predicates, PAST tense alone may be counterfactual:

(32) a. If you loved me (and you don't), I would go with you.
   b. If I owned this house (and I don't), I would sell it.
   c. If you were happy (and you aren't), I would know it.

In sentences with these stative predicates, use of the PAST PERFECT places the situation earlier in time, and the option stated in the apodosis is no longer open:

(33) a. If you had loved me, I would have gone.
   b. If I had owned this house, I would have sold it.
   c. If you had been happy, I would have known it.

Thus, whether conditional sentences in English with a PAST tense are simple conditionals or counterfactuals depends upon the predicate of the sentence.

The "closed option" feature of counterfactuals is also reflected in sentences that employ the PAST PROSPECTIVE in English ("was going to"): 

(34) If you had asked to borrow my car, I was going to loan (would have lent) it to you.
EA lacks the three-way split in the syntactic structure of conditional sentence types that English has. EA has one type of conditional sentence used for simple conditionals, and another type that is used for counterfactuals. For an educated speaker who consistently uses *iza* ("if") in simple conditionals and *law* ("if") in counterfactuals, the syntactic structure of these conditional sentence types is as follows:

(34) **SIMPLE CONDITIONAL** S in EA:

a. The protasis: *iza* + PAST tense + any predicator;
b. The apodasis: PRES tense + V in PROSPECTIVE aspect, or FUT tense + non-verbal predicator.

Examples of simple conditional sentences:

(35) *iza* kaan miši imbaariH, Ø Hayiwşal bukşa
if PAST PERF 3ms yesterday AUX he-will-arrive tomorrow
IRR he-left PRES Ha-IMP 3ms

If he left yesterday, he will arrive tomorrow.

(36) *iza* kaan biydarris 9arabi hina, Ø Ha'ablu
if PAST he-teaches Arabic here AUX I-will-meet-him
IRR bi-IMPF 3ms PRES Ha-IMPF Is-PRO

fi yoom mil'ayyaam
in day of-days
PREP

If he is teaching Arabic here, I'm going to meet him one of these days.

(37) *iza* kunt Hatirga9 ba9d iḏ-ḏuhr, Ø
if PAST going-to-return after noon AUX
IRR Ha-IMPF 2ms PREP PRES

Ha'ablak fi maktabak
I-will-meet-you in your-office
Ha-IMPF Is-PRO PREP

If you are going to return after noon, I'll meet you in your office.
These sentences differ from Type A sentences in English, and resemble Type B, in that PAST irrealis is required in the protasis. Irrealis is also a feature of counterfactual conditionals in both English and EA. The syntactic structure of counterfactual conditionals in EA (aside from idiolectal variations, as noted above) is as follows:

(39) a. The protasis: law + optional PAST + any predicator;
b. The apodasis: PAST + a verb in the IMPERFECT or the PERFECT (in free variation).

Examples of counterfactual conditionals in EA:

(40) law [kaan] raah, kunf [aruuh] m9aaH
if if [PAST] perf [PERF] PAST ruHt with him
[IRR] he-went 3ms IRR [I-go]
[PERF P]

If he had gone, I would have gone with him.

(41) law [kaan] biyetkallim inglizi, kunf ana
if if [PAST] he-is-speaking English [PAST I]
[IRR] bi-impf 3ms IRR PRO

afham illi huwwa 'aalu
fihimt what he said-it
understand PRO PRO PERF
understood 3ms

If he had been speaking English, I would have understood what he said.
These counterfactual conditional sentences all show an optional PAST tense (*irrealis*) in the protasis, and an obligatory PAST tense (*irrealis*) in the apodasis, followed by a verb in either the IMPF or the PERF, in free variation. PAST IMPF is **conditional**, and may be
translated "could have, would have, should have" in English, as shown in the preceding examples.2

PAST PERF, as described in Chapter 3, has a past perfective reading in non-conditional sentences:

(45) kaan katab •  ig-gawaab
    AUX written the-letter
    PAST PERF 3ms

He had written the letter (already).

But in the apodasis clause of a counterfactual sentence, PAST PERF is in free variation with PAST IMPF, as noted in Chapter 4, and has the same conditional reading:

(46) law [kunna] ṭalabna ig-gawaab, kaan il-mudiir
    if [PAST asked-for the-letter PAST the-director
         IRR PERF 1 pl IRR

{kiktibu, katabu
  write it written it

{IMPF 3ms PRO
  PERF 3ms PRO

If we had asked for the letter, the director would have written it.

A similar use of the past perfect occurred in Shakespearean English:

(47) Had you asked me, I had gone with you.

Note SUBJ/AUX inversion here, signaling non-assertion. The past

2. PAST + IMPF can sometimes be translated "would" in the sense of "used to":

fil w a 't da, kaanit tidris kull yoom
at that time AUX study every day

PAST IMPF 3fs

In those days, she would (used to) study every day.
perfect (without "if") is still used by some speakers in some styles in protasis clauses in contemporary English, but not in apodasis clauses.

6.4.1. The Syntax of Irrealis

In Chapter 4, the differences between COND and IND sentences with respect to AUX and PRED were outlined. AUX in COND sentences marks only PAST tense (irrealis) while AUX in IND sentences marks the full range of tense contrasts shown in Chapter 3. Sentential NEG in IND sentences is marked in AUX, while in COND sentences, NEG may be marked in either AUX or PRED. PRED in IND sentences includes only the IND verb paradigms, while IMP, IMPF, and IND verbs appear in PRED in COND sentences.

6.4.2. The Semantics of Irrealis

Steele (1975a, p. 217) proposed that the specialized use of PAST tense in irrealis constructions across languages is an exemplification of a semantic primitive DISSOCIATIVE in universal grammar. I would like to suggest here an alternative interpretation of the use of PAST tense in irrealis constructions in universal grammar. In a conditional sentence, the apodasis is said to follow from the protasis. This is not just a metaphor; a conditional sentence states that given the truth of the protasis (before) we know the truth of the apodasis (after); or that once event X occurs (before), event Y follows (after). This is the nature of the dependency between the two
clauses that a conditional sentence states. Therefore, the antecedent clause may be given a tense marking that shows it as earlier in time.

Recall Type A conditionals in English, employed always as simple conditionals:

(31) Type A. If you ask me, I will go.

PRES tense in the protasis is earlier in time than FUT in the apodasis. Compare:

(31) Type B: If you asked me, I would go.

Type B shows irrealis "before" by the use of PAST in the protasis. Type B is used in counterfactuals with stative predicates in English, as described above. EA requires PAST tense in the protasis of all simple conditionals, marking irrealis "before." EA requires FUTURE tense in the apodasis of all simple conditionals, while English requires FUTURE (Type A) or CONDITIONAL (Type B), to mark "after."

Each language uses the PAST PERF in counterfactuals, but very differently. It is used in the protasis in Type C in English:

(31) Type C. If you had asked me, I would have gone.

A time earlier than PAST (Type B) is here referred to since the options are now closed. Would have in the apodasis is a conditional perfect. PAST tense is optional in the protasis of counterfactuals in EA, where the counterfactual "if" law is employed. PAST PERF appears in the

3. Conditional sentences such as the following seem to be a counter-example:

If today is Tuesday, then yesterday was Monday. But the point is that the observation made in the protasis precedes the observation made in the apodasis. That is, if I have ascertained that today is Monday, then, according to this conditional, I can "predict" that if we ascertain what yesterday was, that it will in fact turn out to have been Monday.
apodasis of counterfactuals in EA, in free variation with PAST IMPF, as shown in (40-44, 46). In these counterfactuals, PAST PERF has a conditional interpretation.

Conditional sentences across languages vary widely in syntax, and not all languages employ PAST tense (irrealis) in conditional sentences. The fact that many languages do so seems to be linked to the "prior" nature of protasis clauses as compared to apodasis clauses, and to the "closed options" referred to in counterfactual conditionals. 4

6.5. Modal Operators in Universal Grammar: Modal Ambiguity

Horn (1972) noted the systematic character of the ambiguities of the "syntactic" (AUX) modals in English, and predicted that modal constructions in other languages would show parallel ambiguities. He argued that modal concepts, epistemic and deontic, have scalar ranges, and that the AUX modals show a parallel range, as follows (Horn, 1972, p. 127):

<table>
<thead>
<tr>
<th>Modal</th>
<th>Epistemic/Logical</th>
<th>Deontic</th>
<th>?</th>
</tr>
</thead>
<tbody>
<tr>
<td>can/could</td>
<td>possibility</td>
<td>permission</td>
<td>ability</td>
</tr>
<tr>
<td>may/might</td>
<td>possibility</td>
<td>permission</td>
<td></td>
</tr>
<tr>
<td>should/ought</td>
<td>possibility</td>
<td>weak obligation;</td>
<td>suggestion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>suggestion</td>
<td></td>
</tr>
<tr>
<td>must/have to</td>
<td>certainty/necessity</td>
<td>strong obligation</td>
<td></td>
</tr>
</tbody>
</table>

These parallel ranges, Horn argued, show the relatedness of the semantic concepts of epistemic and deontic modality; therefore, we might expect

4. Peter Culicover pointed out to me that counterfactuals do not necessarily mean closed options. For example:

If you had fixed the stove, I would have had supper ready by now. Here the speaker is suggesting that the stove be fixed. But she is saying that the fixing must precede the cooking.
to find modal constructions in other languages with similar ambiguity, but we should not expect to find a language with a modal construction that was ambiguous between, say, possible and strong obligation.

