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A Linguistic Analysis of English According to The Neo-Khalilian Theory At The Lexical And Supra-Lexical Levels And Its Contribution to The Teaching of English

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Submitted by: Ms. Fatiha KHELOUT **Supervised by: Dr. Kamal KHALDI**

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TITLE

A Linguistic Analysis of English According to The Neo-Khalilian Theory At The Lexical And Supra-Lexical Levels And Its Contribution to The Teaching of English

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DECLARATION

I hereby declare that the substance of this dissertation (thesis) is entirely the result of my investigation and that due reference or acknowledgement is made, whenever necessary, to the work of other researchers.

Date: June 2nd, 2013

Signed :.....

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Abstract:

This study, entitled "A Linguistic Analysis of English According to The Neo-Khalilian Theory at The Lexical And Supra-Lexical Levels And Its Contribution to The Teaching of English", aims at presenting and discussing the neo-khalilian theory and its concepts, before it considers its applicability to the analysis of one aspect of English grammar, namely the English tense forms. The study also investigates the ways in which this analysis can be translated into teaching materials specifically designed for Computer Assisted Language Learning.

The neo-khalilian theory is a linguistic theory which attempts through a detailed reading of the works of the early Arab grammarians (i.e., mainly those who lived before the end of the fourth Hegirian century (H)) to formalize the *naḥw al-ʻarabi* (**النحو العربي**, i.e., Arabic grammar). According to this theory, language analysis is based on a central level called the lexical level from which we can reach both higher and lower levels; i.e., language is analysed downwards, by looking for the signifying segments and their components, and upwards, by discovering how the minimal units combine to form larger units. We shall give a detailed description of these linguistic levels of the Arabic language and the formal definition of the different linguistic units appearing at each language level, in addition to the main concepts and operational tools upon which Arabic linguistics is based.

The concepts which enabled the Arab grammarians to go beyond the mere collection of data are:

- The notion of *qiyās* (**قياس**), i.e., comparison between items to come out with a generalised pattern that can be used to generate the linguistic units of language ;
- The notions of : *bāb* (**باب**), i.e., set of elements and *miṯāl* (**مثال**), i.e., pattern;
- The notions of *aṣl* (**أصل**), i.e., kernel and *fàr'* (**فرع**), i.e., derived element;
- The relations of *waṣl* (**وصل**), i.e., simple concatenation and *binā'* (**بناء**), i.e., structural integration);
- The notion of *lafḍa* (**لفظة** i.e., lexie) and the three axioms by which it is defined:
  - The *'Infirād* (**انفراد**) i.e., independence and separability ;

- The *Ibtidā'* (ابتداء) i.e., beginning and 'infiṣāl (انفصال) i.e., separability ;
- The *tammakun* (تمكّن i.e., capacity to accept additions).

An important part of the present study is devoted to the applicability of these concepts to the analysis of one aspect of English grammar, namely: the English tense forms. We have set as one of the main objectives of this study the search for the formal patterns that show the way the English tense forms are constructed from smaller units to larger ones, and vise versa. These patterns allow also to define formally the English verb handling both the simple and the complex verb phrases and showing how the auxiliaries differ from the other English verbs.

We shall suggest a computer application whose algorithm is based on this description to validate these linguistic patterns and to propose a tool for the teaching and learning of English tense forms. This application, labelled SCHEME TESTER, is meant to support the learners/users in analyzing tense forms actualized with overt subjective pronouns containing English tense forms of the primary patterns, determining the infinitive form of its main tense form, and its characteristics. It also allows the learners to practise on English tense forms by transforming them to all their corresponding forms; i.e., affirmative or interrogative, active or passive, positive or negative, present or past, ordinary or perfective, progressive or non progressive. SCHEME TESTER is made up of three modules: the ANALYSER, the TRANSFORMATOR and the EXERCISER.

To reach its purpose, the study is divided into five chapters. Chapter One gives an account of the theoretical background to the neo-khalilian theory, bringing an insight into its major methodological tools and the levels of language analysis. Chapter Two covers the adopted procedure of analysis and a sample implementation as well as a synthesis of the results of our Magister thesis as concerns the analysis of the English tense forms of the primary and secondary patterns. In Chapter Three, we suggest to distinguish the lexical and supra-lexical levels in English after a discussion leading to a revised version of the patterns of the English verbal lexie presented in our Magister thesis. In the fourth chapter, we propose to go a step further in the analysis by describing the complex verb phrase, while Chapter Five is devoted to an attempt to translate the suggested analysis into teaching materials specifically designed for Computer Assisted Language Learning.

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List of Symbols and Abbreviations

#	this symbol indicates the left or right boundary of an utterance (strong word boundary)
*****	the asterisk behind any sentence or part of sentence indicates that the construction is not correct (from the grammatical point of view, i.e. it does not follow the rules of the system, and not from the communicational and semantic point of view).
‘ –’	This symbol indicates that a given position in the pattern is necessarily empty
A	Adverbial
AGR	Agreement
AGT	Arabic Grammatical Tradition
Aux.	Auxiliary
AES	Automated Essay Scoring
AI	Artificial Intelligence
AWE	Automated Writing Evaluation
C	Complement
CALL	Computer Assisted Language Learning
Co	Object complement
Conc.	Concord
Cs	Subject complement
ed	Past tense
***en* form**	Past participle form

FLA	Foreign Language Acquisition
GUI	Graphical User Interface
ICALL	Intelligent Computer Assisted Language Learning
IDE	Integrated Development Environment
IEA	Intelligent Essay Assessor
ILTS	Intelligent Language Tutoring System
INFL	Inflection
***ing* form**	Progressive form
ITS	Intelligent Tutoring Systems
Morph.	Morphology
NBLT	Network-Based Language Teaching
Neg.	Negation
NLP	Natural language Processing
O	Object
Od	Direct object
Oi	Indirect object
Pos.	Position
R	Governing element
RAD	Rapid Application Development
S	Subject
SLA	Second Language Acquisition
T	Governed term
T_1	First governed term

T_2	Second governed term
T_3	Third governed term
T_i	Governed term number *i*
TELL	Technology-Enhanced Language Learning
Tns	Tense
UI	User Interface
V	Verb
Ø	Sometimes called: “zero morph.” or “mark zero”, or *Tark al-ʻalāma* for Sībawayh, it means that : - When it appears in the position of ‘negation’, it indicates that the statement is positive. - When it appears in the position of ‘tense’, it indicates the present tense. - When it appears in the other positions of the pattern, it indicates that this position is empty but it can be full.

Transcription System

In this study, we have chosen the transcription system adopted by the ALESCO (Arab League Educational, Cultural and Scientific Organization) in February 1981 to transcribe Arabic.

1- The consonants

The Arabic ḥarf	Its transcription	Example	Its transcription
الهمزة	’	إزرو	’Azru
		بئر	Bi’r
		ميناء	Mīnā’
ب	b	بغداد	Baġdād
ت	t	تونس	Tūnis
ث	ṯ	الثرثار	Aṯ-ṯarṯār
ج	J	جدة	Jiddah
ح	ḥ	حلب	Ḥalab
خ	ẖ	خيبر	Ḫaybar
د	d	دبي	Dubay
ذ	ḏ	اللاذقية	Al-Lāḏiqiya
ر	R	الرباط	Ar-Ribāṭ
ز	Z	الجزائر	Al-Jazā’ir
س	s	سيناء	Sinā’
ش	š	دمشق	Dimašq
ص	ṣ	صور	Ṣūr
ض	ḍ	الدار البيضاء	Ad-Dār-al-Bayḍā’
ط	ṭ	طرابلس	Ṭarābulus
ظ	ḍ Ḍ	الكاظمية أبو ظبي	Al-kāḍimiyyah Abū-Ḍaby
ع	‘	عدن	‘Adan
غ	ġ	غردایة	Ġardāyah
ف	f	فلسطين	Falastīn
ق	q	قطر	Qaṭar
ك	K	الكويت	Al-Kuwayt
ل	L	ليبيا	Lībya
م	M	مصر	Miṣr
ن	N	لبنان	Lubnān
هـ	H	القاهرة	al-Qāhira
و	W	وجدة	wajda
ي	y	اليمن	al-Yaman

2- The short vowels

The ḥaraka		Its transcription	Example	Its transcription
ُ	الضمة	u	الأردن	Al-’urdun
َ	الفتحة	a	مكة	Makkah
ِ	الكسرة	i	بنزرت	Binzart

3- The long vowels

The ḥaraka	Its transcription	Example	Its transcription
الضمة الممدودة	ū	al-ḫarṭūm	الخرطوم
الفتحة الممدودة	ā	ar-riyāḍ	الرياض
الكسرة الممدودة	ī	al-madīnah	المدينة

4- The tanwīn

The tanwīn	Its transcription	Example	Its transcription
التنوين المضموم	un	**مدينة**	Madīnatun
التنوين المفتوح	an	**مدينة**	Madīnatan
التنوين المكسور	in	**مدينة**	Madīnatin

GENERAL INTRODUCTION

This study is concerned with the presentation and discussion of the neo-khalilian theory and the exploration of the possible implications deriving from using its concepts as a basis to a linguistic analysis of the English grammatical system, and more particularly the English tense forms. Then, it investigates the ways in which this analysis can be translated into teaching materials specifically designed for Computer Assisted Language Learning.

In this introduction, we focus on the research issues of the work, the statement of the problem, the objectives of the work and their validation through the proposed outline. Our study highlights the importance of the works belonging to the early Arabic linguistic tradition[1] as a source of interesting linguistic and conceptual tools which can be used for the study of languages other than Arabic, in our case English.

1. The research issues

The present study is concerned with the following three issues:

- First, the presentation and discussion of the neo-khalilian theory and its main concepts;
- Second, the use of its concepts as a basis to a linguistic analysis of one aspect of

[1] The beginnings of the Arabic linguistic tradition are drawn back in the literature to:

> the first comprehensive account of the Arabic language, Sībawayhi's (d. circa 791 [Hegirian]) Kitāb. Grammar must have been practised before his time, but the ideas of his predecessors are known only through quotations in later treatises. Basic linguistic terminology and concepts such as qiyās 'analogy' were developed by these grammarians, but their work did not have the scope of Sībawayhi's analysis of Arabic, which covered the entire structure of the language. (Versteegh 2006: 434)

We speak also of the early Arab grammarians who, according to Hadj-Salah (1979), are the scholars who lived during a specific period, i.e., before the end of the fourth Hegirian century (H).

the English grammatical system, namely the English tense forms[2];

- Third, the exploration of the implications of the proposed linguistic analysis in the domain of English teaching and learning.

Consequently, to investigate these issues, we carried out this research with three main objectives in mind : first to present the main concepts on which the neo-khalilian theory is based, then to consider the applicability of the concepts of this linguistic model (i.e. mainly the concepts of: *bāb* (باب, i.e., a set of elements), *qiyās* (قياس, i.e., comparison between items to come out with a generalised pattern that can be used to generate the linguistic units of language), *ḥadd* (حدّ i.e., a pattern), *aṣl* (أصل, i.e., kernel) and *far'* (فرع, i.e., derived element)) to the analysis of English following up the preceding study undertaken in our Magister research (Khelout 2001), and finally, to explore the implications it can have in the domain of teaching English tense forms.

2. Statement of the problem

At a time when the linguistic field abound with studies about the description of natural languages (such as French, English, German, Spanish, and even Arabic) through Western-inspired models, we propose an approach which is outside this mainstream. In fact, our work deals with the application of a linguistic model deriving from a tradition which *"in many respects differs from the way Western scholars analyse the phenomenon of language."* (Versteegh 1997b: 7), namely Arabic linguistics[3].

[2] This restricted domain has been narrowed even more in the application proposed in the last chapter, since we have designed an application restricted to the syntactic constructions containing tense forms of the primary pattern actualised with overt subjective pronouns.

Throughout the present study, the reader will feel our conviction that the early Arabic linguistic tradition is relevant, because of its originality and preciseness.[4] It is often pointed out that Arabic linguistics is a domain which deserves more attention than it is the object now and the "*very limited amount of space [which is] devoted to the Arab grammarians in the main histories of linguistics (e.g. Robins, 1967) is quite out of proportion to the real importance of this tradition*" (Bohas & al. 1990: vii). In addition, many scholars find that Arabic linguistics remains "*a source of endless fascination (…) that many issues which press on today were especially addressed by the founders and early practitioners of Arabic grammar as well"* (Owens 2006: 1). Even though it is important to underline that the reason why "*the linguists, the historians of grammatical theories, and the public interested in the history of Islamic culture have not appreciated just how interesting it is*" (ibid.) is mainly due, from one hand, to the difficulty to read the texts forming this tradition characterised by being technical[5], and from the other hand, as Bohas & al. have pointed it, the "*Arabists failed to make them understand it*" (1990: vii).

Many aspects characterize the originality of the conceptual thought of the early Arab grammarians whose genius brought "*a core of linguistic thinking which*

[3] The term 'Arabic grammar tradition' is sometimes used instead of the term 'Arabic linguistics'.

[4] In fact, for many researchers, "*Arab grammarians' texts constitute an indispensable source for any description of Arabic not only by dint of the facts which they relate, but also through the explanations of facts that they give*" (Bohas & al. 1990: vii).