Horn (1972, p. 128) did not attempt to specify the nature of the relationship between the semantic concepts of epistemic and deontic ("root") modality, but commented:

In order to predict this non-occurrence of intuitively possible lexical items, it is necessary to explicitly relate epistemic and root structures, perhaps—as Newmayer suggests—by embedding the former within the latter under a causative element, if the obvious pitfalls in this approach could be avoided.

Steele (1975b, p. 47) carried out a cross-language study of modal constructions in a small sample of languages, to test Horn's prediction on what kinds of modal ambiguity are permitted in universal grammar, and concluded:

Horn's hypothesis that there is a systematic connection between root modality and epistemic modality is supported. Not all modals in these languages are ambiguous. . . . English shows the strongest tendency towards regular ambiguity. But when the modals are ambiguous, they are ambiguous in the predicted fashion.

In the introduction to this chapter, I defined the relationship between epistemic and deontic modality with reference to the functional structure of sentences. My claim is that sentences with epistemic modality have a functional structure in which the modal operator embeds a tensed functional structure, and sentences with deontic modality have a functional structure in which the modal operator embeds a non-tensed functional structure. In this section, I will show how this account of the nature of modal ambiguity provides an explanation for the fact that a language such as English has extensive modal ambiguity, and why
other languages, for example Egyptian Arabic, have relatively little modal ambiguity.

6.5.1. Ambiguity and Paraphrase Relations

In the functional structure of sentences, modal operators are sentential functions. In the syntactic structure of sentences, modality is marked in a number of ways in a given language and across languages. In 6.2-6.4, we have seen how modality is expressed in a number of sentence types in EA. Some examples of modal constructions in English will now be given for comparison, in order to arrive at some generalizations about modal ambiguity. When we compare modal constructions within a language and between languages, we will need to look at paraphrase relations between sentences.

When we know what the sentences of a language mean, we are able to decide that, for some purposes, some sentences stand in a paraphrase relationship to one another, and some do not. Perhaps no two sentences ever mean just the same, but for a given purpose some pairs of sentences may be treated as equivalent. If a sentence is ambiguous, it belongs to (at least) two paraphrase sets; that is, we can point to at least two other sentences that stand in a paraphrase relation to the ambiguous sentence, where these two paraphrases are not paraphrases of one another. In the following, I will assume that if a pair of sentences stand in a paraphrase relation, they have (at least) the same functional structure (although the reverse does not hold, since functional structure captures only a part of semantic structure).
6.5.2. Modal Ambiguity in English

English has three principal types of modal constructions; of these, two are not modally ambiguous and the third is. The modally ambiguous constructions are sentences with an AUX modal. In English, modality may be marked in the matrix clause of a complex sentence. There are complex sentences that mark epistemic modality:

(48) E matrix clause modality (POS):
  a. It is possible that he reads Arabic (script).
  b. T (POS (T (F (x, y))))

(Where T = tense.) Or, modality may be marked in the syntactic structure of the simple clause. If so, it may be marked in either of the syntactic categories AUX or ADV:

(49) E Adverbial modality (POS):
  a. Maybe he reads Arabic.
  b. POS (T (F (x, y)))

(50) E AUX modality (POS):
  a. He may read Arabic.
  b. POS (T (F (x, y)))

On its epistemic reading, this AUX sentence is taken to be a paraphrase of (49) and assigned the same functional structure. AUX modals may appear in matrix clauses in complex modal sentences also:

(51) E AUX matrix modality (POS):
  a. It may be (true) that he reads Arabic.
  b. T (POS (T (F (x, y))))

Or in ADV in a matrix clause:

(52) E ADV matrix modality (POS):
  a. Possibly, it's true that he reads Arabic.
  b. T (POS (T (F (x, y))))
There are parallel paraphrase sets for epistemic necessity modal sentences in English.

(53) E Matrix clause modality (NEC):
   a. It's necessarily true that he reads Arabic.
   b. T (NEC (T (F (x,y))))

(54) E AUX Matrix clause modality (NEC):
   a. It must be (true) that he reads Arabic.
   b. T (NEC (T (F (x,y))))

Or, in informal style:

(55) Must be he reads Arabic.

Is this matrix clause or adverbial?

(56) E ADV modality (NEC):
   a. Necessarily, he reads Arabic.
   b. NEC (T (F (x,y)))

(57) E AUX modality (NEC):
   a. He must read Arabic.
   b. NEC (T (F (x,y)))

On its epistemic reading, the AUX modal sentence (57) is assigned the same functional structure as the ADV modal sentence (56). In all epistemic constructions, the modal operator embeds a tensed functional structure.

Deontic modality is marked in parallel sentence types. The contrast is as follows: in the functional structure of deontic modal sentences, the modal operator embeds a non-tensed functional structure.

(58) D Matrix clause modality (POS):
   a. It is possible for him to read Arabic.
   b. T (POS (F (x,y)))
(50) D AUX modality (POS):
   a. He can/may read Arabic.
   b. POS (F (x,y))

( infected can/may contrast here marks whether the agent's freedom to act is related to internal or external factors.)

(60) D matrix clause modality (NEC):
   a. It is obligatory for him to read Arabic. (He is required to read Arabic.)
   b. T (NEC (F (x,y)))

(61) D AUX modality (NEC):
   a. He must read Arabic.
   b. NEC (F (x,y))

Adverbial deontic constructions are less common than epistemic ones:

(62) D Adverbial modality (NEC):
   a. Copts fast obligatorily on Wednesdays and Fridays. (Copts are obliged to fast on Wednesdays and Fridays.)
   b. NEC (F (x))

Since the epistemic and deontic modal operators are mutually exclusive in the functional structure of sentences in a natural language, they may be collapsed into a single pair. Ambiguous AUX modal sentences in English may be assigned two functional structures, according to their two readings:

(63) He may read Arabic.
   E: POS (T (F (x,y)))
   D: POS (F (x,y))

(64) He must read Arabic.
   E: NEC (T (F (x,y)))
   D: NEC (F (x,y))

In syntactic structure, the AUX modals in English are mutually exclusive with tense marking on the following verb. These ambiguous
sentences are assigned two functional structures, according to their epistemic and deontic readings, as suggested by the paraphrases given in the preceding examples. This contrast corresponds to the contrast between the two types of complex sentences identified in Chapter 5, where I argued that complex sentences with finite embedded clauses are epistemic, and complex sentences with non-finite embedded clauses are deontic.

This account of modal ambiguity is intended only as a description of the ambiguous syntactic structures and the associated functional structures, not as an account of why the ambiguity is present. I am not concerned here with the history of the AUX modals in English, although that is an interesting question. Nor am I postulating any transformational derivations—"raising," for example, by means of which the grammar of English would be said to derive one sentence of the contemporary language from another—specifically, to derive sentences with AUX modals from "underlying" complex sentences in which modality is marked in a matrix clause. I am pointing to paraphrase relations among sentences as guides to the distinct functional structures that may be associated with different readings of ambiguous sentences, and to the relationship between epistemic and deontic modal concepts that these related functional structures exhibit.

6.5.3. Modal Ambiguity in EA

EA has no AUX modals, and considerably less modal ambiguity than English. The modal sentences in EA outlined earlier in this
chapter are all either (6.2) adverbial, and all epistemic; or (6.3) complex modal sentences, non-ambiguously either epistemic or deontic.

Note the following minimal pairs:

(65)  
| ø  laazim | ø  biyištąal kitiir |
| AUX NEC | AUX working much |
| PRES ACT PART ms | PRES bi-IMPF 3ms |

He must work a lot. (Epistemic)

(66)  
| ø  laazim | yištąal kitiir |
| AUX NEC | work much |
| PRES ACT PART ms | IMPF 3ms |

He must work a lot. (Deontic)

(67)  
| ø  mumkin | ø  Hatzurna bukrą |
| AUX POSS | AUX will-visit-us tomorrow |
| PRES PAS PART ms | PRES Ha-IMPF 3fs |

She may visit us tomorrow. (Epistemic)

(68)  
| ø  mumkin | tizurna bukrą |
| AUX POSS | visit-us tomorrow. |
| PRES PAS PART ms | IMPF 3fs |

She may visit us tomorrow. (Deontic)

In this section, I will review briefly the non-ambiguous modal constructions in EA, and show why they are non-ambiguous; and I will describe certain ambiguous modal constructions in EA and show why ambiguity is present.

The modal system of EA provides a clear confirmation of the analysis of modal ambiguity presented in this chapter. The principal type of modal ambiguity in EA occurs in complex modal sentences where the embedded clause is ambiguous between finite and non-finite readings. Therefore, the epistemic/deontic contrast in these complex sentences is lost, just as it is in AUX modal sentences in English. Table 6.1
Table 6.1. Complex modal sentences in Egyptian Arabic.

<table>
<thead>
<tr>
<th>A. Present Tense</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ø laazim</td>
<td>yidris</td>
</tr>
<tr>
<td>He must study.</td>
<td></td>
</tr>
<tr>
<td>2. ø laazim</td>
<td>Ø Hayidris</td>
</tr>
<tr>
<td>It must be that he will study.</td>
<td></td>
</tr>
<tr>
<td>3. ø laazim</td>
<td>Ø biyidris</td>
</tr>
<tr>
<td>It must be that he is studying.</td>
<td></td>
</tr>
<tr>
<td>4. ø laazim</td>
<td>Ø daras</td>
</tr>
<tr>
<td>It must be that he studied.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Past Tense</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5. {kaan laazim</td>
<td>yidris}</td>
</tr>
<tr>
<td>He had to study.</td>
<td></td>
</tr>
<tr>
<td>6. {ø laazim</td>
<td>kaan yidris}</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>7. {kaan laazim</td>
<td>Ø Hayidris}</td>
</tr>
<tr>
<td>It must be that he was gonna study.</td>
<td></td>
</tr>
<tr>
<td>8. {ø laazim</td>
<td>kaan Hayidris}</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>9. {kaan laazim</td>
<td>Ø biyidris}</td>
</tr>
<tr>
<td>It must be that he was studying.</td>
<td></td>
</tr>
<tr>
<td>10. {ø laazim</td>
<td>kaan biyidris}</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>11. {kaan laazim</td>
<td>Ø daras}</td>
</tr>
<tr>
<td>He must have studied. (Ambiguous)</td>
<td></td>
</tr>
<tr>
<td>12. {ø laazim</td>
<td>kaan daras}</td>
</tr>
</tbody>
</table>
inventories complex modal sentences in EA, and shows this kind of modal ambiguity.

Some comments on Table 6.1 are as follows. The vertical line shows a clause boundary, where the COMP inn and suffixed subject PRO optionally occur. Ø marks PRES; kaan marks PAST tense. Sentences (5, 6), (7,8), and (9,10) are pairs of sentences that mean the same. A translation is given. Sentences (11, 12) also mean the same and are both ambiguous in just the same way, as the translation shows. Must have is modally ambiguous in English as follows:

(69)  a. (I saw George celebrating at Gentle Ben's;) he must have passed the comprehensive exam. E 
 b. (Before a student can be admitted to the program,) he must have passed the comprehensive exam. D

Sentences (11, 12) in Table 6.1 are synonymous and are each modally ambiguous, just as must have is. They contain PAST tense and a PERF verb.

The Egyptians I have consulted, and the literature on EA (cf. Hanna, 1967, p. 24), agree that the bracketed pairs of sentences shown here mean the same. Modal ambiguity apparently has not been discussed in the literature, but the speakers I have consulted agree that (11, 12) are synonymous and modally ambiguous.

We may state the following interpretation rules concerning the sentences in Table 6.1:

(70) In a complex modal sentence, if the embedded clause is finite, the sentence is epistemic; if the embedded clause is non-finite, the sentence is deontic.

5. Other colloquial Arabic languages differ widely from EA in modal constructions and their meaning.
This rule covers part A in Table 6.1, the PRES tense sentences. But additional rules for the interpretation of tense marking are needed to account for part B, the pairs of synonymous PAST tense modal sentences.

(71) In syntactic structure, PAST tense may be marked by KWN in either clause, matrix or embedded, with no change in the interpretation of the modal sentence. This is the source of the synonomy. (Note that this includes PAST tense with the IMPF, in [6]. *kaan yidris* means "could have, would have, should have studied," in the counterfactual sentences described in 6.3. KWN here marks *irrealis*.)

(72) If the embedded clause is finite, PAST tense is interpreted as taking the embedded clause under its scope. (See translation of 7-8, 9-10.)

(73) If the embedded clause is non-finite (conditional, *irrealis*), PAST tense is interpreted as taking the matrix clause under its scope. (See translations of 5-6. PAST obligation is expressed here.)

Recall that the sequence *kaan daras* itself is ambiguous between finite and non-finite interpretations, as in the following examples:

(74) *kaan daras* 9aрабi abl ma yiruuH maşr
    AUX studied Arabic before (that) go Egypt
    PAST  PERF 3ms IMPF 3ms

    He had studied Arabic before he went to Egypt. (IND)

(75) law *kaan* biyHibb il-luğaat, *kaan daras* 9арабi
    if PAST likes languages PAST studied Arabic
    IRR  bi-IMPF 3ms IRR  PERF 3ms

    If he liked languages, he could have studied Arabic. (COND)

Recall that PAST PERF is in free variation with PAST IMPF in these conditional modal constructions.

We can now see why sentences (11, 12) in Table 6.1 are synonymous and modally ambiguous: (1) PAST PERF is itself ambiguous; (2) by (71), PAST tense may appear in either clause of the complex sentence, with no meaning change; (3) by (70), it is the embedded clause that determines the epistemic/deontic modality of the sentence;
(4) by (72, 73) it is the embedded clause that determines the scope of
the PAST tense operator in functional structure. Therefore, (11-12)
are synonymous and modally ambiguous.

In Egyptian Arabic, it is irrelevant to the interpretation of
the complex modal sentence whether PAST tense is marked in either the
matrix or the embedded clause, as long as it is marked in one of the
two. As stated in (71-73), the scope of the PAST tense operator depends
upon whether the construction is epistemic or deontic, and that depends
upon whether the verb in the embedded clause is finite (indicative) or
non-finite (subjunctive).

There are certain universal dependencies between the tense
marked in a matrix clause and the tense marked in an embedded clause.
Consider the following examples from English. If the matrix clause in a
complex modal construction marks present tense, any tense may be marked
in the embedded clause:

(76) It is possible that

he will study.

he is studying.

he studied.

But if the matrix clause marks past tense, then the embedded clause may
mark only an appropriate sequential tense:

6. The question then arises: can PAST be marked in both
clauses? One speaker gave this sentence:

kaan laazim innaha kaanit bitzaakir
PAST NEC that-she PAST STUDY

(?) It had to be that she was studying. E

There seem to be individual differences in the use of such sentences
in EA. Note that this sentence still falls under rule (71), whether
PAST tense is marked in one clause or in both clauses.
This restriction does not apply to complex deontic modal constructions, since the embedded clause is not tensed:

(79) It [is] possible for him to study.

These dependencies between tense marking in matrix and embedded clauses in complex modal constructions render past tense marking in both clauses redundant; it need be marked only in one clause or the other. And since the scope of the tense operator follows from the finite/non-finite character of the embedded verb, EA permits tense to be marked in either clause with no change in the interpretation, as shown in Table 6.1.

A second complex sentence type that shows modal ambiguity in EA also has an embedded clause which is ambiguous between finite and non-finite readings. It was noted in Chapter 3 that there are durative verbs which occur without the prefix bi- in indicative sentences. For such verbs, the indicative/subjunctive contrast is lost. When such a verb occurs in an embedded clause, that clause is ambiguous between finite and non-finite readings, and therefore the complex sentence is ambiguous between epistemic and deontic modality:

(80) Ø mumkin inni aţawwaH
    AUX POS that-I go-home
    PRES PAS PART ms COMP PRO IMPF ls

I may go home. E/D
This sentence may have a deontic interpretation. With an interrogative intonation, it can be used to request permission: Can I go home? (Or the sentence may be used declaratively to state that the speaker has permission; a correct but less likely use of the sentence.) Here the verb is read as non-finite. On the epistemic interpretation, the verb is read as finite; Wwh is a durative verb that uses the IMPF for both IND and SBJT. Here the speaker has not decided: I may go home. Because of the finite/non-finite ambiguity of the embedded clause, these complex sentences also closely parallel English AUX modal sentences in modal ambiguity.

6.5.4. FUTURE: Tense or Modality?

I have assumed that although tense is a particular kind of modality, that it is possible to decide whether a sentence in a particular language is marking temporal reference, tense per se, or broader modal notions such as possibility/necessity (or both) in a given construction. Sentences (67, 68) above, repeated here, showed a contrast between FUTURE and subjunctive clauses with respect to modal readings:

(67) ø mumkin [innaha] ø Hatzurna. bukra
    AUX POS that-she AUX will-visit-us tomorrow
    PRES PAS PART ms [COMP-PRO] PRES Ha-IMPF 3fs PRO

It is possible that she will visit us tomorrow. (She may ---) E

(68) ø mumkin [innaha] tizurna bukra
    AUX POS that-she visit-us tomorrow
    PRES PAS PART ms [COMP PRO] IMPF 3fs PRO

It is possible for her to visit us tomorrow. (She can ---) D
But in some future sentences the tense/modality distinction may not apply. Both English and EA use FUTURE predictively, or modally:

(81) Haykuun fil beet dil wa'ti
will-be at-home now
AUX PREP P
FUT

He'll be at home (by) now.