[5] And this is one of the reasons why we have chosen the neo-khalilian theory which describes and exemplifies the conceptual tools used by the early Arab grammarians to analyse Arabic. As will be explained in the first chapter, the neo-khalilian theory is a meta-theory, i.e., a theory based upon the theory of *'ilm al-'Arabiyya* (cf. Hadj-Salah 1979: I, 16-17).

was, in its theoretical underpinnings, significant in its own right, but which also produced a descriptive corpus of great detail"(Owens 2006: 1). We would like to mention especially the concept of *qiyās*, which is, according to Hadj-Salah (1979), the pillar of all Arabic thought and not only Arabic linguistics, and the concept of pattern (*ḥadd* حدّ).

The pattern, as will be presented in detail in the first chapter (p. 25), is the body within which the way and order of the operations which apply on a set of linguistic units could be visualized. It clarifies the way we can relate one utterance to other more extended ones using additions and the way we can do the opposite through deletions. The pattern is operative and dynamic, because its positions are not fixed and can be virtual (since they can be empty).

We focus here on the point that we have set the search for these generating patterns in English as one of the most important goals of our research. To test these patterns, we intend to develop a computer application entirely based on the internal functioning of the resulting English linguistic patterns and which is meant to help the learner exercise on English tense forms.

Our choice to investigate the domain of computing intervenes at a time when the computer is considered to be one of the most revolutionary inventions of man in the sense that it is nowadays used in all domains through different applications developed by computer programmers. These applications have become part of human life and have even influenced human communication through the daily use of electronic mails (e-mails), short message services (SMS) and social networking services (SNS). Language learning has also taken part to this phenomenon by

identifying the computer as a possible helpful means that can be used for language teaching and learning. A whole interdisciplinary domain of research has thus emerged in the mid-sixties called Computer Assisted Language Learning. CALL[6] can be simply defined as "*the search for and study of applications of the computer in language teaching and learning*" (Levy 1997: 1).

Before moving to the following section in which we will investigate the research questions of this study, we would like to note the fact that the basic concepts of Arabic linguistics will be presented in this study through what is known as the neo-khalilian theory. The latter is a linguistic theory which attempts, through a detailed reading of the works of the early Arab grammarians, to formalize the *naḥw al-'arabi* (**النحو العربي**, i.e. Arabic grammar[7]).

3. The research questions

This research is designed to explore four research questions that we list below:

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[6] We note here that other acronyms are found in the literature to design this field of study, but CALL is widely the most used compared to, for example, "*NBLT (Network-Based Language Teaching); TELL (Technology-Enhanced Language Learning), or Information And Communication Technologies For Language Learning.*"(Levy & Stockwell 2006: footnote 1, p. 1).

[7] The *naḥw* (**النحو** i.e., the grammar elaborated by the Arab grammarians) appeared with *Abū al-Aswad* (**أبو الاسود**) and his students and developed with *'Abdallah Ibn Abi Isḥāq* (**عبد الله ابن أبي اسحاق**) for the analysis of language and *Abū 'Amr Ibn Abi al-'Alā'* (**أبو عمر ابن أبي العلاء**) for the field research and massive codification and arrived to its culminating point with *al-Khalīl Ibn Aḥmād al-Farāhīdī* (**الخليل ابن أحمد الفراهيدي**) and *Sībawayh* (**سيبويه**) (Cf. Hadj-Salah 1979: I, 27-28). For Hadj-Salah, and as already mentioned in footnote 1 (p. 2), the theory that many linguists have tried to extract from Arabic linguistics is present in what is left by the early grammarians who lived during the four first Hegirian centuries, especially Al-Khalīl Ibn Aḥmad Al-Farāhīdī (**الخليل بن أحمد الفراهيدي**), an eminent grammarian. What is noticeable in the analysis of *Al-Khalīl* is the introduction of some notions of Mathematics, which rendered it explicit and rigorous.

1. We set as a main task in this work to describe the neo-khalilian linguistic model as a theoretical framework whose concepts are not exclusively specific to the analysis of the Arabic language. Thus, the main research question which is designed to guide the present study can be formulated as follows:

Can the linguistic concepts of the neo-khalilian theory be used for the analysis of languages other than Arabic, English in our case?

2. To test the applicability of these concepts to the analysis of English, we have chosen the English tense forms[8], because we are quite convinced that the domain of the verb *"is always, in all languages, the most difficult domain and the most complicated"*[9]. Given the fact that the central level of language analysis in the neo-khalilian theory is the lexical level[10] and since there are some basic syntactic phenomena which could be grasped only at the level which is immediately higher, i.e. the supra-lexical level, we have set the following research question:

Can lexical and supra-lexical levels be identified in English?

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[8] We started dealing with the English verb in a preceding study presented as a thesis of Magister (2001) which has been supervised by Professor Abderrahman Hadj-Salah and Dr Kamal Khaldi. This time we will explore further questions concerning mainly the complex verb phrase. For the sake of ensuring full understanding of the proposed linguistic analysis, we are compelled to reproduce some parts of this preceding study, though not always in an identical way, because our vision has sometimes changed especially for what concerns the provided patterns for the English verbal *lexie*.

[9] Our translation of: "est toujours, dans toutes les langues, le domaine le plus difficile et le plus compliqué." (Charmeux & al. 2001: 49)

[10] It is precisely setting this level as the central level from which language analysis departs which, according to Hadj-Salah (1979), is one of the main aspects which characterise the originality of the analysis of early Arab grammarians.

3. Given the fact that the neo-khalilian theory attempts to formalise Arabic grammar using linguistic patterns, we have set the following research question:

Can we define lexical and supra-lexical generating patterns
for the analysis of the English tense forms in English?

4. The computer can be used to evaluate the generative capacity of linguistic models; this is why we have set another research question to our work hoping that it will not only allow us to evaluate the generative power of the proposed linguistic patterns, but also examine whether we could apply our findings to English teaching and learning. Thus, our last research question is:

Can the linguistic analysis based on generating patterns form a basis
to propose a computer tool for the teaching and learning of the English tense forms?

5. Objectives of the research

As stated in the preceding sections, the first purpose of this research consists in presenting the neo-khalilian theory and its basic concepts, as well as describing the linguistic levels used for the analysis of the Arabic language. This part of the study is very important knowing that, on one hand, all our research is based on these concepts and, on the other hand, the literature about this theory is scarce.

In the second part of the work, we attempt to answer the most important research problem around which the whole study develops; namely, whether the linguistic concepts of the neo-khalilian theory can be used for the analysis of languages other than Arabic, in our case English. What must be underlined here is that, no attempt to apply this theory to another language has been undertaken so

far[11], apart from an attempt that is being undertaken on the French language but whose results, to our knowledge, have not been published yet.

The main purpose here is to suggest an analysis of the English tense forms according to the principles of the neo-khalilian theory. This does not mean that we expect to find equivalent structures in the two grammatical systems (i.e. English and Arabic), but only to show that the methodological tools used by these early Arab grammarians (such as : *al-qiyās* القياس, *al-binā'* البناء, *al-ḥadd* الحد ,…)[12] are not specific to the analysis of Arabic and that they are abstract and powerful enough to be dissociated from what is specific to Arabic and its structures as a linguistic system to study the structure of other languages. For this, we have to keep in mind one guiding line: understand how these tools are used to the analysis and description of Arabic (this being, as we have seen, the purpose of the first part of the study), and then explore how they can be used to identify the organising principles underlying the functioning of the English language in order to come out with the set of patterns which can generate the English linguistic units at different linguistic levels.

The third purpose of the study is to find out whether the suggested analysis can be translated into teaching materials. To reach this purpose, we suggest to explore the domain of Computer Assisted Language Learning and examine the way the English verb patterns can form the basis for the elaboration of computer tools that can be used for the teaching of English tense forms.

The computer application that will be proposed can be described as a direct

[11] We speak here of the neo-khalilian linguistic model and not the principles of Arabic grammar model which, as we know, have been used for the study of languages other than Arabic such as Hebrew and Turkish. (cf. Versteegh 1997b and Ermers 1999)

[12] These concepts will be defined and described in detail in chapter one.

implementation that aims at validating the patterns of English tense forms of the primary pattern actualized with overt subjective pronoun (determining whether its tense is present or past, ordinary or perfect, progressive or non progressive) and also the type of the sentence containing it (i.e. whether interrogative or affirmative, negative or positive, active or passive).

As far as our work is concerned, this implementation is a very good test for the adequacy of the linguistic description provided in our work. It is important because we are convinced that linking theory to practice is extremely important and coming out with practical issues helps testing the validity of what we have suggested and it is a way to question and reconsider each time the results brought by a research.

6. Validation of the objectives

To reach its objectives, the study is divided into five chapters. Chapter One gives an account of the theoretical background to the neo-khalilian theory, bringing an insight into its major methodological tools and the levels of language analysis. We include in this chapter a detailed description of these linguistic levels of the Arabic language and the formal definition of the different linguistic units appearing at each language level.

Chapter Two covers the adopted procedure of analysis and a sample implementation as well as a synthesis of the results of our Magister dissertation as concerns the analysis of the English tense forms of the primary and secondary patterns. What is underlined in this chapter is that the ultimate goal of the whole study is the search for generalized patterns that allow both the definition of the linguistic units composing the English tense forms and also the transformational processes that allow us to go from one tense form to the other ones.

In Chapter Three, we suggest to distinguish the lexical (i.e. the central level of language analysis according to the neo-khalilian theory) and supra-lexical (i.e. the level that is immediately higher than the lexical level) levels in English after a discussion leading to a revised version of the patterns of the English verbal lexie[13] presented in our Magister dissertation (Khelout 2001).

In the fourth chapter, we propose to go a step further in the analysis by describing the complex verb phrase, while the last chapter will be devoted to the exploration of the implications this kind of linguistic analysis can have in the domain of the teaching/learning of the English tense forms. To make this transition, we propose to explore the domain of Computer Assisted Language Learning and design a computer application to help learners/users analyze the English tense forms of the primary pattern actualised with overt subjective pronouns and practise on them by trying to get their corresponding forms (i.e. affirmative or interrogative, active or passive, positive or negative, present or past, ordinary or perfective, progressive or non-progressive). This computer application, labelled SCHEME TESTER, is made up of three modules: the ANALYSER, the TRANSFORMATOR and the EXERCISER.

The study ends with a conclusion in which we briefly summarise the results brought by this study and give some suggestions for further studies. A glossary of the terms and concepts used in the study is proposed to the reader as well as two appendices: one devoted to the detailed description of the Arabic verbal lexie and the second presents the English auxiliaries.

[13] Cf. chapter one for the definition of this concept.

Chapter 1

THE NEO-KHALILIAN THEORY : BASIC CONCEPTS AND LEVELS OF ANALYSIS

Introduction:

This chapter covers the concepts that were used by the early Arab grammarians to the analysis of Arabic and which form the fundamental notions around which the neo-khalilian theory has developed. We include also a description of the levels of analysis of this theory and a definition of the linguistic units at each level.

1.1. 'Ilm al-'Arabiyya and the neo-khalilian theory

Arabic linguistics appeared around the 8th century A. D. (at the end of the 1st Hegerian Century) as a result of the Arab's need to study, describe and preserve the language of the Koran. In fact, the early Arab grammarians "*belonged to a period of time when the essential preoccupation of the grammarians was to describe and fix in a written form the functioning and the vocabulary of a language which had never received the sanction of any codification before*"[1].

We refer to the work of these early grammarians[2] as the *'ilm al-'Arabiyya* (**علم العربية**): i.e., the theory which studies Arabic, and it is, as we have already mentioned in the introduction of the study[3], "*nearly entirely contained -for what*

[1] Our translation of: "ils appartenaient à une époque, où la préoccupation essentielle des grammairiens était de décrire et de fixer par écrit les règles de fonctionnement et le vocabulaire d'une langue qui n'avait jamais encore reçu la sanction d'une quelconque codification" (Hadj-Salah 1979: I, 2).

[2] As already mentioned, Hadj-Salah emphasizes the distinction that has to be made between these grammarians, (i.e., those who lived at that period (like *al-Khalīl* (الخليل), *Sībawayh* (سيبويه), *Ibn Ǧinnī* (ابن جنّي)), and those who came after and for whom the study of language became scholastic. But this exclusion is not radical since he speaks of some grammarians who lived after that period and whose ideas were faithful to those of the first generations of Arab grammarians like *al-Raḍi al-Istrabādi* (الرضي الاستراباذي).

[3] Cf. footnote 1, p. 2.

concerns essentially the grammar and the phonology- in the imposing and remarkable book of a grammarian of the 2nd Hegirian century namely the Kitāb of Sībawayh"[4]. Nevertheless, Hadj-Salah notes that "*most of the great concepts of Arabic linguistics - and the essential of the method of the qiyās - were the result of the work of his predecessors*"[5]. Unfortunately, the grammatical works written before *al-Khalīl* and *Sībawayh* were lost. The Arabic lexicon *al-'Ayn* of *al-Khalīl* and the book of grammar *al-Kitāb* of *Sībawayh* remained the only references for many grammarians who came after them.

The neo-khalilian theory is mainly the work of the Algerian linguist Abderrahman Hadj-Salah (1979) who has undertaken an investigatory research trying to bring some insights into the theoretical framework of the works of the early generations of Arab grammarians and define the fundamental concepts that were at the basis of *'ilm al-'Arabiyya* (**علم العربية**). He has tried, as explained in his own words, to make:

> a study as exhaustive as possible of the rational and experimental principles on which the grammar (*al-naḥw* **النحو**) is generally based and the principles and methods, which were at the basis of the collection and control of the data of the *'Arabiyya* (**العربية**); - as well as the deep analysis of the theories and patterns elaborated and made by these grammarians.[6]

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[4] Our translation of: "… se trouve presque entièrement contenue - pour ce qui est de l'essentiel de la grammaire et de la phonologie- dans l'imposant et remarquable ouvrage d'un grammairien du II e siècle à savoir le *Kitāb* de *Sībawayh*" (Hadj-Salah 1979: I, 18).

[5] Our translation of: " *la plupart des grands concepts de la linguistique arabe - et l'essentiel de la méthode du qiyās - fut l'œuvre de ses prédécesseurs."* (Ibid.: I, 29).

[6] Our translation of : " - l'examen aussi exhaustif que possible des principes rationnels et expérimentaux sur lesquels repose le *naḥw* d'une façon général, ainsi que les principes et

Hadj-Salah explains further the goal of his study in the following paragraph:

> The goal, in fact, of our study identifies itself with the theory contained in this *'ilm al-'Arabiyya* (علم العربية)*:* it will consequently consist of an approach that is based on another approach namely of a meta-theory. Our task will consist then not only in identifying, defining and describing the multiple components of this theory, but also in extracting the constants from a systematic study of the data that are contained in it, then to reconstruct as possible the system that integrates them and that we suppose is the one of the first generations.[7]

The neo-khalilian theory can be ranked within the works whose objective is "*the reconstruction of the methodological, theoretical and epistemological foundation which are thought to have informed the Arab grammarians in their treatment of the language.*" (Suleimen 1998: 30). This task is not easy because this theoretical framework does not exist explicitly in the writings of the early Arab grammarians. In fact, "*being data-oriented at inception, AGT [Arabic grammatical tradition] was, not unnaturally, more concerned with description than theory building*" (ibid.). Nonetheless, the existence of a general framework in which these studies were undertaken cannot be denied for two reasons: the first one is that "*there exist treatises on Arabic grammar which attempt such an explanation, for example Zaǧǧāǧī's Īḍāḥ and Ibn Ǧinnī's Ḫaṣā'iṣ*" (ibid.), and the second one consists in the

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les méthodes qui ont été à la base de la saisie et du contrôle des données de la *'Arabiyya* ; - l'examen également approfondi des théories et des modèles élaborées et mises en œuvre par ces grammairiens." (Hadj-Salah 1979: I, 41)

[7] Our translation of : "Notre tâche consistera donc, non seulement à identifier, à délimiter, et à décrire les multiples composantes de cette théorie, mais aussi à dégager des constantes à partir d'un examen systématique des données qui y sont contenues puis à reconstituer, autant que faire se peut, le système qui les intègre et que nous supposons être celui des premières générations." (Ibid.: I, 16-17)

fact that "*since description cannot take place in a theoretical vacuum, the existence of a prior theoretical framework for AGT [Arabic grammatical tradition], no matter how covert this may be, must be granted as of logical necessity*" (ibid.).

There are some other scholars in the Arab world and elsewhere who studied this Arabic grammatical tradition ((Bohas & al. 1990), (Owens, 1996, 2006), (Suleiman 1998), (Versteegh 1997a, 1997b), (Carter 1973, 1980, 1981, 1985, 1990), (Carter & Versteegh 1990), (Versteegh et. al. 2008), (Mughazy 2007)), but the work done by Hadj-Salah (1979) is characterised by the fact that the achievements of Al-Khalil, as well as the early Arab grammarians, are presented in a way that is adapted to the development of modern linguistics[8] through the following three points:

- A synthesis of the studies made by the early Arab grammarians to the description of Arabic is presented. This is supported by a critical analysis, especially when there is more than one point of view discussing a particular aspect of Arabic language.
- Elements of Mathematics are introduced in order to explain and formalize Arabic grammar. We can, for example, mention the use of a variety of diagrams, symbols, and formulae for the clarification of the operations

[8] It is important to underline that modern linguistic concepts are not used by Hadj-Salah for the sake of reconstructing the theoretical framework of Arabic linguistics, which would be incoherent, but to present it in a way that can be understood by the reader who has notions of modern theories in linguistics, from one hand, and to achieve one of the main goals of his research consisting in the formalisation of Arabic grammar.

(replacements, deletions, additions, etc.) that occur in the different patterns. This is important because many linguists agree on the point that the Arabic linguistic texts "*must be read with a technical approach"* (Bohas & al. 1990: viii) using *"adequate conceptual tools, and should use the same precise scientific method and the same attention to detail which would be required when analysing contemporary linguistic texts*" (Ibid.).

- Some concepts of Arabic linguistics are compared to some existing notions that are closest in meaning to those existing in Western linguistics with a focus on the differences (mainly due to epistemological differences). Hadj-Salah (1979) emphasises that some concepts of Arabic linguistics are not entirely unknown to Western linguists since most of them acknowledge the existence of notions such as: the *aṣl* (i.e., the kernel from which depart all the operations in a linguistic pattern) and *lafḍa* or *lexie* (i.e., the linguistic unit which is formally definable as an independent unit of speech[9]). Though, the importance and the far-reaching consequences of the use of such notions are, according to Hadj-Salah, still insufficiently evaluated.

[9] We invite the reader here to examine the definition given by Mel'čuk to the term utterance and which we reproduce here:

> A speech segment which is sufficiently autonomous. An utterance can appear between two major pauses, it constitutes a prosodic unit, and its internal structure is governed by linguistic rules. It is also perceived by speakers as 'something that exists in the language.' An utterance is a word-form, a phrase, a clause, or a sentence. (Polguère & Mel'čuk 2009: 2-3).

Comparing Arabic linguistics to the Western theories starting from the earliest Aristotelian ideas to Structuralism and Generativism is the result of Hadj-Salah's own conviction that the linguist cannot limit himself only to one theory, but has to have at least a general view of each theory. This approach has enabled Hadj-Salah to come out with what differentiates *'ilm al-'Arabiyya* (علم العربية, i.e., Arabic linguistics) from the other theories, though he notes at the same time that the difference between Arabic linguistics and structural linguistics, for example, is due to the difference of the epistemological bases of each approach ; especially the principles upon which they based their analysis and the way they collected their data[10].

[10] Let us examine especially this last point. Many have objected to the Arab grammarians the fact that they have studied only one form of Arabic. This has appeared to be subjective, non-scientific and very close to a normative study of language by which only the preferred form of Arabic is studied avoiding any other form actualised by the Arab speech community. A closer observation and a more careful reading of the writings of these Arab grammarians show that the choice of this form is not simply the result of the preference of some grammarians or the imposition of a form that was not effectively used by the majority of the speech community; in fact:

> all the realised varieties heard from the mouth of the Arab *faṣīḥ*-s [(فصيح), i.e., native speakers] were considered as being an integral part of the *'Arabiyya*… the selection of this norm is exclusively based on the principle of the greatest extension of use and not on the particular usage belonging to a social class that is politically or economically privileged. (Hadj-Salah 1979: II, 433)

The analysed 'Arabiyya is the:

> linguistic system whose natural, spontaneous and daily use has been observed (…) among speaking subjects who lived in the Arabian peninsula, from at least the end of the second century (H) and whose number had reduced until complete disappearance at the end of the fourth century (…) starting from the fifth century... (Ibid.).

According to Hadj-Salah, "*we can understand the development and the evolution of the concepts of Arabic linguistics only by considering them in their historical context*"[11]. In fact, as we have just seen, the first preoccupation of the Arab grammarians at that time was the explicit description of the *'Arabiyya* because there was neither a codification nor written sources for this language (at that time the tradition was mainly oral). Thus, the first objective, and probably the most urgent one, was the elaboration of a corpus of this *'Arabiyya* through a long enterprise of data collection.

To sum up let us underline the main reasons which are behind the choice of the neo-khalilian theory as a linguistic theory to the analysis of English. We can say that, according to us, the neo-khalilian theory proposes an adequate linguistic analysis of the Arabic grammar and a quite interesting reconstruction of the principles and bases of the thought of the early Arab grammarians. We can also say that the neo-khalilian theory is

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Once the era of the *faṣāḥa* was judged to be finished, the corpus was closed and only the data on which there was a general agreement among linguists could be added to it.

Versteegh (2006) says also with regard to this point that:

> Arabic grammar was not a normative discipline, either: since the authority of the native speaker was paramount, grammatical analysis could not prescribe any norms but had to follow the linguistic behavior of the native speaker. Obviously this native speech was an idealized principle, because after the Islamic conquests there were no more native speakers of the standard language, which had become the language of literature, religion, and administration. (p. 435).

[11] Our translation of: "on ne peut comprendre le développement et l'évolution des concepts de la linguistique arabe qu'en les replaçant dans leur contexte historique" (Hadj-Salah 1979: I, 121).

explicit since, as will be shown in the following sections of this chapter, it presents an analysis based on a system of ordered rules that allows the definition of each linguistic unit according to a set of the relationships it holds with other linguistic units at the same level as well as higher and lower ones. In addition to this, this theory is systematic since its analysis goes from smaller units to larger ones and vice versa, thus, displaying the fact that language is made up of structured levels. Furthermore, it proposes an adequate grammar that is economical since it presents very few patterns that enable the linguist to describe the rules by which linguistic units of Arabic are generated.

1.2. The basic concepts of language analysis according to the neo-Khalilian theory

The concepts[12] which, according to the neo-khalilian theory, enabled the Arab grammarians to go beyond the mere collection of data are:

- The notion of *qiyās* (**قياس**), i.e., comparison between items to come out with a generalised pattern that can be used to generate the linguistic units of language ;
- The notions of : *bāb* (**باب**), i.e., set of elements, and *miṯāl* (**مثال**), i.e., pattern;
- The notions of *aṣl* (**أصل**), i.e., kernel, and *far'* (**فرع**), i.e., derived element;
- The relations of *waṣl* (**وصل**), i.e., simple concatenation, and *binā'* (**بناء**), i.e.,

[12] With regard to the terminology used in this study, we note that, as pointed by Versteegh, "*a special problem in dealing with non-Western linguistic traditions concerns the translation of technical terms*" (1997a: 6). Thus, we have chosen to use as much as possible the terminology proposed by Hadj-Salah (1979) and we have avoided the translation for two reasons: first to avoid bothering the reader with too much terminology; secondly, our translation might not convey the true meaning to which Hadj-Salah aims at.

structural integration;

- The notion of *lafḍa* (**لفظة** i.e., lexie) and the three axioms by which it is defined:
  - The *'Infirād* (**انفراد**) i.e., independence and separability ;
  - The *Ibtidā'* (**ابتداء**) i.e., beginning and 'infiṣāl (**انفصال**) i.e., separability ;
  - The *tammakun* (**تمكّن** i.e., the capacity to receive additions).

The following sub-sections present in detail these concepts through examples taken from the Arabic language.

1.2.1. The *qiyās*

As already mentioned in the introduction, the *qiyās* (**القياس**) is one of the most important operative and analytical concepts of *'Ilm al-'Arabiyya*. It is defined as "*an inductive device for extracting general principles from the data and as the means by which speakers create new utterances by extrapolating from speech patterns already known*" (Strazny 2005: 78). What Hadj-Salah calls "*la mise en qiyās*" (~ comparison) is a huge work based on rational thinking whose goal is the search for correspondences (between individual linguistic items, groups of items and even operations) and the discovery of implicit mechanisms.

The *qiyās*, goes beyond the mere comparative analysis that is based on identity and inclusion. It is based on the notion of equivalence of structure, behaviour,... (cf.

Hadj-Salah 1979: II, 418). The abstraction deriving from the *qiyās*[13] allows the linguist to describe the linguistic units not for their own sake, since their analysis is not directed towards their static characteristics or only what differentiate them from the other units. This kind of linguistic analysis of items allows the study of language as a whole network of intensive and extensive relations.

The *qiyās* can lead the linguist to discover, for example, the way the linguistic units are constructed[14], the way they behave in language[15] and concatenate with other linguistic units[16].

To clarify more this concept, let us examine how we can discover the pattern of the verbs: *qasama* (**قسم**), *qalaba* (**قلب**), *sabaqa* (**سبق**), *ḍahaba* (**ذهب**), which have in common the pattern *fa'ala* (**فعل**):

qalaba	→	q	**a**	l	**a**	b	**a**
ḍahaba	→	ḍ	**a**	h	**a**	b	**a**
qasama	→	q	**a**	s	**a**	b	**a**
sabaqa	→	s	**a**	b	**a**	q	**a**
		Replaced by:	Replaced by:	Replaced by:	Replaced by:	Replaced by:	Replaced by:
fa'ala	→	**F**	**a**	**'**	**a**	**l**	**a**

Figure 1.1

[13] We have mentioned here only the use of the *qiyās* as a tool by the linguist, but there is also the act of *qiyās* consisting in the intuitive use of the generating patterns by the speaker himself and which can be unconscious (Cf. Hadj-Salah 1979: I, 207). This is an important characteristic of the *qiyās* because the speakers do not only use the utterances which they have heard or learned, but use the *qiyās* to construct new utterances that conform to the structure of language.

[14] *ḍahaba* (**ذهب**, i.e., he went) and *fataḥa* (**فتح**, i.e., he opened) are generated by the same pattern (**ذهب وفتح على وزن فعل**).

[15] For example, the plural of *ba'l* (**بعل**) is *bi'āl* (**بعال**), according to the pattern *fi'āl* (**فِعَال**) like *ǧimāl* (**جمال**), which is the plural of *ǧamal* (**جمل**) upon the same pattern.

[16] *ta-ḍhab* (**تذهب**, i.e., you go) and *ta-ftaḥ* (**تفتح**, i.e., you open) are generated from the same pattern *ta-f'al.*

Notice that the comparison is done systematically respecting the order in which the elements appear in each linguistic unit[17].