This use of FUTURE is the same as the use of FUTURE in simple conditional sentences in EA, as described in Section 5.3.

(82) iza kaan liHi' il-'atr, Haykuun fil beet dilwa'ti
if PAST caught the train will-be at home now
IRR PERF 3ms AUX
FUT

If he caught the train, he'll be at home (by) now.

I suggest that sentences such as (81) in both English and EA are interpreted in discourse as conditional sentence partials.

Whether will in English marks tense or modality is not clear. It appears that in FUTURE constructions across languages, the tense/modality distinction may not apply. Where the tense/modality contrast fails, the epistemic/deontic contrast fails also. I suspect that this indeterminacy between tense and modality in conditional sentences is the source of modal ambiguity in universal grammar.

This view of the nature of modal ambiguity applies, of course, only to languages which mark tense per se among the range of modal notions. It is possible that in languages which do not mark tense, aspect may play a role similar to that of tense in modal contrasts described here.
6.6. PAST Tense Marking in AUX Modals in English

The AUX modals may mark tense and modality simultaneously in single clauses in English. Compare:

(83) a. The boss says she can leave early today, but yesterday he said that she couldn't. D
b. The boss says that it is possible for her to leave early today, but yesterday he said it was not possible for her to leave early.

(84) a. Today George says she may go to London, but yesterday he said she might not. E
b. Today George says it is possible that she is going to London, but yesterday he said it was possible that she wasn't.

The paraphrases in (83b) and (84b) are intended as guides to functional structure.

Culicover (1976, p. 44) analyzes tense sequences in English, and points out that MODAL + PAST may refer to past, present, or future time in English sentences, as follows:

In fact, would, while it is a realization of will + Past may refer to past, present, or future time:

(3.15) When he came home John would always throw his shoes into the closet. (past time)
(3.16) I would like a cup of coffee, please. (present time)
(3.17) Do you think that John would fix the sink tomorrow? (future time)

Facts such as these led Akmajian et al. (1979, p. 53) to suggest that the AUX modals may not mark tense contrasts at all:

However, might is not necessarily the past tense of may, but may be a modal in its own right, indicating a weaker possibility than that indicated by may. Compare the two verbs in (149):

149. a. She may solve her problems.
    b. She might solve her problems.
I propose that there are two environments in which the PAST modals in English occur. One of these is the sequence of tenses environment, as shown in (83, `84) and in Culicover's (3.15). The second use of PAST modals is in conditional sentences, in irrealis. PAST modals frequently occur in discourse in sentences that are intended as conditional sentence partials, as in the following examples (adapted from Culicover, cited above):

(85) a. I would like a cup of coffee, please (if it's not too much trouble, etc.).
b. Do you think that John would fix the sink tomorrow (if we asked him to, etc.)?

And in Steele's examples:

(86) a. She may solve her problems (if she mends her ways, etc.).
b. She might solve her problems (if she mended her ways, etc.).

The conversational status of sentences with PAST modals as conditional sentence partials is responsible for their hypothetical quality. It is interesting to compare the PAST modals in English with conditional sentences in Egyptian Arabic, as described in Section 6.4 above. In these sentences, PAST tense as irrealis occurs in non-finite clauses. Other languages employ a past subjunctive or a conditional mood in parallel constructions.

6.7. On the Interdefinability of the Modal Operators in Universal Grammar

In the introduction to this chapter it was noted that modal operators are interdefinable with two instances of negation, as follows:
(87)  

a. What is necessarily true is not possibly not true, and vice versa (Epistemic); and
b. What one is obliged to do, one is not permitted not to do, and vice versa (Deontic).

The modal operators share this property of interdefinability with the quantifiers, as von Wright (1968) observed.

The following examples of negation in complex modal sentences in EA demonstrate modal interdefinability:

(88)  

∅ laazim | ȧrawwah
AUX NEC | I-go-home
PRES ACT PART ms | IMPF ls

It is necessary that I go home. (I must go home. D)

(89)  

miš laazim | ȧrawwah
AUX NEC | I-go-home
NEG-PRES ACT PART ms | IMPF ls

It's not necessary for me to go home. (I needn't go home. D)

(90)  

∅ laazim | marawwahš
AUX NEC | NEG-I-go-home
PRES ACT PART ms | IMPF ls

It is necessary for me not to go home. (I mustn't go home. D)

(91)  

∅ mumkin | ȧrawwah
AUX POS | I-go-home
PRES PAS PART ms | IMPF ls

It is possible for me to go home. (I can go home. D)

(92)  

miš mumkin | ȧrawwah
AUX POS | I-go-home
NEG-PRES PAS PART ms | IMPF ls

It's not possible for me to go home. (I can't go home. D)

(93)  

∅ mumkin | marawwahš
AUX POS | NEG-I-go-home
PRES PAS PART ms | IMPF ls

It's possible for me not to go home. (I needn't go home. D)
It's not possible for me not to go home. (= I can't not go home. D; or, I must go home. D)

It is interesting that both English and EA allow complex sentences with two negations and a POS modal operator, but do not use complex sentences with NEC and two negations:

(95) #miš laazim mařawwaHš
AUX NEC NEG-I-go-home
NEG-PRES ACT PART ms IMPF Is

#It's not necessary for me not to go home.

Sentences (88-94) are modally ambiguous, since mařawwaHš is a durative verb and therefore the embedded clause is ambiguous between finite and non-finite interpretations. The reader is invited to work out the epistemic readings.

6.8. Negation of the AUX Modals in English

AUX modal sentences in English are single clause sentences. The question then arises as to how these sentences mark the range of polarity contrasts that two clause sentences can mark. The answer lies in a set of systematic relationships among the AUX modals, such that each modal can be related to three other modals that negate it.

In syntactic structure, AUX modals are negated by not/n't. In functional structure, this not/n't may correspond either to the

7. Compare Spanish also:
   i) No puedo no trabajar. NOT POSS NOT
   I can't not work = I must work.
   ii) #No debo no trabajar. NOT NEC NOT
   I don't have to not work.
negation of the modal operator or to the negation of the material under the scope of the modal operator, according to the particular AUX modal. Consider the epistemic reading of a sentence such as:

(95) This may be the answer.

The modal *may* can be replaced in this sentence by other modals, affirmative and negative, with the following (schematic) interpretations (Figure 6.1). Each AUX modal is related to two other AUX modals that differ from it in one sign, and to another AUX modal that differs from it in both signs.

<table>
<thead>
<tr>
<th>Affirmative Modals</th>
<th>Negative Modals</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ POS +</td>
<td>may (be)</td>
</tr>
<tr>
<td>- POS -</td>
<td>must (be)</td>
</tr>
<tr>
<td>+ POS +</td>
<td>can (be)</td>
</tr>
<tr>
<td>- POS -</td>
<td>[needs to be, has to be]</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 6.1. AUX modals defined in terms of POS.
These readings do not occur for the modals in all sentences, but in some contexts they do occur. There is a gap in the system; needs to be is not an AUX modal. Since the modal operators are interdefinable, these relationships among the modals may be stated in terms of necessity as shown in Figure 6.2.

<table>
<thead>
<tr>
<th>Affirmative Modals</th>
<th>Negative Modals</th>
</tr>
</thead>
<tbody>
<tr>
<td>- NEC -</td>
<td>may (be)</td>
</tr>
<tr>
<td>+ NEC +</td>
<td>may not (be)</td>
</tr>
<tr>
<td>- NEC -</td>
<td>must (be)</td>
</tr>
<tr>
<td>+ NEC +</td>
<td>mustn't (be)</td>
</tr>
<tr>
<td></td>
<td>can (be)</td>
</tr>
<tr>
<td></td>
<td>can't (be)</td>
</tr>
<tr>
<td></td>
<td>[needs to be, has to be]</td>
</tr>
<tr>
<td></td>
<td>needn't (be)</td>
</tr>
<tr>
<td></td>
<td>[doesn't have to be]</td>
</tr>
</tbody>
</table>

Figure 6.2. AUX modals defined in terms of NEC.