Another example is *kitāb* (**كتاب**) which can be compared to the *kalim* (**الكلم**, plural of *kalima*) that have the same consonantal root: **k - t - b** as: ***kātib*** (**كاتب**), *ma**ktab*** (**مكتب**), ***kataba*** (**كتب**) and to the items whose *wazn* (**وزن**)[18] is ***fi'āl*** (**فعال**). For example, *maktab* (**مكتب** i.e., place where we write), *mal'ab* (**ملعب** i.e., place where we play), *maǧma'* (**مجمع** i.e., place where we gather), have in common the pattern *maf'al* (**مفعل**) and which means *ism makān* (**اسم مكان** i.e., place where we do something).

We can also make this kind of analogies at the level of discourse. As we can notice, all the sequences appearing in the second column occur in the same position in speech:

ištaraytu	kitāban (e.g. 1.1)[19]
ištaraytu	al- kitāba al-mufida (e.g. 1.2) [20]
ištaraytu	al-kitāba al-laḍī ra'aytuhu al-bariha (e.g. 1.3)[21]

Figure 1.2

1.2.2.The *bāb*

The *qiyās* is entirely based on two other concepts: the *bāb* (**باب**) and the naḍīr (**نظير**). The *naḍā'ir* (**نظائر**, plural of *naḍīr* **نظير**) are "*the elements that are similar to each*

[17] The three consonants: *f, ', l* are used by the Arab grammarians to represent the changing consonants in each verb in a given pre-set order.

[18] Also called *miṯāl* (pattern **مثال**) which is a group of symbols in a given order that represent the structure of the *bāb.*

[19] I bought a book (**اشتريت كتابا**).

[20] I bought the interesting book (**اشتريت الكتاب المفيد**).

[21] I bought the book, which I saw yesterday (**اشتريت الكتاب الذي رأيته البارحة**).

other and that are similar to the representing element which is the pattern of the group to which they belong"[22]. The *naḍā'ir* are regrouped in *bāb*-s[23]. We speak, for example, of the *bāb* of the verbs: *ḍahaba* ('he went' **ذهب**), *saraqa* ('he stole' **سرق**) and *sabaqa* ('he came first' **سبق**). We say that these verbs belong to one set of elements because they share a common structure (i.e., a common sequential pattern) which is that of *fa'ala* (**فَعَلَ**, *i.e., he did*) (cf. Figure 1.1, p. 22). A *bāb* can be empty whenever there is no linguistic item which can correspond to the pattern it characterises[24]. A more abstract *bāb* is the one which integrates other *bāb*-s having the same pattern but at a higher level of abstraction. We speak, for example, of the *kalim* that are constructed out of three consonants ("les trilitères") k - t - b: *kataba* (**كَتَبَ** i.e., he wrote), *kutub* (**كُتُبْ** i.e., books), *kātib* (**كاتب** i.e., writer), *maktab* (**مكتب** i.e., desk). (cf. p. 23).

In each *bāb*, there are elements which represent the *qiyās*. Some elements may behave in a different way from these ones. In this case, we say that these elements are *šāḏa* (**شاذة** *i.e.,* they do not follow the general rule), since the *qiyās* is based on the most frequent uses and not the scarce ones[25].

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[22] Our translation of: *"... les naḍā'ir sont des éléments semblables entre-eux et semblables à un élément-type qui est le schème de la classe à laquelle ils appartiennent.*" (Hadj-Salah 1987).

[23] "le *bāb* est sémiologiquement considéré comme l'ensemble des *naḍā'ir.* " (Hadj-Salah 1979: I, 128)

[24] Hadj-Salah gives the example of *fi'ūl* (**فِعُولْ**) which is a pattern that results from the lexical combinations of the *'Arabiyya* but which is non existent in the real usage of the Arab speakers.

[25] Sībawayh gave the example of *qāma* (قام) which would have been *qawama* (قوم) if it followed the *qiyās* of its *bāb* (Cf. Hadj-Salah 1979: I, 213-223).

1.2.3. The *ḥadd*

The *ḥadd* (الحد) or *miṯāl* (المثال) is a pattern which defines the linguistic units at a given language level. It is a tool of simulation that is designed for simplification and schematization as underlined in the following passage:

> It consists in representing the linguistic elements in what is general in them, namely the structure that is common to them and which must be, alone, the object of explanation, everything else must remain in the shade (as long as there is no perturbation of the structure by factors exterior to it). It is then a true *method of simulation.* The patterns are, in fact, (…) only artificial constructions that we *substitute* to the reality for heuristic (and also demonstrative) reasons of efficiency and which, by this same fact, are never identical to the elements of language. The pure and schematic character of the *miṯāl-s* allows the linguists to reach a level which is higher than the multiplicity of the facts and reconstruct language through these models.[26]

The *ḥadd* (الحدّ) of the *lexie*[27], for example, is the pattern that gathers a number of equivalent sequences (cf. Figure 1.5, p. 35). The organisation of this set of equivalent sequences is not random: they are ordered from the smallest utterance, namely the least uttered sequence (*al-kalima al-muffrada* (الكلمة المفردة)), to the largest one.

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[26] Our translation of: "Il s'agit de représenter les éléments linguistiques dans ce qu'ils ont de *général*, à savoir la structure qui leur est commune et qui doit faire, à elle seule, l'objet de l'explication, tout le reste doit rester dans l'ombre (tant qu'il n'y a pas perturbation de la structure par des facteurs extérieurs à elle). Il s'agit donc d'une véritable *méthode de simulation.* Les schèmes ne sont, en fait, que (…) des constructions artificielles que l'on *substitue* à la réalité pour des raisons d'efficacité heuristique (et aussi démonstrative) et qui, par ce fait même, ne sont jamais *identiques* aux éléments de la langue. Le caractère épuré et schématique des *miṯāl-s* permet aux linguistes de s'élever au-dessus de la multiplicité des fait et de *reconstruire* la langue à l'aide de ces modèles." (Ibid.: I, 209)

[27] The linguistic unit at the central level of analysis according to the neo-khalilian theory.

1.2.4. The *mawḍi‘*

The positions of the *ḥadd* are called *mawāḍi‘* (مواضع, i.e., plural of *mawḍi‘*). The concept of *mawḍi‘* (موضع) is essential to the analysis of the Arab grammarians, since it exists at each level of language from the very lower to the higher ones. It has the meaning of a position in a structured pattern[28] rather than the place of occurrence of an element in language.[29] The *mawāḍi‘* (المواضع) are discovered through the comparison (i.e., the *qiyās*) of two or more sequences. For the early Arab grammarians, each position of the pattern denotes a *dalāla waḍi‘ya* (دلالة وضعية i.e., the denotation that derives from the *waḍ‘* (وضع)) so the pattern constitutes a formal basis for the analysis of the meaning deriving from the *waḍ‘.*

The *mawḍi‘* is a virtual entity since it can be empty[30] or contain one or more elements. In addition, a *kalima* can occupy more than one position. This is the case of the demonstrative pronoun *hāḍa* (هذا, i.e., this) in the examples below:

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[28] In the pattern of the nominal *lexie*, for example, each constituent of the *lexie* has a specific position: the determiner always appears in the first position on the right (in the perspective of the Arabic language which is written from right to left) of the *aṣl* (أصل, kernel).

[29] In this case, the Arab grammarians use rather the term *mawqi‘* (موقع).

[30] In fact, generally speaking, each position of the pattern can be empty, except that of the kernel. In this case, we speak of what Sībawayh called *tark al-‘alāma* (ترك العلامة). For example, the position of the mark of the feminine that contains "*-t* ", when it is empty, denotes the masculine. We say that the masculine is denoted by the zero mark and it is symbolised, in the neo-khalilian theory, by *Ø*.

↔ **0**	→ **1**	→ **2**		→ **3**
# Zayd	u	-n		al-ṭawīl # (e.g. 1.4) [31]
__# hāḍa__		al-raǧul	u	al-ṭawīl # (e.g. 1.5) [32]
_____# hāḍa # (e.g. 1.6) [33] _____				

Figure 1.3

1.2.5. The *taḥwīl*

The Arab grammarians gave a great importance to the notion of *taḥwīl* (**تحويل**, i.e., transformation), since they considered the whole linguistic system as a transformational network in which each linguistic unit is to be considered to be either an *aṣl* (**أصل**), or a *far'* (**فرع**) deriving from the *aṣl* : "*each linguistic entity is either a kernel upon which other elements are structurally integrated or is an entity which is derived from one or more kernels according to a given pattern*"[34].

Within a linguistic pattern, the transformations allow to add elements to the left and the right of the kernel according to the rules of the linguistic system in question. These transformations define the elements of the pattern of the linguistic unit according to the different positions in which they can appear. Each transformation has a corresponding operation which is the transformation in the opposite direction.[35] The first Arab grammarians, in this case, speak of *raddu al-šay'*

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[31] **زيد الطويل** (i.e., The tall Zayd)

[32] **هذا الرجل الطويل** (i.e., This tall man)

[33] **هذا** (i.e., This)

[34] "*kulu kayān luġawī 'imā 'aṣlu šay'in yubnā 'alayhi ġayruhu 'aw far' yubnā 'alā 'aṣlin 'aw 'uṣūl ma' miṯālin sābiq*" (Sībawayh: I, 22).

" **كلّ كيان لغوي إما أصل يبنى عليه غيره أو فرع يبنى على أصل أو أصول مع مثال سابق.**"

[35] The Arab grammarians used also the term of *at-taḥwīl at-taqdīrī* (**التحويل التقديري**) to refer to the *transformation* that allows the linguist to detach himself from the form that is directly

ilā aṣlihi (ردّ الشيء إلى أصله). According to Hadj-Salah, this reversibility brings us to speak of a true algebra structure forming what is called in mathematics a group.

1.2.6. The *aṣl* and *far‘*

The two concepts of *aṣl* (أصل) and *far‘* (فرع), i.e., respectively kernel and derived elements, identify the items of language. They allow the establishment of an order in the paradigmatic axis, since "*the term aṣl applies to any element which (…) invariably occurs in other forms of elements which are its furū‘* (فروع plural of *far‘*) *and which contains it and overlaps it by virtue of some kind of material and /or formal addition.*" (Hadj-Salah 1987). Two items can be said to have the same *martaba* if none of them is the *aṣl* of the other.[36]

1.3. The levels of language analysis according to the neo-khalilian theory

In the neo-khalilian theory, the analysis of language starts from a central level called the level of the *lafḍa* (i.e., the lexical level) from which it is possible to reach both higher and lower levels.

observable to reach the virtual form. This was mainly used in the case of ambiguous terms, or in case of utterances in which there is an elision or deletion, or which do not conform to the intended structure compared to their homologues -*naḍā'iruhum* (نظائرهم).

[36] More details about these two concepts are given in the following chapter, pp. 53-56.

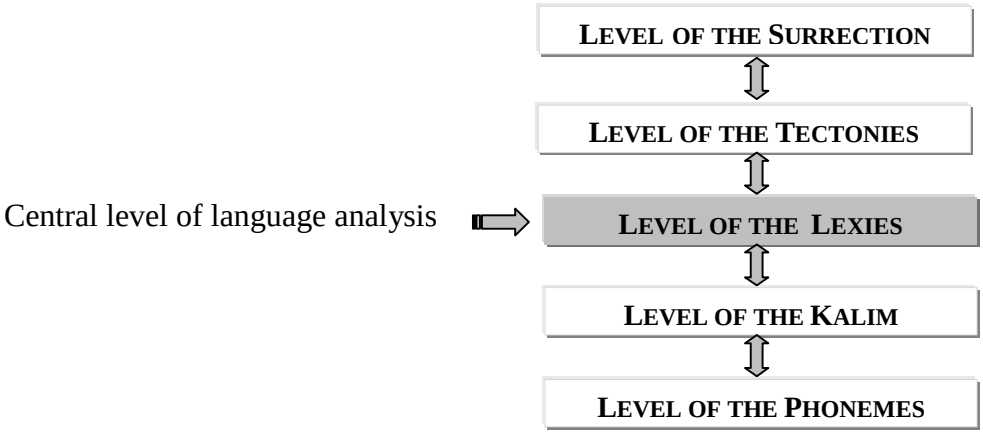

Figure 1.4 : Levels of language analysis according to the neo-Khalilian theory

Language is analysed downwards by looking for the signifying segments and their components, and upwards exploring how the minimal units form larger units. Let us see briefly the definition of each level and its linguistic units. For more clarity, we will present these levels from lower to higher ones. Particular attention is given to the lexical and the supra-lexical levels that are most important to the analysis we propose for the English language in this study.

1.3.1. The level of the *ḥurūf*-phonemes

It is the level of the phonemes or what Hadj-Salah (1979) calls the *ḥurūf*-phonemes instead of the term *ḥurūf* (الحروف, i.e., plural of *ḥarf*) to avoid the confusion

that might derive from *Sībawayh*'s use of the same term to refer to the significant-phonemes, i.e., the *kalim*[37]. The *ḥarf*-phoneme is the last segmental unit in Arabic. We can mention for example "*k*" ("ك") in "*laka*" (لك, i.e., yours) or "*b*" ("ب") in "*iḍrib*" (اضرب, i.e., bit). The *ḥurūf*-phonemes combine together to form the linguistic

[37] In fact, the *kalima* can be made up of only one *ḥarf* like the final -t of the 3rd person singular in the verb: *katabat* (كَتَبَت i.e., she wrote).

units of the level which is immediately higher than the phonological level, i.e., the *kalim*. They are described according to the place[38] and manner of articulation[39].