Some comments on Figures 6.1 and 6.2 are as follows. Note that each modal can be paired with another as equivalent in some sentences, but the pairing between the AFF and NEG modals is opposite. The AFF

8. The marginal modals need to and have to also exhibit modal ambiguity.
   i) He has to work for a living. D
   ii) This has to be the best movie I ever saw. E
       (It must be true that - - -)
   iii) He needs to work for a living. D
   iv) Kant needs to have read Hume. E
       (It must be true that - - -)
This ambiguity suggests that these marginal modals correspond in functional structure to AUX modals.
modals have two matching polarity signs; the NEG modals have two polarity signs that do not match. Whether the not/n't of a NEG modal corresponds to NEG polarity in the matrix or embedded clause of a complex sentence depends upon whether the modal is being defined in terms of POS (Figure 6.1) or NEC (Figure 6.2). The relationships among the AUX modals may be exhibited in the Lewis Carroll diagram shown in Figure 6.3.9

[Diagram showing the relationships among the AUX modals]

9. Lewis Carroll diagrams, like Venn diagrams, are used to display set intersections. See Geach (1976, pp. 56-60).
Some comments on Figure 6.3 are as follows. The modals occupy an 8-celled structure because there are 3 dimensions of difference among them. The Carroll diagram shows the following properties of the modals:

1. The modals that may be equivalent are superimposed.
2. On each plane, each modal lies next to its syntactic negation (arrow). Arrows are opposite on each plane.
3. On each plane, each modal lies diagonally opposite to the modal it differs from in both signs, and between the two modals it differs from in one sign.

There is apparently only one AUX modal that occurs in sentences with two \textit{not}s, producing its modal opposite (see footnote 7 above):

\begin{equation}
(96) \text{I can't not go.} = \text{I must go.}
\end{equation}

Parallel complex sentences with double negation occur in EA, as shown in (92-94) above.

English is apparently exceptional among languages in possessing a (defective) 8-cell AUX modal system. \textit{Need} remains a transitive predicational verb in English (as does LZM in EA). The marginal modals \textit{have to} and \textit{be to} (AUX verbs elsewhere) sometimes are used to fill the gap in the system which would be the affirmative of \textit{needn't}.\textsuperscript{10} The relationships among the modals with respect to their interdefinability outlined here does not pretend to be an account of the usage of the

\begin{itemize}
    \item[10.] \textit{need} for some speakers is an AUX modal: \textit{need I say more?}
There are many distinctions among the modals in usage; *can* may mean "ability"; *may* can be used as a jussive: "May all your children be acrobats." My purpose here is a different one: to show interdefinability of the English AUX modals in at least some sentences of the natural language on some readings.

If a language is to express all modal contrasts shown in Figure 6.3 in single clause sentences, that is, if it is to mark all these modal contrasts in AUX, it will need an 8-cell structure. English uses half AFF and half NEG modals, reducing the basic terms to four. Since EA uses only adverbial and two-clause complex modal sentences, it has only two kinds of modal elements (those marking NEC and those marking POS); clause polarity is marked twice in these complex sentences. It is possible, of course, for a language to have only one modal element; but in practice, sentences with two negatives seem hard to process. Therefore, it seems very unlikely that there exists a natural language with only one modal.

6.9. Conclusions

The following generalizations may be made about modal constructions in universal grammar, for languages that mark tense as distinct from other modal notions:

1. In the functional structure of sentences, epistemic and deontic modal operators may be reduced to a single pair that are mutually exclusive in distribution. In the functional structure of epistemic modal sentences, a modal operator embeds a tensed structure; in the functional structure of deontic modal
sentences, a modal operator directly embeds a predicational function and its arguments.

2. **Irrealis** constructions in conditional sentences are a case of semantic extension. In **irrealis** PAST and in the predictive use of FUTURE sentences, the distinction between **tense** as temporal reference and more general modal notions of **possibility/necessity** does not apply.

3. Evidence in support of the functional structures proposed here for modal sentences is provided by (a) the interdefinability of modal elements in natural language, (b) paraphrase relations among the modal sentences of a language, and (c) translations between modal sentences across languages.

In this chapter I have attempted to demonstrate certain modal universals. Since any sentence about another sentence must either be concerned with the truth of the embedded sentence or state some dependency between the predicational functions of the matrix and embedded clauses, all complex sentences are modal. Therefore, all languages share certain modal sentence types.
CHAPTER 7

CONCLUSIONS: DEFINITIONAL AND NON-DEFINITIONAL PROPERTIES OF THE CATEGORIES

7.1. Introduction

In Chapter 2, language-independent definitions of the syntactic categories SUBJECT, AUX, PREDICATE, AND ADVERBIAL in terms of the functional structure of sentences were given. In Chapter 3, the instantiation of these categories in Egyptian Arabic was demonstrated, and their inventories specified. In succeeding chapters, changes in the categories across sentence type and mood in the language were described. Steele (in Steele et al., in press) has pointed out that a proposed language-independent definition of a syntactic category must be tested by showing that the definition selects a class of sentential constituents across languages that has linguistically interesting non-definitional properties. In this chapter, I will identify some non-definitional properties of the categories defined above; and I will show that the defining properties selected by Steele in the language-independent definition of AUX given in Steele et al. (in press) fall out of the more economical definition given here in terms of functional structure. I will begin with an examination of the variation in the syntactic categories of Egyptian Arabic across sentence type, and then compare the categories AUX and PREDICATE in English and Egyptian Arabic, and a small sample
of other languages, in order to identify the definitional and non-definitional properties of the categories.

7.2. The Syntactic Categories of Egyptian Arabic
Across Sentence Mood

The categories co-vary across sentence mood, as shown in Table 7.1.

Table 7.1. Syntactic categories across sentence mood.

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>AUX</th>
<th>PRED</th>
<th>ADV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. IND</td>
<td>a.</td>
<td>required</td>
<td>all non-verbal</td>
</tr>
<tr>
<td></td>
<td>(DEC,</td>
<td>PRES TENSE</td>
<td>predictors;</td>
</tr>
<tr>
<td>(INT)</td>
<td>b.</td>
<td>optional</td>
<td>all IND verbal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>optional</td>
<td>PERSON SUBJ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>optional</td>
<td>NEG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TENSE;</td>
<td></td>
</tr>
<tr>
<td>2. IMP</td>
<td>optional</td>
<td>zero</td>
<td>all verbs in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>all verbs in IMP inflection;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>optional</td>
<td>NEG excluded</td>
</tr>
<tr>
<td>3. SBJT</td>
<td>optional</td>
<td>zero</td>
<td>all verbs in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>all verbs in IMPF; S NEG</td>
<td>optional</td>
</tr>
<tr>
<td>4. COND</td>
<td>optional</td>
<td>Irrealis;</td>
<td>all verbal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S NEG optional</td>
<td>S NEG optional</td>
</tr>
</tbody>
</table>
7.2.1. The Category SUBJECT

SUBJ is optional or required in IND sentences according to tense and predicator type, since some predicators mark person subject and some do not. SUBJ is optional in all non-finite sentences, since all non-finite predicators mark person subject. In COND sentences, person subject is marked in KWN in irrealis, and/or in some verbal predicator.

7.2.2. The Category AUX

The category AUX appears in IND and COND sentences, and is excluded in IMP and SBJT sentences. In IND sentences, AUX marks realis; in COND sentences, AUX marks irrealis. This paradoxical secondary use of PAST tense marking is a case of semantic extension.

7.2.3. The Category PREDICATE

The category PREDICATE is the only category that is required in all sentence moods; all sentences must have a predicator. Since some predicators in Egyptian Arabic mark the argument(s) of the predicational function as well as the function, there are one-word sentences (where the AUX node is empty). But, as we saw in Chapter 3, not only verbs may be predicators; there are non-verbal PRED also. And some of these non-verbal PRED are transitive and mark the agent argument. The following generalizations can be made concerning AUX and PRED in EA:

1. Every sentence has a PREDICATE.
2. Every sentence has AUX or some non-finite verbal inflection. (A CONDITIONAL sentence may have both.)
(3) AUX is a required constituent of just those sentence types (IND and COND) where non-verbal predicators occur.

(4) AUX is excluded from those sentence types (IMP and SBJT) where only verbal predicators occur.

These generalizations apply to embedded clauses as well. In finite embedded clauses, AUX is required, and non-verbal predicators may occur. In non-finite embedded clauses, AUX is excluded, and non-finite verbal predicators occur.

An analysis on which the non-finite inflections of KWN would be designated "IMP AUX" and "SBJT AUX" is rejected on the following grounds: on such an analysis, some IMP sentences and some SBJT sentences would have an AUX constituent, whereas others—those lacking a non-finite inflection of KWN—would not. Those non-finite sentences which have no non-finite inflection of KWN do not have a corresponding node where S NEG or subject pronouns occur. IMP sentences exclude the negative particles, and S NEG always attaches to the verb in SBJT clauses. Therefore, the two non-finite paradigms of KWN are assigned to PREDICATE, along with other non-finite verbs.

7.2.4. The Category ADVERBIAL

This category is optional in all sentences, and does not participate in the marking of sentence type or mood. The category ADV appears even in imperatives:

(5) ta9ala, min fa$tlak! (6) ta9ala bisur9a!
come please come quickly
IMP ms ADV IMP ms Adverb

Come, please! Come quickly!
In (5), an adverbial prepositional phrase appears in the category ADV. In (6), an adverb appears in the predicate. These differences in adverbial scope are correlated with prosodic differences.

7.3. A Comparison of AUX and PREDICATE in English and Egyptian Arabic

Table 7.2 compares AUX in the two languages.