1.3.2. The level of the *kalim*

According to *Sībawayh* "*the kalim are a noun, a verb and a particle that brings a meaning which is neither a noun nor a verb*"[40]. This means that the *kalim*[41] were classified only into three categories[42]: the noun, the verb and the *ḥarf*[43]. In the neo-khalilian theory, the *ḥurūf* are essential for the formal definition of the linguistic

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[38] The place of the organs producing the *ḥarf* is called *maḫraǧ* (مخرج) and also *maqṭa'* (مقطع) (cf. Hadj-Salah 1979: II, 527-528).

[39] For the phonological system of Arabic, cf. Hadj-Salah (2004: 27).

[40] Our translation of: "*al-kalimu ismun wa fi'lun wa ḥarfun ǧā'a li-ma'nā laysa bī-ismin 'aw fi'lin…* " (Sībawayh: I, 2) "الكلم: اسم، و فعل، و حرف جاء لمعنى ليس باسم و لا فعل."

[41] For Hadj-Salah, "the *kalima* is the linguistic unit that appears in one of the positions contained in the lexical pattern. It is a meaningful segment whose minimal nature derives from the pattern in question and not from its content (which is minimal only in relation to it)." (Hadj-Salah 1987)

[42] This is also what is reported by Versteegh in this paragraph:

> Three parts of speech are recognized in Arabic grammar: noun (ism), verb (fi'l), and particle (ḥarf); pronouns and adjectives are counted as nouns, and so are verbal nouns and participles. Adverbs do not constitute a separate part of speech but are analyzed as nouns or particles used in adverbial phrases of time and place (ḍarf), a functional category. Particles are a rest category containing all indeclinable words that are not verbs, such as prepositions and conjunctions. Only verbs and particles can act as operators. (2006: 435).

[43] To give an example of the *ḥarf*, we can mention the preposition, ḥarf al-ǧarr (حرف الجرّ) "fī" (في, i.e., in), in "fī-l-kitāb" (في الكتاب, i.e., in the book), and the determiner "al" (ال, i.e., the) in "al-kitāb" (الكتاب, i.e., the book) and "lā" (لا, i.e., not) in "lā 'urīd" (لا أريد, i.e., I do not want). Note that each of these three examples (i.e., "fī"في, "al" ال and "lā"لا) are neither nouns nor verbs but they denote a meaning. The last one, for example, "lā" denotes the negation.

units, because it is their appearance in a given pattern that enables us to differentiate, for example, a noun from a verb.

The *kalima* as a grammatical concept is not always equivalent to the concept of morpheme (i.e., the smallest meaningful segmental unit), because we have to make the difference between, on the one hand, the significant element that can be omitted without any damage or change with regard to the *binā'* (**بناء**, i.e., construction), this is the case for example of the preposition, *ḥarf al-ǧarr* (**حرف الجر**) *fī* (**في**)[44], and from the other hand, those whose deletion alters the linguistic units. This is the case of -*ta* (**ت**) which appears in *'ifta'ala* (**افتعل**). These are morphemes and not *kalim* because they have fused in the structure of the linguistic unit in which they are integrated and have became constitutive elements that do not have the characteristic of independence.

The *kalim* are not analysed immediately into phonemes, but into two constituents, i.e., a pattern: *wazn* (**وزن**, i.e., a sequential pattern) and a substance: *māda* (**مادة**, i.e., a set of consonants). This is possible using a vertical analysis which frees the two constitutive elements synthesised in the *kalima*[45]. The *wazn* is the result of a sequence of a number of constant vowels and a number of changing and varying consonants that are symbolised by the consent of all the Arab grammarians by: f (**ف**), ' (**ع**), l (**ل**) (cf. Footnote 17, p. 23). While the substance, i.e., *al-māda*

[44] In fact, its deletion affects neither the linguistic unit nor the *ḥarf* itself as a signifying element

[45] This analysis is called by Hadj-Salah (1979) '*tectolyse'.*

(المادة), consists of the consonants that are poured in that pattern; this means that they can replace the: f, ‘, l of the generating sequential pattern. We can give the example of *kataba* whose *wazn* is: *fa‘ala* (فعل) and *māda* is: k - t - b (ك-ت-ب).

1.3.3. The lexical level

It is the central level of language analysis since, as we have already mentioned, it is the level from which we depart to reach both higher (i.e., the level of the *tectonie* and that of the super government) and lower levels (i.e., that of the *kalim* and that of the phonemes). The linguistic units at this level are called *lexies*.

The term *lexie* is used by Hadj-Salah (1979) to translate the term *lafḍa* (لفظة) that was used for the first time by *al-Raḍī al-’istrabadī* (الرضي الاسترابادي) to refer to the linguistic units of the lexical level. *Sībawayh* refers to it as a group of *kalim* which behaves as one *kalima*. The lexie is a “*kalima mufrada*” (كلمة مفردة) or “*mā bi manzilati kalimatin wāḥida”* (ما بمنزلة كلمة واحدة) (Cf. Hadj-Salah 2003: 25).[46]

1.3.3.1. The characteristics of the *lexie*

The *lexie* can be an *aṣl* (أصل, i.e., kernel) or a *far‘* (فرع, *i.e.,* derived element). The primitive *aṣl* is at the same time a unit of ‘*La Parole’* (from the point of view of meaning, *al-’ifāda* (الافادة)) and of ‘*La Langue*’ (from the point of view of structure, *al-lafḍ* (اللفظ)). It is defined by the *’infiṣāl* (الإنفصال) and the *’ibtidā’* (الإبتداء), which derive from *al-lafḍ.* It is a unit of communication since it is the smallest non-segmental unit

[46] i.e., each utterance that is equivalent to it (i.e., that has the same status): “*mā bi-manzilati al ismi al-mufrad or al-waḥid*” (ما بمنزلة الاسم المفرد أو الواحد) (Sībawayh: I, 3). Notice that the term *al-’ism al-mufrad* (الاسم المفرد) is used to refer to the least uttered sequence (Cf. Hadj-Salah 1979: II, 659-660) that can carry a message: the *aṣl*.

that can carry a message. The *'infiṣāl* (الانفصال) and *'ibtidā'* (الابتداء) are based on intuition[47] of the *faṣīḥ* speaker (فصيح, i.e., native speaker whose language has proved to conform the *qiyās*[48]), who decides if a sequence is or is not a separate unit of speech. To delimit this unit, the Arab grammarians speak of the *'infirād* of the *lexie* as a basic characteristic (الانفراد, i.e., the possibility of being isolable). Each unit, defined on its basis, can function as a minimal message.

The definition of the *lexie* as being the *aṣl* (الأصل) and all the *furū'* (الفروع, i.e., the larger sequences that are equivalent to the *aṣl* (bi-*manzilatihi* بمنزلته)) that derive from it, leads us to talk about another characteristic of the *lexie* which is the *tamakkun* (التمكّن also called *at-taṣarruf* (التصرف)). This latter is the capacity of a linguistic unit to receive addition in order to form larger *lexies*.[49] For the Arab grammarians, the *aṣl* is always more *mutamakkin* (أكثر تمكنا, i.e., can receive more

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[47] Even though these characteristics are intuitive, the Arab grammarians came up with a number of rules deriving from the regularity which was observed in the *samā'. al-'Anbārī* (الأنباري) says that : "*'i'lam 'anahu lā yattimu al-waqf 'alā al-muḍāf dūna mā 'uḍīfa 'ilayh, wa lā 'alā al-man'ūt dūna al-na't, wa lā 'alā al-mu'akkad dūna al-tawkkīd, wa lā 'alā al-mansūk - al-ma'tūf - dūna mā nusika 'ilayh…* " (al-Anbāri: I, 116-119). (i.e., : "the pause is impossible after the *muḍāf* (المضاف) without the *muḍāf 'ilayh* (المضاف إليه), nor the man'ūt (المنعوت) without the *na't* (النعت), nor the *mu'akkad* (المؤكد) without the tawkīd (التوكيد),…".

[48] Till now, we have handled the *qiyās* only from the point of view of its use as an important operational tool which is essential for any grammatical analysis of language. But this same term is also used to refer to the general system that distinguishes a language from another one. The *qiyās*, then, becomes a reference that allows to decide for the grammaticality of an item (grammaticality means *muwafāqa li-l-**qiyās*** موافقة للقياس). Though as we have said, if the experience proves that another item is used by the speakers, the found *qiyās* is classified as being virtual and the used item is the only accepted form.

[49] Hadj-salah says that "*each grammatical category has its own capacity [to receive additions] which can be equal to zero*" (Hadj-Salah 2003: footnote 11, p. 25).

addition) and is *'aḫaff* (أخفّ) compared to the *far'*. The *tamakkun* also allows the linguist to define the units of language because the units of the same category have nearly the same *tamakkun*.[50]

1.3.3.2.Types of *lexies*

There are two types of *lexies* in Arabic: the nominal *lexie* and the verbal *lexie*[51]. Each one of them has got specific generating patterns. The central position of the nominal *lexie* contains a noun, while the kernel of the verbal *lexie* has the specificity of being made of two *kalim:* the *fi'l* (الفعل, i.e., verb) and *fā'il* (الفاعل, i.e., subject[52]). As far as Arabic is concerned, the nominal *lexie* has one generating pattern while there are three patterns for the verbal *lexie* : one for the *māḍi* (الماضي , i.e., the

[50] We note that this concept of *tamakkun* is not applied in the same way for the nominal and verbal lexie. In the verbal lexie, for example, the position of "*-tu*" ("تُ" , i.e., first person singular affixed pronoun) in #*ḍarabtu*# (ضربت , i.e., I hit) cannot contain the zero mark (*ḍarabØ ضربْ*). On the other hand, it can contain a number of other elements like "*-a*" (to get *ḍaraba* (ضربَ , i.e., he hit)) or "*-ū*" (to get *ḍarabū* (ضربوا , i.e., they hit), and so on). So these *zawā'id* (زوائد), i.e., additions, are not of the same type as the kalim contained in the positions of the pattern of the nominal lexie (cf. Hadj-Salah 1979: II, 669).

[51] In the description of the Arabic *kalim,* grammar books usually start by the noun since it is considered to be the *aṣl* from which derives the verb, while the *ḥarf* is left at the end because, as we have already mentioned, it does not denote a meaning in itself, like the noun and the verb, but in the other linguistic units with which it occurs. This is what *Sībawayh* meant when he said: "*Wa-'ammā al-fi'lu, fa-amṯilatun 'uḫiḍat min lafḍi 'aḥdāṯi al-asmā', wa buniyat limā maḍā, wa limā yakūn wa lam yaqa', wa mā huwa kā'in lam yanqaṭi'*." (I, 40).

"وأما الفعل، فأمثلة أخذت من لفظ أحداث الأسماء، وبنيت لما مضى، ولما يكون ولم يقع، وما هو كائن"

[52] Some linguists use the term agent rather than subject. (cf. Versteegh 2006: 435).

past[53]), one for the *'amr* (الأمر, i.e., the imperative) and *another for the muḍāri'* (المضارع , i.e., the present[54]).

a. The nominal *lexie:*

The following figure shows us in detail the pattern of the nominal lexie:

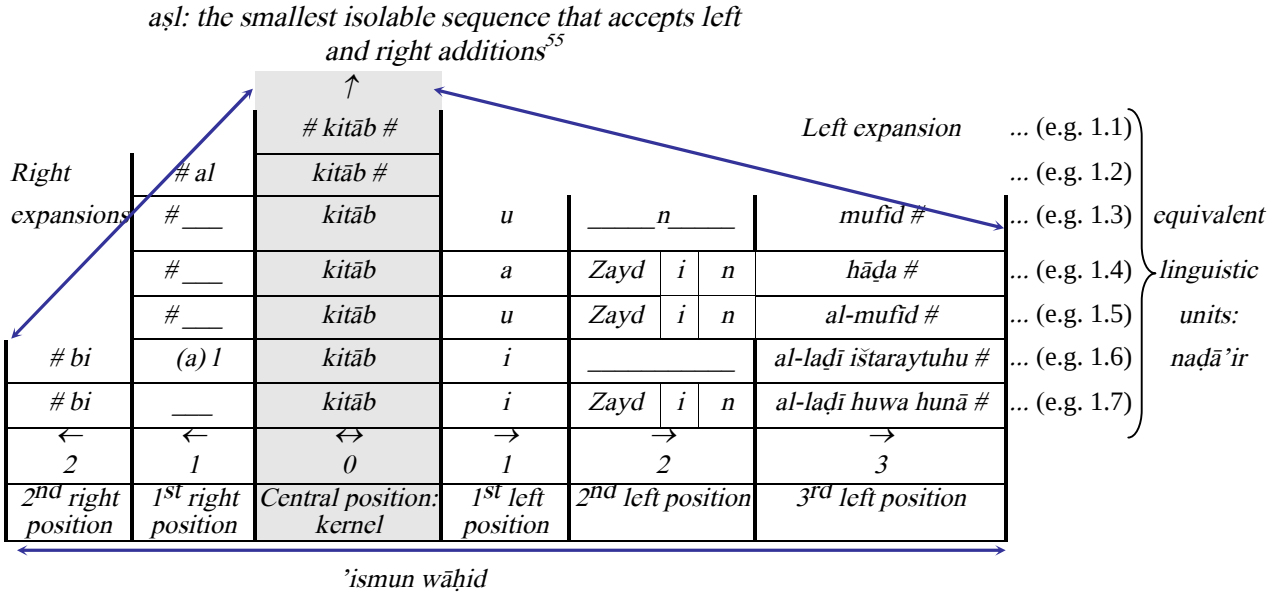

Figure 1.5: Generating pattern of Arabic nominal lexie (cf. Hadj-Salah 1979: II, 669)

e.g. 1.1	كتاب	*(i.e., a book)*
e.g. 1.2	الكتاب	*(i.e., the book)*
e.g. 1.3	كتاب مفيد	*(i.e., an interesting book)*
e.g. 1.4	كتاب زيد هذا	*(i.e., this is the book of Zayd)*
e.g. 1.5	كتاب زيد المفيد	*(i.e., the interesting book of Zayd)*
e.g. 1.6	بالكتاب الذي اشتريته	*(i.e., with the book which I bought)*
e.g. 1.7	بكتاب زيد الذي هو هنا	*(i.e., with the book of Zayd who is here)*

[53] i.e., the accomplished aspect. In this aspect, "*the action is considered as finished*" ("l'action est considérée comme finie, conduite à son terme" ((Fleisch 1974: 12) quoted by (Abi Aad 2001: 92)).

[54] i.e., the unaccomplished aspect. In this aspect, "*the action is considered as unfinished*" ("l'action est considérée comme non-finie, non-conduite à son terme, c'est-à-dire en cours de réalisation" (ibid.).

[55] Right and left here according to the Arabic language written from right to left.

The central position $\overleftrightarrow{0}$ is the pillar of this pattern and it is full in all the utterances. The linguistic unit that appears in this position gives the elements that surround it the characteristic of 'occurential constancy' (i.e., *al-istimrār* الاستمرار). In the example above, it is *kitāb* which is the kernel from which a number of nominal *lexies* are derived. Each new element which appears in the different positions of this pattern adds a denotation ('a *seme'* [56]) to the central element to which it is added. These are called specifying elements of the nominal *lexie: 'anāṣir muḫaṣṣiṣa* (عناصر مخصّصة). For example, the element contained in the position of the definite article adds definiteness.

In the pattern of the nominal *lexie,* we can find examples of two types of recursivity mentioned by the Arab grammarians: the linear recursivity (التكرار, i.e., *at-tikrār*) and the embedded recursivity (الإطالة, i.e., *al-'itāla*) (cf. Hadj-Salah: II, 798-780):

- The *tikrār* is the possibility of repeating the position in itself more than once[57]. We have, for example, the position of the *ṣifa* (الصفة, i.e., characterising element) in:

  ḥadīqat | u | al-manzili | **al-wāsi'ati** | **al-ğamīlati** … [58] (e.g. 1.8)

  1st repetition | 2nd repetition

[56] Bonnet & Barreau define the seme as being "la plus petite valeur dénotée" (1974: 65).

[57] It is a linear recursivity: *'itāla ḫaṭiya ġayr 'idrāğiya* (خطّية غير ادراجية) . Sībawayh calls it *takrīr* (تكرير) or *taṯniya* (تثنية) or *'aṭf* (عطف) .

[58] حديقة المنزل الواسعة الجميلة... (i.e., the wide beautiful …garden of the house)

This kind of recursivity characterises the position and not the element itself since it is the repetition of the position that allows the appearance of elements of the same type.

- We can also find an extension of the element that occupies the third left position, i.e., that of the *muḍāf 'ilayh* (المضاف إليه). In this case, it is not the position which is repeated but it is its content that is extended; this is why, this recursivity is called *itāla* (إطالة) which means literally lengthening[59]:

	# al	kitāb#				... (cf. e.g. 1.1: p. 35)
	# al	kitāb	u	_	al-laḍī ištarāhu Omar #	... (e.g. 1.9)[60]
	# al	kitāb	u	_	al-laḍī ištarāhu Omar al-laḍī huwa hunā...#	... (e.g. 1.10)[61]
←	←	↔	→	→	→	
2	1	0	1	2	3	

Figure 1.1

This second kind of recursivity leads us to speak about an important characteristic of Arabic linguistics and which Hadj-Salah (1979) calls '*l'imbrication des niveaux'*, which we translate by embedding. For exq;plem the third left position in the pattern of the nominal *lexie* can contain one *kalima* (*mufīd* مفيد or *hāḍa* هذا), or two (al- ال *and mufīd* مفيد) as well as a more complex syntactic structure that belongs to a higher level (*al-laḍī 'ištaraytuhu* الذي اشتيريته). All of these contents have the same function as, for example, the noun *al-mufīd* (المفيد).

[59] It is an embedded recursivity because there is an *'idrāǧ* (إدراج inclusion) of linguistic units of higher levels in the position of the constitutive elements of units of a lower level. In Arabic, this can happen with or without a coordinator (i.e., *rābiṭ* (رابط) like *'anna* أنّ).

[60] الكتاب الذي اشتراه عمر (i.e., the book that Omar bought)

[61] الكتاب الذي اشتراه عمر الذي هو هنا (i.e., the book which Omar who is here bought)

Before ending this section, let us speak about the types of linguistic relations existing at the level of the nominal *lexie* and which can be found at other levels as well. Namely the *Waṣl* (الوصل), the *Binā'* (البناء) and the *Ta'āqub* (التعاقب).

The *waṣl* (الوصل) is the simple concatenation having no effect on the segments that it relates. As far as the nominal *lexie* is concerned, this relation exists between the *aṣl* (i.e., the kernel) and the additions, which appear in the different positions of the pattern generating it. These elements are added and omitted without altering the central element of the *lafḍa* (i.e., the kernel) in the sense that it does not destroy this unit at the lexical level.

This kind of relationship is opposed to the *binā'* (البناء, i.e., structural integration) by which one element is structurally integrated upon another one (or other ones). The *binā'* being defined as:

> the integration of two elements in a unique structure with dependence of the first term with regard to the other term. In the *binā'*, there is necessarily combination: it is not a simple concatenation which has no effect on the unit which results from it since the deletion of any of the two components destroys the unit thus acquired.[62]

The *binā'* is not a simple concatenation which has no effect on the resulting unit because the deletion of any of the two constituents destroys the unit.[63] We can also

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[62] Our translation of : "L'intégration de deux éléments dans une structure unique avec dépendance du terme premier eu égard à l'autre terme. Dans le *binā'* il y a nécessairement combinaison: il ne s'agit pas d'une concaténation simple qui n'aurait aucun effet sur l'unité qui en est issue puisque la *suppression de l'une quelconque* des deux composantes *détruit l'unité* ainsi acquise." (Hadj-Salah 1979: II, 166-167)

[63] In the verbal *lexie*, for example, the deletion of the affixed pronoun *-tu* from *katabtu* (i.e., I wrote) is impossible since the resulting unit **katab* (wrote) does not exist in Arabic. We say that *-tu* is structurally integrated on (مبنية على, i.e., *mabniyya 'alā*) *kataba*. What we can do in

speak of the *ta'āqub* (تعاقب) or the exclusion. This type of relation exists, for example, between the definite article -*al* and the element of the adnominal complement (*muḍāf 'ilayh* (المضاف إليه)) and the *tanwīn* (التنوين).[64]

Note that these relationships do not exist exclusively at the level of the *lexie*. At the level of the *kalima* for example, there is the *binā'* since we deal with a construction involving the integration of the pattern and the substance. While at the supra-lexical level, we can find examples of both cases.

b. The verbal *lexie*:

Sībawayh took into consideration in his division of the Arabic verb the aspect:

a- The verbs which are constructed[65] for past actions or states[66]. These verbs are of the *bāb* of *fa'ala* (فَعَلَ , i.e., He did). These are known in grammar as *al-fi'l al-māḍī* (الفعل الماضي). *ḍahaba* (ذهب , i.e., He went) is one of the examples given by Sībawayh.

b- The verbs that are constructed for what is being, but has not occurred yet.

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these cases is only replace *–tu* (تُ) by another linguistic unit which is equivalent to it (cf. this chapter, footnote 50, p. 34).

[64] For Ibn Ǧinnī, the *ta'āqub* (the exclusion) is the *taḍād* (the opposition) (التضاد) by which an element is omitted when another element is introduced in the pattern (cf. Hadj-Salah 1979: II, 679).

[65] This is our translation for the term "*buniyat*" (بنيت) used by Sībawayh. This means that this description is based on the form of the verb: i.e., its ṣīġa (الصيغة).

[66] "*buniyat limā maḍā (…) Fa-'amma binā'u mā maḍā fa-ḍahaba wa sami'a wa makuṭa wa ḥumida.*" (Ibid.) ("بنيت لما مضى ... فأما بناء ما مضى فذهب وسمع ومكث وحمد.")

These are of the *bāb* of *ifʿal* (**افْعَلْ** , i.e., *Do*), which is used to command the addressee, and those of the *bāb* of *yafʿalu* (**يَفْعَلُ** , i.e., *To do* in the present), which is used when the speaker wants to inform about something[67]. These are known in grammar respectively as *al-fiʿl al-ʾamr* (**الفعل الأمر**), such as *iḍhab* (**اذهب**, i.e., *Go*) and *al-fiʿl al-muḍāriʿ* (**الفعل المضارع**), such as *yaḍhabu* (**يذهب**, i.e., *To go* in the present).

c- The verbs that are constructed for what is happening and is not completed. These are of the *bāb* of *yafʿalu* (**يفعل** , i.e., *To do* in the present), known in grammar as *al-fiʿl al-muḍāriʿ* (**الفعل المضارع**).[68]

We can schematise these three categories of verbs in the following figure:

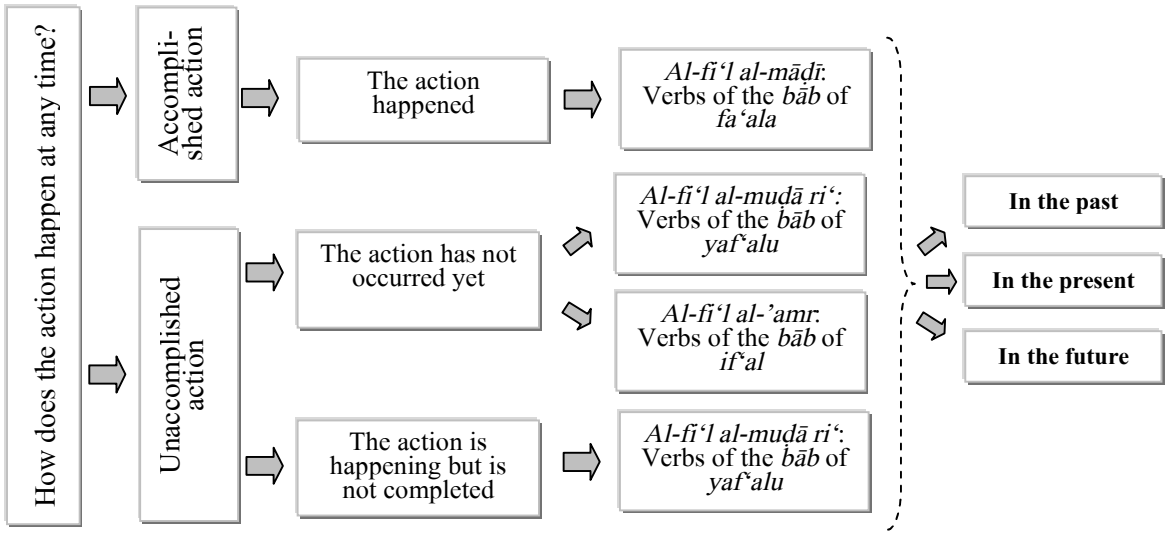

Figure 1.6

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[67] "*wa limā yakūn wa lam yaqaʿ (…) Wa ʾammā binā'u mā lam yaqaʿ fa-ʾinnahu qawluka āmiran: iḍhab wa uqtul wa iḍrib, wa muḫbiran: yaḍhabu wa yaḍribu.*" (Ibid.)

"ولما يكون ولم يقع (…) وأما بناء ما لم يقع فإنّه قولك آمرا: اذهب واقتل واضرب، ومخبرا : يذهب ويضرب"

[68] "*wa mā huwa kā'in lam yanqatiʿ (…) wa kaḍalika binā'u mā lam yanqaṭiʿ wa huwa kā'in iḍā aḫbarta.*" (Sībawayh: I, 40) "وأما ما هو كائن لم ينقطع (…) وكذلك بناء ما لم ينقطع وهو كائن إذا أخبرت"

The other grammarians use the concept of time in their definition of the Arabic verb forms[69] dividing the Arabic verb into three categories: *al-māḍī* which is defined as a form used for the past; *al-muḍāri'* which is defined as a form used for the present and the future; *al-amr* which is defined as a form used for the commands.

This division, which is unfortunately the one adopted till now in the books used for the teaching of Arabic, is misleading[70], because *al-māḍī* can be used for past, current and future actions. When we say, for example, *ḫaraǧa zaydun* (e.g. 1.11) (**خرج زيد**, i.e., Zayd got out). All we know about the action is that it is accomplished, but we do not know when it took place: it could have happened in the past: *ḫaraǧa zaydun ams* (e.g. 1.12) (**خرج زيد أمس** , i.e., *Zayd got out yesterday*), or now: *ḫaraǧa zaydun al-'ān* (e.g. 1.13) (**خرج زيد الآن** , i.e., *Zayd has just gone out*),

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[69] In fact, it is because "*the accomplished was particularly used for the past [that] the grammarians have called it al-māḍī* (الماضي) *«the past»*" ("l'accompli se prêtait particulièrement à rendre le passé: les grammairiens l'ont donc appelé al-māḍī «le passé»" (Blachére & al. 1975: 36)). Faced with a great difficulty of giving a name to the verb denoting the unaccomplished aspect, they finally decided to use the term "*muḍāri'* " which means literally: "*what resembles*" because it resembles the noun in its flexion (case endings) (Cf. Blachére & al. 1975: 36) (For Versteegh (2006: 435), "*the imperfect yaktubu 'he is writing', (...) is said to resemble the noun, since it can be used in some syntactic environments in which a participle (a nominal form) is used. This is why it receives case endings.*").