Table 7.2. The category AUX in English and Egyptian Arabic.

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Egyptian Arabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inventory</td>
<td>be</td>
<td>KWN &quot;be&quot;</td>
</tr>
<tr>
<td></td>
<td>have, do</td>
<td>miš, muš or</td>
</tr>
<tr>
<td></td>
<td>modals</td>
<td>ma ...š.&quot;not&quot;</td>
</tr>
<tr>
<td></td>
<td>not</td>
<td>subject pronouns</td>
</tr>
<tr>
<td>2. Semantic</td>
<td>TENSE/MOOD</td>
<td>TENSE/MOOD</td>
</tr>
<tr>
<td>components</td>
<td>ASPECT, VOICE</td>
<td>ASPECT, VOICE</td>
</tr>
<tr>
<td></td>
<td>MODALITY</td>
<td>MODALITY</td>
</tr>
<tr>
<td></td>
<td>NEG</td>
<td>NEG</td>
</tr>
<tr>
<td></td>
<td>PRO SUBJECT</td>
<td>PRO SUBJECT</td>
</tr>
<tr>
<td>3. Role in S</td>
<td>Marks S mood (DEC, INT, IMP, SBJT, COND)</td>
<td>Marks S mood (DEC, INT, IMP, SBJT, COND)</td>
</tr>
<tr>
<td>4. Locus in S</td>
<td>S-initial and second position according to mood of S</td>
<td>S-initial or second if subject is optional; second if subject is required</td>
</tr>
<tr>
<td>5. AUX node empty</td>
<td>In affirmative DEC S without modals or AUX verbs (tense is marked on &quot;main&quot; V)</td>
<td>In affirmative IND present tense S (no form of the AUX V appears)</td>
</tr>
<tr>
<td>6. No AUX node in S</td>
<td>In deontic complements; in SBJT S</td>
<td>In deontic complements; in IMP/SBJT S</td>
</tr>
</tbody>
</table>
Some comments on Table 7.2 are as follows.

1. **Inventory.** The inventory of AUX in English and Egyptian Arabic is small and closed. In EA, there is the root KWN, inflected in a form from one of the three indicative verb paradigms, subject pronouns, and the particles marking S negation. The finite inflections of KWN never appear outside of the AUX node in EA. In English, there are three verbs which may appear in the AUX node; these verbs also never appear outside the AUX node in their finite inflections. Non-finite forms of be, have, and do (which in some person/number inflections are homophonous with finite forms) appear outside the AUX node, in the V^n structure of English. The NEG particles in English and EA appear both in the AUX node and elsewhere. In English, NEG attaches only in AUX; in EA, NEG attaches in AUX and PRED. English has AUX nodals; EA does not, unless we count the realis/irrealis contrast as modal.

2. **Semantic components.** Both languages mark tense and mood in AUX, as well as S NEG. EA marks the modal notions of necessity/possibility in complex sentences and in adverbs (see Chapter 6) while English has parallel constructions and AUX modals. English marks aspect and voice distinctions with be vs. have in combination with participles: has written, is written, is writing. EA marks these contrasts in V and PART alone; there is only one AUX V. Both languages mark sentence polarity (S NEG) in AUX. All the functions marked in AUX in both languages are 'sentence operators' in the functional
structure of the sentences in which they occur. EA marks tense only in AUX, English marks tense in both AUX and PRED.

3. **Role in the sentence.** By marking S mood, AUX participates in determining the speech-act potential of the S. The imperative mood is of particular interest: EA has no AUX node in imperative S (affirmative or negative), while English has an AUX node in IMP S, but tense, modality, and aspect are not marked there. Only the AUX V *do* and the NEG particle are present in the AUX node in IMP S in English. *Do* in NEG IMP S cannot be 'main' verb *do*, since NEG attaches, and NEG attachment occurs only in AUX (*He doesn't the dishes*). Only non-finite inflections of *be* and *have*, or any other V, occur in IMP S in English. AUX is S-initial in both the IMP and INT moods in English (*Don't you do that!). An S-initial AUX in English signals non-assertion. Do marking emphasis occurs in affirmative DEC S in English, and in affirmative IMP S used in making requests, a sub-variety of command speech acts. DEC and INT S differ in English in the role of *do*. English thus marks each S mood by changes in the locus and constituency of AUX, while EA never marks mood by changes in the locus of AUX, only by changes in the inventory of AUX: optional changes in NEG marking in INT sentences, irrealis in COND sentences, and a zero AUX in the IMP and SBJT moods. There is subject verb agreement in the English AUX verbs, and bound pronominal subject marking in AUX in EA. In English, a subject is required for all IND S; this NP subject is often attached to AUX.
The subject requirement is related to the fact that AUX verb agreement is distinctive only for the third person singular in verbs (except for be).

4. **Locus in the sentence.** In both languages, AUX appears in two loci: S initial and second position. In English, the change in AUX locus marks S mood; in EA AUX is in second position when there is no pronominal subject marking in AUX or PRED, and a SUBJECT is required, or where SUBJECT is optional, and the order of AUX and SUBJECT is free.

5. **AUX node empty.** In DEC S in English, AUX is in second position in the S; where do appears, it marks emphasis or carries NEG. In affirmative DEC S with no modal or AUX V to carry tense, the AUX node is empty and tense is marked on ("attaches to") some non-AUX V in the following S node, PRED. In INT S, AUX is S initial, and never empty; if the S has no modal or other AUX V, do appears in AUX. Tense is never marked on "main" V in any but affirmative DEC S in English. In EA, the AUX node is empty in present tense affirmative IND (DEC and INT) S, where there is no form of the verb KWN; present tense marking is zero. In such sentences, NEG is marked on ("attaches to") some non-AUX V (or other PRED) in the following S node, PRED.

6. **No AUX node in the sentence.** In both English and EA, there is no AUX node in the S that are complements of deontic predictors. There is no AUX node in the SBJT mood in either language, nor in the IMP mood in EA.
Table 7.3 presents a comparison of some predication types in English and EA.

Table 7.3. Sentence types in English and Egyptian Arabic.

<table>
<thead>
<tr>
<th>English</th>
<th>Egyptian Arabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBJ AUX</td>
<td>PRED</td>
</tr>
<tr>
<td>1. he was walking (Pr PART)</td>
<td>huwwa kaan maaṣi (Act PART)</td>
</tr>
<tr>
<td>2. it &quot; written (Pa PART)</td>
<td>&quot; &quot; maktuub (Pas PART)</td>
</tr>
<tr>
<td>3. he &quot; angry (ADJ)</td>
<td>&quot; &quot; za9laan (ADJ)</td>
</tr>
<tr>
<td>4. &quot; &quot; at the door (Pp P)</td>
<td>&quot; &quot; 9al-baab (Pp P)</td>
</tr>
<tr>
<td>5. &quot; &quot; a doctor (NP)</td>
<td>&quot; &quot; ṭabiib (NP)</td>
</tr>
<tr>
<td>6. &quot; Ø writes (V Pres)</td>
<td>&quot; Ø biyiktib (V bi-IMPF)</td>
</tr>
<tr>
<td>7. &quot; Ø wrote (V Past)</td>
<td>&quot; Ø katab (V PERF)</td>
</tr>
<tr>
<td>8. &quot; will write (V Non-finite)</td>
<td>&quot; Ø Hayiktib (V Ha-IMPF)</td>
</tr>
<tr>
<td>9. &quot; may write (V Non-finite)</td>
<td>(complex sentence)</td>
</tr>
<tr>
<td>10. &quot; has written (Pa Part)</td>
<td>(same as 7.)</td>
</tr>
<tr>
<td>11. &quot; has been writing (V²)</td>
<td>- - - - - -</td>
</tr>
<tr>
<td>12. &quot; may have been writing (V³)</td>
<td>(complex sentence)</td>
</tr>
</tbody>
</table>

Embedded Non-Finite Clauses

13. ... to be writing | ... yikuun biyiktib (V²) |
14. ... to have written | ... yikuun katab (V²) |
Some comments on Table 7.3 are as follows. The sentences in each column are translations of the other. In English, non-finite have and be may occur in PRED; this is the $v^n$ system of English. In EA, non-finite yikuun (the SBJT of KWN) may occur before verbs in the bi-IMPF and the PERF; this is the $v^2$ system of EA.

Table 7.4 compares PREDICATE in English and Egyptian Arabic.

Table 7.4. The Syntactic category PREDICATE in English and Egyptian Arabic.