[70] Though it is not totally untrue, since the *māḍī* if used without additional elements denotes a past action and the *muḍāri'* if deprived (إذا جرّد) from its additions and is used outside any context denotes a present action (for more details Cf. Blachère & Gaudefroy-Demombynes (1975: 246)). But, we emphasise that this classification of the Arabic verb is quite complex since it is based on three different criteria: "that of tense (*māḍī*: past), of morphology (*muḍāri'*: resembling -to the noun-) and of the modality (*'amr*: imperative)." (Aad 2001: 147). [Our translation of: "celui du temps (*māḍī*: passé), de la morphologie (*muḍāri'*: semblable –au substantive-) et de la modalité (*'amr*: imperative)."].

or in the future: *In ḥaraǧtu ḥaraǧa zaydun* (e.g. 1.14) (إن خرجت خرج زيد , i.e., *If I go out, Zayd will go out*)[71]. (Cf. Hadj-Salah n. date: 3).

This is clarified in the following figure:

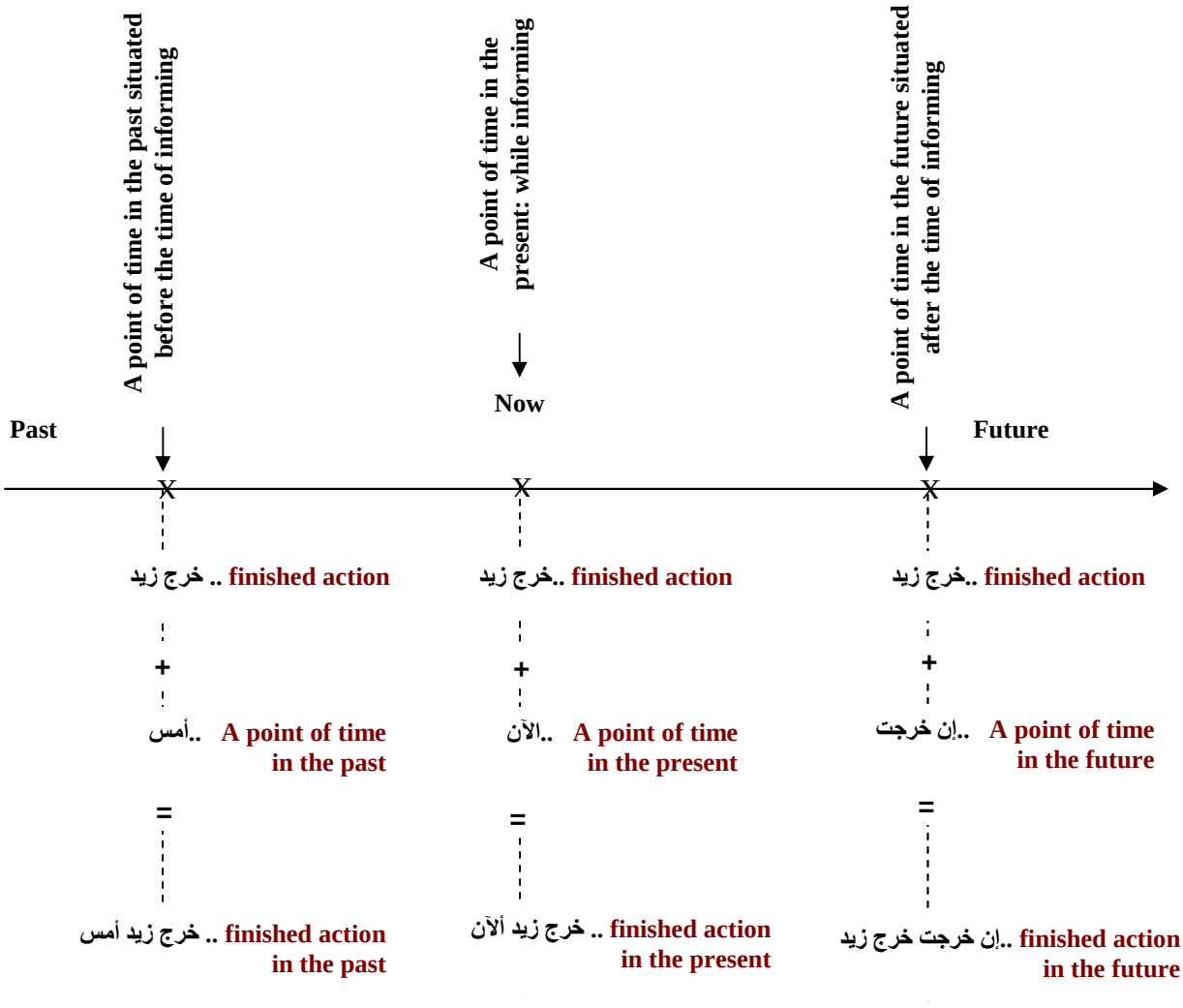

Figure 1.7

This is also the case of the unaccomplished aspect denoted by the verb *al-muḍāri'* as it is shown by the example: *yaktubu ar-risālata* (e.g. 1.15) (يكتب الرسالة, i.e *he (to write) the letter*):

[71] إن ('in) indicates a condition (cf. (W. Wright 1955, II: 347), quoted by (Abi Aad 2001: 115)).

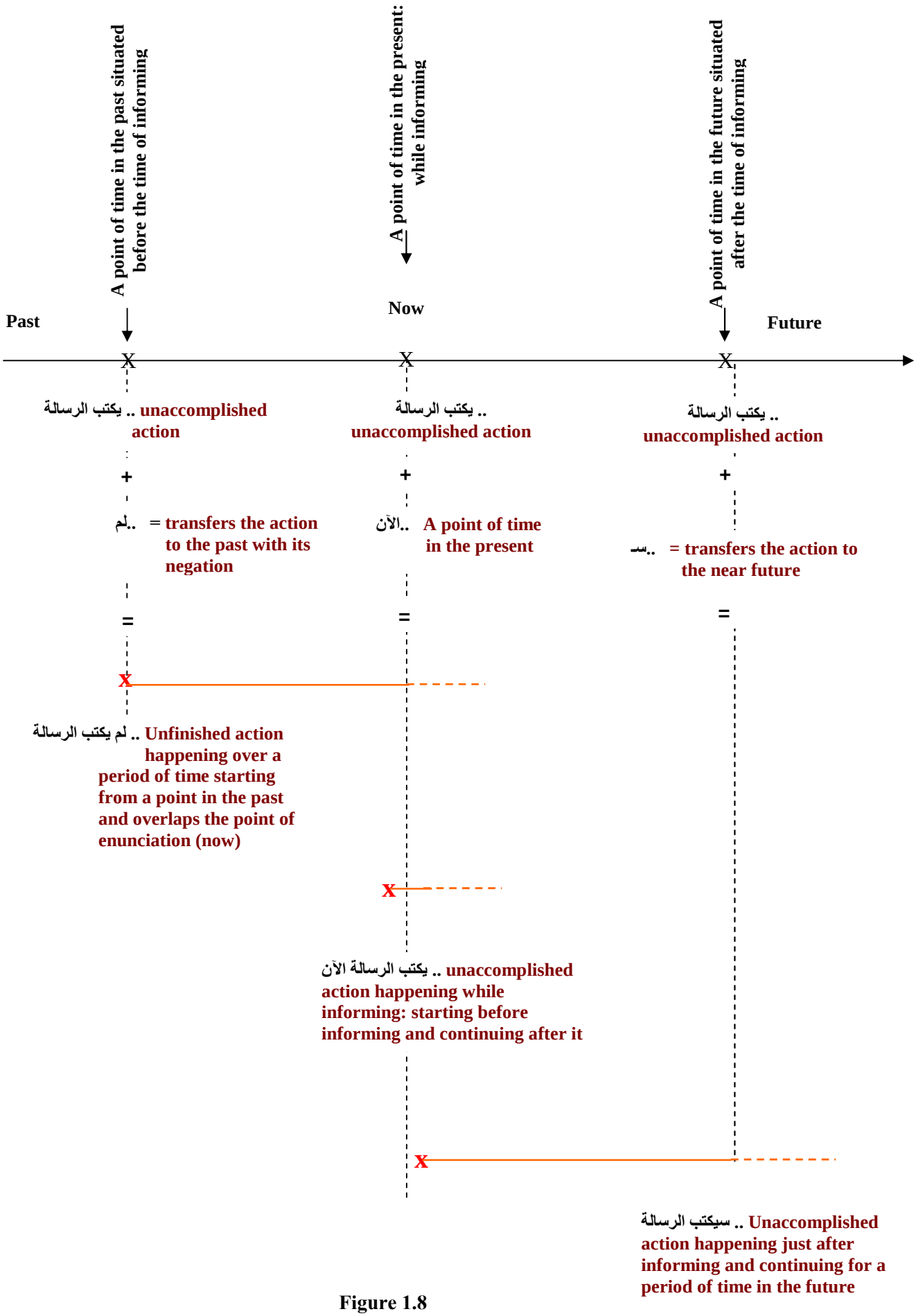
A point of time in the past situated before the time of informing
A point of time in the present: while informing
A point of time in the future situated after the time of informing
Past
Now
Future
يكتب الرسالة .. unaccomplished action
يكتب الرسالة .. unaccomplished action
يكتب الرسالة .. unaccomplished action
+
+
+
لم.. = transfers the action to the past with its negation
الآن.. A point of time in the present
سـ.. = transfers the action to the near future
=
=
=
X
X
X
لم يكتب الرسالة .. Unfinished action happening over a period of time starting from a point in the past and overlaps the point of enunciation (now)
يكتب الرسالة الآن .. unaccomplished action happening while informing: starting before informing and continuing after it
سيكتب الرسالة .. Unaccomplished action happening just after informing and continuing for a period of time in the future

Figure 1.8

Following Sībawayh's description, Hadj-Salah (1979) proposes three patterns based on the form of the verb (*aṣ-ṣīġa*: الصيغة). Two aspects are distinguished: the perfective aspect (*l'accompli*), which denotes that "*the action is completed*"[72], and the imperfect (*l'inaccompli*): which denotes that the "*the action is taking place without being accomplished*"[73]. While *al-amr* (الأمر, i.e., the imperative), "*always denotes an action which has not happened yet*"[74]. It is also unaccomplished: unfinished or non perfective. Time is rather presented as being an element which is denoted by the determiners which occur in the different positions of the pattern of the verbal *lexie*.[75]

In this perspective, Hadj-Salah (1979) suggests one pattern for the accomplished aspect, that of the *māḍī*, and two others for the unaccomplished aspect, one for *al-muḍāri'* and one for the *'amr*. A fourth general pattern is proposed to regroup the three preceding patterns. For more details about these patterns, we invite the reader to go to Appendix one.

The verb can also be analysed at the level of the *kalima* in the following way:

---

[72] Our translation of: "*que l'action est achevée*" (Blachère & Gaudefroy-Demombynes 1975: 36)

[73] Our translation of: "*que l'action est entrain de se réaliser, sans être accomplie*" (Ibid.)

[74] "*ammā ṣīġatu al-'amri fatadullu 'alā ḥadaṯin lam yaqa' ba'd*" (Cf. Hadj-Salah, handout, n. date: 3). "أما صيغة الأمر فتدل دائما على حدث لم يقع بعد."

[75] Hadj-Salah (1979: II, 181) clarifies this by the opposition between *fa'ala/sa-yaf'alu* (فعل/سيفعل, i.e., He did / he will do):

Mark of tense	Pattern-mark of aspect
∅	fa'ala
sa-	ya-f 'alu

Figure 1.9

We can clarify more this kind of analysis through the example of *kataba* (كَتَبَ , i.e., He wrote):

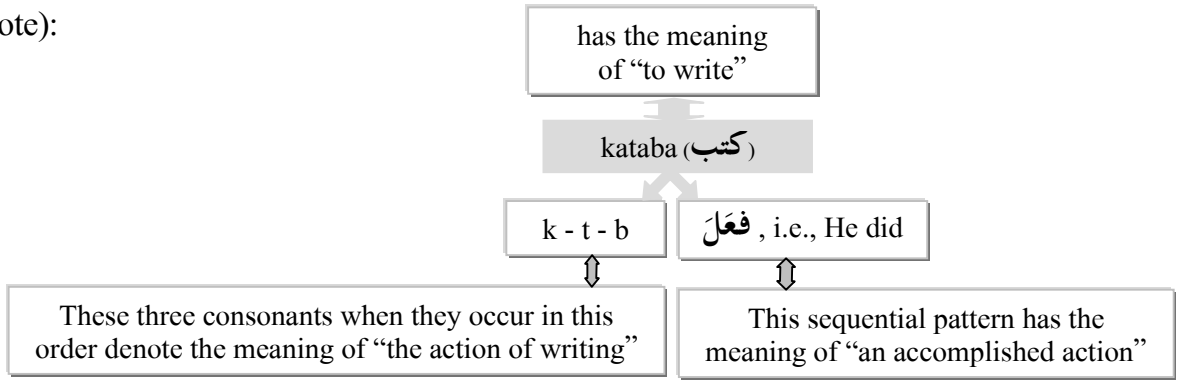

Figure 1.10

Let us examine also the verb: *šaribtu* (**شربت**, i.e., I drank), which is an example of a VS (verb-subject) construction containing an intransitive verb. *šaribtu* is indivisible into smaller sequences in speech, since we cannot say: **šarib-* (drunk) or **-tu* (ت, i.e., affixed pronoun of the first person singular). What we can do is replace each segment with other equivalent units in the following way:

šarib	**ū**	شربوا , i.e., They drank
šarib	**tu**	شربت , i.e., I drank
sami'	**tu**	سمعت , i.e., I heard

Figure 1.11

This is called by Hadj-Salah '*ziyāda disjonctionnelle'* and this kind of linguistic units like *-tu* (ت) *and -ū* (وا) are called *intralexical kalim*. Upon this criteria of indivisible sequences[76], Hadj-Salah proposes formal patterns generating the Arabic

[76] The verb cannot be actualised without its subject. This is why also it is said to be *aṯqal* (أثقل, *i.e.,* literally more heavy because of the weight of the additions).

verb with a central position in which appears a kernel which is made up of two elements [fi'l x ḍamīr] ([فعل x ضمير], i.e., [verb x affixed personal pronoun])[77].