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Egyptian Arabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inventory</td>
<td>VP, NP</td>
<td>VP, NP</td>
</tr>
<tr>
<td></td>
<td>ADJ P, PART P</td>
<td>ADJ P, PART P</td>
</tr>
<tr>
<td></td>
<td>PREP P, LOC</td>
<td>PREP P, LOC</td>
</tr>
<tr>
<td></td>
<td>NEG</td>
<td>NEG</td>
</tr>
<tr>
<td>2. Semantic features</td>
<td>predicational F</td>
<td>predicational F</td>
</tr>
<tr>
<td></td>
<td>aspect, voice</td>
<td>aspect, voice</td>
</tr>
<tr>
<td></td>
<td>tense, mood</td>
<td>mood</td>
</tr>
<tr>
<td></td>
<td>NEG</td>
<td>NEG</td>
</tr>
<tr>
<td></td>
<td>person subject, object</td>
<td>person subject, object</td>
</tr>
<tr>
<td>3. Role in S</td>
<td>marks intrans. F</td>
<td>marks intrans. F</td>
</tr>
<tr>
<td></td>
<td>and trans. F, the agent</td>
<td>and trans. F, the agent</td>
</tr>
<tr>
<td></td>
<td>argument of which is</td>
<td>argument of which is</td>
</tr>
<tr>
<td></td>
<td>always marked in SUBJECT</td>
<td>always marked in SUBJECT</td>
</tr>
<tr>
<td>4. Locus in S</td>
<td>follows AUX; or, SUBJACT in the interrogative mood</td>
<td>follows AUX; or, optional SUBJACT may intervene</td>
</tr>
<tr>
<td>5. PRED node empty</td>
<td>PRED may be elided,</td>
<td>PRED may be elided,</td>
</tr>
<tr>
<td>(sentence partial)</td>
<td>leaving only AUX</td>
<td>leaving only AUX</td>
</tr>
<tr>
<td></td>
<td>and SUBJACT</td>
<td>or AUX and SUBJACT</td>
</tr>
</tbody>
</table>
Comments on Table 7.4 are as follows. Both languages mark transitive F in both V and PART. EA also has other transitive non-verbal PRED\_\_2—the prepositions and nouns that mark person subject via suffixed pronouns, as described in Chapter 3. EA marks person subject in all PRED\_\_2; English distinguishes only third person singular in verbs in PRED. English marks the object arguments of a transitive predicator in NPs dominated by VP, in unmarked syntactic structures. EA may mark the direct object of a transitive predicator via a suffixed object pronoun attached to verb or participle, or by an NP dominated by VP. Otherwise, objects may be marked in an NP attached to S, or in a PP appearing in ADV, in marked or derived syntactic structures.

On the whole, AUX and PRED in English and EA are strikingly similar. The major differences are two: (1) EA has the AUX verb in all indicative sentences, not just those with non-verbal predicators; (2) English has AUX modals.

If PAST irrealis is counted as modality, then the semantics of AUX in Egyptian Arabic and English become even closer. The number of non-definitional features shared by these categories in these unrelated languages shows the usefulness of the language-independent definitions of AUX and PREDICATE given in Chapter 2.

7.4. AUX and PREDICATE in a Small Sample of Languages

In the preceding chapters, I have shown that the syntactic categories AUX and PRED are instantiated in EA, and defined the role played by the members of the morphological class verb in each of these
syntactic categories in the language. For a cross-language perspective, let us look at AUX and PRED in a small sample of other languages for which an instantiation of the category AUX has been demonstrated. These languages are Luiseno, as described by Steele; Lummi, as described by Demers; and Japanese, as described by Akmajian and Kitagawa (in Steele et al., in press). None of these languages have AUX verbs, as English and Egyptian Arabic do. By comparing these categories across languages, we can determine their non-definitional properties, and begin to investigate the question of why some languages have AUX verbs and some do not.

Languages that have no V in AUX have an AUX composed exclusively of particles or clitics. As far as is known at present, all languages have particles in AUX; some have verbs also. In a language with little or no morphological apparatus, the distinction may break down.

Table 7.5 shows the marking of certain semantic features in AUX and PRED in this small sample of languages.

AUX always marks sentence mood, since imperative sentences across languages either lack AUX or have an AUX that is distinct from that of indicative sentences. Interrogative sentences differ from declarative sentences in AUX in this sample; in Egyptian Arabic, these differences in NEG in questions are optional, as described in Chapter 3. All the languages mark modality in AUX except Egyptian Arabic; if we count the realis/irrealis contrast as modal, then Egyptian Arabic has modality in AUX also.
### Table 7.5. Semantic features marked in AUX and PRED.

<table>
<thead>
<tr>
<th>Language</th>
<th>AUX</th>
<th>PRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>mood, tense, modality, aspect, voice</td>
<td>person subject, tense, aspect, voice</td>
</tr>
<tr>
<td>(AUX V)</td>
<td>person subject</td>
<td>object</td>
</tr>
<tr>
<td>Egyptian Arabic</td>
<td>mood, tense, person subject</td>
<td>person subject, aspect, voice</td>
</tr>
<tr>
<td>(AUX V)</td>
<td></td>
<td>object</td>
</tr>
<tr>
<td>Luiseño</td>
<td>mood, tense, modality, person subject</td>
<td>tense, aspect, voice, number</td>
</tr>
<tr>
<td>Lummi</td>
<td>mood, tense, modality, person subject</td>
<td>aspect, voice</td>
</tr>
<tr>
<td>Japanese</td>
<td>mood, modality, tense</td>
<td>aspect, voice</td>
</tr>
</tbody>
</table>

We can include here comparative information on AUX in Walbiri, as described by Hale (1973); and Dyirbal, as described by Dixon (1972). These languages have ergative features, and no claim is made here as to their sentential constituents other than AUX. Walbiri marks mood, tense, modality, aspect, negation, person subject, object, and reflexives in AUX, and tense is also marked elsewhere in predicates. Dyirbal marks mood and modality in a set of second position particles, and tense elsewhere on the verb.

Sentential negation has not been included in Table 7.5, since my information on the marking of negation is incomplete for this sample. S NEG is marked in AUX in at least English, EA, and Walbiri.

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1. Hale (1980) proposes that Walbiri is a W* language; that is, that word order is free except for the second position AUX, and there are no sentential constituents larger than the word.
therefore, S NEG in AUX does not appear to be correlated with the
presence or absence of verbs in AUX.

Only English and EA have copular verbs in AUX. In both
languages, these copulae mark tense. In some languages, tense is never
marked in the morphology of any verb, but is marked only in AUX; Lummi
is an example. Other languages that mark tense by particles in AUX
mark tense simultaneously both in AUX and in verbs in PRED. Verbs in
these languages mark a different kind of temporal reference from that
marked in AUX, and the two kinds of tense-marking interact to give the
temporal reference of the sentence. Walbiri and Luiseño appear to be
cases in point. In EA, tense (AUX)/aspect (PRED) are coordinated, just
as tense₁ (AUX)/tense₂ (PRED) are coordinated in Luiseño (and Walbiri?).
Since there are no universally accepted criteria for defining tense vs.
aspect across languages, these languages may be more or less similar
in this area than the labels used here would indicate.

Some languages do not mark tense, and of those that do, some
do not mark tense in AUX. Dyirbal appears to be an example of the
latter case. Therefore, we can only generalize as follows on the
basis of this sample: if a language marks tense in AUX, and marks
tense only in the verb morphology, it will have an AUX V.

Person subject marking is of interest, since it is not a
sentence operator, but the argument of some function marked in PRED.
The other pronominal clitics in the Walbiri AUX also mark arguments
of functions marked in PRED. English and EA mark person subject in
all V; that is, it is marked in both AUX and PRED. Luiseño, Lummi,
and Walbiri have clitics that mark person subject in AUX only; person
subject is never marked elsewhere. Japanese does not mark person subject in either AUX or verbs. Neither does Dyirbal. Therefore, in this sample: if a language marks person subject, it marks person subject in AUX. But this generalization does not hold. Steele (in Steele et al., in press) notes that in Classical Nahuatl, person subject is marked in the predicate and not in AUX, which marks only modality.

By marking tense and person, AUX is telling who and when. Tense and subject are both deictic (indexical) items crucial to the referentiality of the sentence. A tense operator shows when the event registered by some lower function/argument structure is said to be true. Tense links an event to some particular time, and thereby makes it possible for the tensed sentence to be used in speaking of some actual event. We say that something happens by saying that it happens at some time. All the semantic features marked in AUX are deictic and/or modal. Person markers are deictic; tense is both; and the remaining sentence operators marked in AUX are modal. 2

In this very small sample, English and EA are the only languages that mark both tense and person subject only in the morphology of verbs; and both languages have AUX verbs. In Walbiri and Luiseño, the clitics that mark person in AUX show certain resemblances in shape to the independent pronouns with which they may occur. Hale proposes that the AUX clitics in Walbiri may have evolved from such pronouns. Steele (1977) has suggested that person marking in verbs generally 2

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2. See Woisetschlaeger (1976) for an interpretation of aspect as a modality.
evolves from the cliticization of pronouns. Thus, it appears that a language may follow one or the other of two convergent evolutionary paths in acquiring person marking in AUX.  

EA has acquired person subject marking in AUX from both sources. Person subject is marked in inflections of the AUX verb KWN, and in the independent pronouns which may appear in AUX in present tense sentences where person subject is not marked in PRED. Where NEG attaches to these pronouns, they are cliticized. This indicates that person subject marking is an essential, and not an incidental feature of AUX in EA.

Hale (1973, p. 333) observes that in Walbiri "Non-verbal predicates require what I will refer to as the 'stative' auxiliary, whose base is phonologically null. The stative auxiliary differs from others only in that it may be deleted from main clauses." It is of interest that in English also there is a particular AUX sub-type associated with non-verbal predicates—the copular verb be. And in Egyptian Arabic, AUX is a required constituent of just those sentence types where non-verbal predicates may appear. Across languages, copulae may be optional or excluded in certain constructions—according to the tense, person, polarity, or predicate type of the sentence.  

The copula has been recognized as a device whereby sentences with non-verbal predicates may be constructed. Lyons (1967, p. 390)

---

3. Li and Thompson (1977) propose that the evolution of copulae from pronouns is a recurring feature across languages.

4. For example, Mandarin Chinese has a copular verb which can occur only with predicate nominals (Hashimoto, 1969).
describes the copula as follows: ". . . the copula is a purely grammatical element which carries distinctions of tense, mood, and aspect in the surface structure of certain classes of stative sentences."

(By stative sentences, Lyons apparently means here sentences with non-verbal predicators; not, for example, sentences with stative verbs.)

If a language has a copula, this verb serves to build sentences with some non-verbal predicator. Copulae in most cases mark tense, and so serve to build finite sentences. Because of the syntactic structure of copular sentences, where tense (or simply F) embeds some lower predicate and its argument, and because they are intransitive, copulae are ideal candidates for inclusion in an AUX category. But a language may have a copula, and not have that copula in AUX. Luiseño has a copular verb in PRED, where it marks tense. This tense marking is coordinated with the tense marked in AUX in particles.

7.5. Definitional and Non-Definitional Properties of the Categories

Table 7.6 compiles the semantic and syntactic properties recorded for the categories SUBJECT, AUX, PREDICATE, and ADVERBIAL in the non-ergative languages surveyed here.

Table 7.6 shows differences among the categories in all four of the parameters selected here—semantic features, functional structure, inventory, and distribution. The question is one of determining which properties provide for the most economical language independent definitions of the categories, and which properties will remain as linguistically interesting non-definitional properties which will show the usefulness of the proposed definitions.
## Table 7.6. Syntax and semantics of the categories.

<table>
<thead>
<tr>
<th>l. Semantics</th>
<th>SUBJECT</th>
<th>AUX</th>
<th>PRED</th>
<th>ADV</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. features</td>
<td>subject</td>
<td>mood</td>
<td>mood</td>
<td>modality</td>
</tr>
<tr>
<td>marked</td>
<td>(agent, topic)</td>
<td>tense</td>
<td>tense</td>
<td>non-modal</td>
</tr>
<tr>
<td></td>
<td>person</td>
<td>modality</td>
<td>modality</td>
<td>attributes</td>
</tr>
<tr>
<td></td>
<td>number</td>
<td>aspect</td>
<td>aspect</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>gender</td>
<td>voice</td>
<td>voice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>negative</td>
<td>subject</td>
<td>subject</td>
<td></td>
</tr>
<tr>
<td></td>
<td>modality</td>
<td>person</td>
<td>object</td>
<td></td>
</tr>
<tr>
<td></td>
<td>gender</td>
<td>number</td>
<td>number</td>
<td></td>
</tr>
<tr>
<td></td>
<td>negative</td>
<td>gender</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. functional attributes</td>
<td>agent or single argument of function marked in PRED</td>
<td>intransitive functions</td>
<td>at least some transitive functions</td>
<td>intransitive functions; some embed PRED function and some embed PRED function and its arguments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>embedding PRED function and its arguments</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 2. Syntax

<table>
<thead>
<tr>
<th>a. inventory</th>
<th>nouns, names, pronouns, sentences</th>
<th>small, closed: particles, verbs</th>
<th>large, open: adverbs, VP, NP, ADJ, PREP--no class is excluded</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>optional in some sentence types; required in some sentence types; required in others</td>
<td>required in some sentence types; required in others</td>
<td>required optional</td>
<td></td>
</tr>
<tr>
<td>b. distribution</td>
<td>optional in some sentence types; required in others</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
AUX and PREDICATE differ minimally in the list of semantic features that are marked in these categories in English and Egyptian Arabic. (Object marking is excluded from AUX here; it was noted above that AUX in Walbiri marks object.) English marks both tense and modality in both AUX and PREDICATE. But inventory separates AUX and PREDICATE. Steele's definition of AUX selects semantic features and inventory as defining features, and presupposes the notion of sentential constituent:

Given a set of language internal analyses, in terms of constituents, those constituents which may contain only a specified (i.e., fixed or small) set of elements, crucially containing elements marking tense and/or modality will be identified as non-distinct (Steele, in Steele et al., in press, n.p.).

According to Table 7.6, all the categories differ in distribution—in their required/optional status. But it is possible that SUBJECT, for example, may be a required constituent in all complete sentences for certain "isolating" languages not included in this preliminary sample. And it is possible that AUX may be a required constituent of all sentence types in languages such as Walbiri, where imperative sentences have an AUX. More information across languages is needed here, but it seems possible that the distribution of categories across sentence type may fail as a single defining feature.

All the categories differ in inventory, and this feature comes closest to the traditional way of defining syntactic categories, as coinciding with lexical categories. As we have seen, sentential nodes and lexical categories do not always correspond; therefore, distinctions among the categories in terms of inventory must
be made by means of cumbersome lists; inventory is not an economical means of defining any set.

There remains functional structure, the defining feature selected in Chapter 2 above for the language independent definitions of the categories. Functional structure alone suffices to distinguish among the categories, along with the notion of constituent that is also presupposed by Steele's definition. Therefore, functional structure seems to provide the most economical basis for the definitions.

Once functional structure is chosen as the defining feature, the other differences among the categories shown in Table 7.6 remain as linguistically interesting non-definitional properties. For example: since AUX is defined as marking sentence operators, and since sentence operators are necessarily modal, then tense and/or modality necessarily are marked in AUX, if a language has an AUX. AUX may mark elements that are not functions, such as the subject of a function marked in PRED, but all functions marked in AUX are sentence operators and therefore modal. This is a highly interesting property of AUX across languages.

I have not included here certain other non-definitional properties of the category AUX identified by Steele, such as her important findings on the restrictions on the position of AUX in sentences across languages. There seem to be languages in which word order is relatively free, with the exception of AUX, which most often occurs in second position. The position of AUX may be fixed, while that of other categories may vary; but for some languages, there are restrictions on the position of other categories as well as AUX.
In sum, the alternative definition of AUX offered here has the following advantages: (1) this definition does not require the listing of the inventory of the category; (2) it is one of a set of language independent definitions of syntactic categories that all rest upon the same defining feature; (3) it is more economical, in that it presupposes only the notions of sentential constituent and functional structure; and (4) functional structure is one area of the study of semantic structure where we have a body of generally agreed upon results. Attempts at isolating other semantic features that can be used in defining SUBJECT and PREDICATE have not been fruitful.

7.6. Conclusions

There has been considerable controversy over the status of AUX as an available syntactic category in universal grammar; see Steele et al. (in press). Some arguments against recognizing AUX as an independent category have run as follows: across languages, the elements that have been assigned to AUX are in reality either verbs or clitics; therefore, they cannot be AUX constituents. My purpose here has been to show that such arguments are specious because syntactic categories are not morphological classes or morphosyntactic expansions of such classes, but sentential constituents where members of various morphological classes occur. Syntactic categories have specific inventories that cut across morphological class membership. Clitics may be a part of NP (articles); and NPs may appear in either SUBJECT or PREDICATE. Verbs appear in either AUX or PRED; prepositions in ADV or PRED, etc. Syntactic categories are recurring clusters of particular
morphological items that play a certain specified role in the syntax and functional structure of sentences. I have attempted to demonstrate that a set of syntactic categories defined on the basis of functional structure provides for an economical description of the syntactic structure of sentences in Egyptian Arabic, and that this set of language-independent definitions of syntactic categories has cross-language utility. I have suggested that the difference between unmarked vs. marked (derived) sentences may be defined with reference to the functional structure of sentences.

Syntactic categories defined with reference to functional structure show a level of syntactic structure that is above the level represented by NP, VP, and other morphosyntactic categories, which are the proper constituents of syntactic categories. Syntactic categories are the sentential constituents that we make reference to in defining the differences between sentences that show sentence mood. Sentence mood is a crucial factor in the use of sentences to perform particular speech acts—claiming, asking, ordering, and the like. SUBJECT is linked to referring, PREDICATE to predication. Once we understand the role of AUX in the sentence, we can recognize the other major sentential constituents and the part they play in the functional structure of the sentence.


Hashimoto, Anne Yue (1969) "The Verb 'To Be' in Modern Chinese" in The Verb "Be" and Its Synonyms, John W. M. Verhaar, ed. D. Reidel, Dordrecht-Holland.