We speak of a real *binā'* between the personal pronouns and the verb and not a simple concatenation. And this is why the constructions of the kind of *ḍarabtuhu* (**ضربته**, i.e., I hit him) are at the same time both *lexies* and *tectonies*. It is a *lexie* because this least utterable unit can receive additions and at the same time it is made up of a governor (*'āmil* **عامل**), consisting of a verb (*fi'l* **فعل**) and governed terms (*ma'mūl* **معمول**)[78], consisting in the subject (*fā'il* **فاعل**) and the object (*maf'ūl* **مفعول**). As a lexie, it is analysed in the following way:

Kernel		*Complement*
# ḍarab	*-tu*	*-hu #*

... (e.g. 1.16)

Figure 1.12

and as a *tectonie* as follows[79]:

Governing element	First governed element T_1	Second governed element T_2
# ḍarab	-tu	-hu #

... (cf. e.g. 1.16)

Figure 1.13

1.3.4. The level of the *tectonies*

According to the neo-khalilian theory, the nature of the structure of the tectonie excludes any segmental analysis, because at this level we do not handle directly units

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[77] These two elements behave as one sequence: "fa-l-fi'lu wa-l-fā'il bi-manzilati ismin wāḥid 'ay lafḍatun yubnā 'alayhā 'aw tubnā 'alā ġayrihā" . (Ibn Ǧinnī: 257) .

"فالفعل والفاعل بمنزلة اسم واحد أي لفظة يبنى عليها أو تبنى على غيرها"

[78] For the concepts of governor and governed terms, cf. the following section dealing with the level of the tectonie.

[79] Linguistic units generated by the pattern (R → T1, T2), cf. the following section for more details.

of lower levels, but units of a more abstract nature. This is why Hadj-Salah refers to a real abstraction which transforms a group of positions (real and virtual) to a pattern in which the units of the inferior level and some *kalim* are integrated in a specific way. These units are governing[80] (R) and governed elements (Ti) and some peripheral elements (D).

The generalised pattern of the tectonie is represented in Hadj-Salah (1979) by the pattern: $(R \rightarrow T_i) \pm D$. This pattern is further detailed according to whether there is a *binā'* on the *'ism* (البناء على الاسم) or on the *fi'l* (البناء على الفعل): the governing element can be expressed ((E (like *Inna*) / V_e (like *Kāna*) / V (like *ḍaraba*)) or non expressed (Ø)[81]. In the latter case, the position of the governing element is empty. This case of governance is called *at-ta'riya min al-'awāmil al-lafḍiya* (التعرية من العوامل اللفظية) and the governing element in this case is called *al-'ibtidā'* (الإبتداء).

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[80] For Versteegh:

> the choice of the words "governor" and "governance" in the translation of the Arabic terms conjures up the image of modern linguistics and specifically the government and binding model. This raises the question of the permissibility of such terms in translating Arabic grammatical theory. In fact, any translation of technical terms from another tradition poses a problem, since even terms such as "noun", "verb", "nominative", "accusative", "morphology", or "syntax" are closely connected with the Western grammatical tradition and therefore likely to distort the original meaning. (1997a: 6)

[81] Ø stands for the "'ibtidā'" that is the zero mark; E stands for "exposant"; D for the peripheral elements; Ve for an exponential verb and which is the only type of verbs that occur as the governors in the nominal construction. What is specific to these verbs is that it is possible to omit them with a return to the kernel made up of a governing element that is Ø and two governed terms; while, in other types of structures, the deletion of the verb destroys the *tectonie*. In addition, these verbs can govern up to four terms when they are tri-transitive.

The unit (R → T_1) constitutes the basic syntactic pattern at this level. It is refered to by Hadj-Salah the *'pivot'* of the *tectonie* upon which T_2 (or eventually T_3 and T_4) is structurally integrated. D are peripheral units whose deletion does not destroy the syntactic unit[82] at that level, like *'ams* (أمس , i.e., yesterday) in Figure 1.17 (p. 49), while the deletion of one of the constitutive elements of the *tectonie* destroys the unit. The number of governed elements cannot exceed four because the verb in the position of the governing element can be mono-transitive (like *halaka* هلك), di-transitive (like *ra'ā* رأى) or tri-transitive (like *'a'lam* أعلم).

The positions of the *tectonie* can contain a single *kalima* like *Kāna* in R (cf. e.g. 1.17, p. 48), or a *lexie* like *al-raǧul al-ṭawīl al-laḍī ra'aytuhu* in T_1 (cf. e.g. 1.17) or an entire syntactic structure: a *tectonie* like *'a'lamtu 'Amran* in R (cf. e.g. 1.18) or *ḍarabtuhu* in T2 (e.g. 1.19):

R	**T_1**	**T_2**
# Kāna (V_e)	Al-raǧulu al-ṭawīl al-laḍī ra'aytuhu	qā'iman#[83]

… (e.g. 1.17)

Figure 1.14

R			**T_1**	**T_2**
R	**T_1**	**T_2**		
# 'a'lam	-tu	'Amran	Zaydan	qā'iman #[84]

… (e.g. 1.18)

Figure 1.15

R**Ø**	**T_1**	**T_2**		
		R_V	**T_1**	**T_2**
Ø	'Amarun	ḍaraba	-tu	-hu #[85]

… (e.g. 1.19)

Figure 1.16

---

[82] In fact, the deletion of *'Inna* or *Kana* brings us back to the *aṣl* (*Zaydun munṭaliqun*) while the deletion of *ḍaraba* or any other verb destroys entirely the *binā'*.

[83] كان الرجل الطويل الذي رأيته قائما (i.e., the tall man whom I saw was getting up.)

[84] أعلمت عمرا زيدا قائما (i.e., I told Amr that Zayd got up.)

[85] عمر ضربته (i.e., Amr I hit him.)

Before ending this section, we present the following figure which shows us the three kinds of relations which exist at the level of *tectonie* (cf. Figure 1.17: 49):

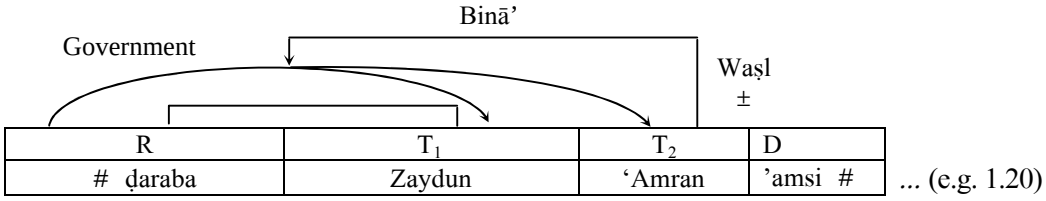

Figure 1.17

e.g. 1.20*: ضرب زيد عمرا أمس (i.e., Zayd hit 'Amr yesterday)*

We note also that the representation given to the *tectonie* can also be represented in the form of a tree as shown in the following figure representing the analysis of: # *Kataba al-awlādu al-kibāru tamārinahum* # (e.g. 1.21) (**كتب الأولاد الكبار تماريناهم**):

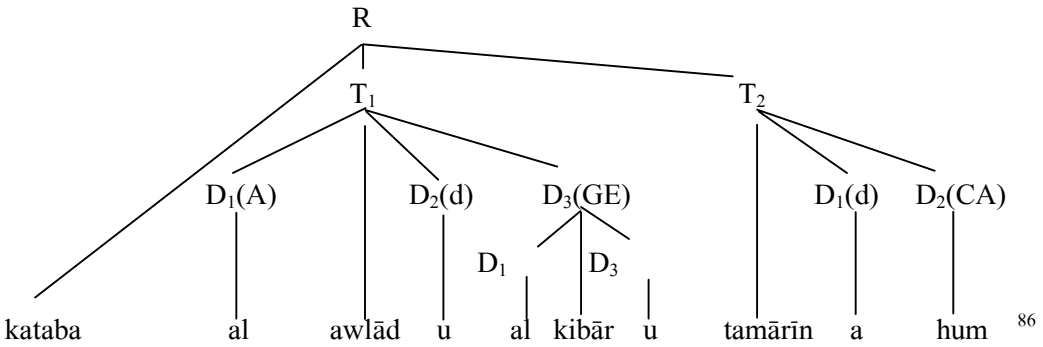

Figure 1.18 (Cf. Hadj-Salah 2004: 11)

1.3.5. The level of the super government

There are some linguistic units[87] which appear in the speech chain and that do not belong to the level of the *tectonie*; this means that there is another level that is higher

[86] "R = régissant ; T_1 = terme régi en 1er ; T_2 terme régi en 2ème ; D = déterminant ; A = article ; d = désinence casuelle; CA = complément adnominal ; GE = groupe épithète." (Cf. Hadj-Salah 2004: note 5, p. 11)

[87] like *hal* (هل) and *la-* (ل). These appear in the preceding patterns in a position labelled "outside the verbal lexie". This time, some *ḥurūf*, which "super-govern" the syntactic governors, appear in the position of the absolute *ibtidā'*.

than that of the *tectonie*. It is the level of super government (*fawqa al-'āmil wa al-taṣdīr* **فوق العامل والتصدير**). The Arab grammarians pointed out that these positions are situated at the very beginning. They are called *ḥurūf al-'ibtidā'* (**حروف الابتداء**).

Sībawayh referred to about these elements as having the *ṣadāra* (**الصدارة**): occupying the position of the absolute *'ibtidā'*, i.e., their position always precedes the positions of the other elements. These elements appear in the position of the *'istifhām* (**إستفهام**, i.e., interrogation) and *šarṭ* (**شرط**, i.e., condition). The relation that exists between the elements of the position of the absolute *'ibtidā'* and their two governed elements is a relation of structural integration (i.e., *binā'*).

At the super governmental level, just like the supra-lexical level, we handle terms like R, T_1 and T_2. However, the elements contained in the position of R appear only at this level. The generating pattern at this level is:

$\mathfrak{R}$	$\mathfrak{C}_1$	$\mathfrak{C}_2$
α , β	$([R \rightarrow T_1] T_{i>1} \pm D)_1$	$([R \rightarrow T_1] T_{i>1} \pm D)_2$

Figure 1.19 (Cf. Hadj-Salah 2004: 11)

Hadj-Salah (1979) gives the following example of the kind of constructions that can be contained in the pattern above:

R		T_1			T_2	
α	**β**	**R**	**T_1**	**T_2**	**$R \rightarrow T_1, T_2 \pm D$**	
# Ø	Law	lā-	Zaydun	(iḍmār)	la-halaktu # [88]	… e.g. 1.22

Figure 1.20

[88] لولا زيد لهلكت, i.e., If it wasn't Zayd, I would have died

Conclusion

This chapter presents the neo-khalilian theory linguistic model and the way it analyses the Arabic language as a necessary step for understanding the procedure of analysis of English that will be presented in chapter two and the proposed English patterns proposed at the lexical and supra-lexical levels and which are presented in chapter three.

Chapter 2

- **PROCEDURE OF ANALYSIS**

Introduction

This chapter tries to clarify the procedure used in order to propose a linguistic analysis of English on the basis of the concepts of the neo-khalilian theory. We shall show how the English linguistic units may be defined using concepts such as the *qiyās*, the *ḥadd*, and the *aṣl* and *far'*. The central point around which our analysis develops will be, just as in the neo-khalilian theory, the search for the kernels (the first elements) that can be part of a construction and not a simple inclusion (Cf. Hadj-Salah 1979: I, 137) and the extraction of the patterns representing in an abstract way the common 'objects or behaviors' existing in each group of linguistic items.

2.1. The construction of the internal hierarchy of the language system

By following the analytical procedure that will be described in detail in the following sections[1], we shall try to simulate the internal hierarchy of the language system which is supposed to underlie the functioning of the English tense forms. For this, we shall try to simulate the organisation of language system which displays the links between the linguistic structures, and then, explore the power of the *qiyās*[2] as an important methodological tool of Arabic linguistics. This hierarchy is based on the system of *marātib* (**المراتب**, i.e., virtual positions) which organises the linguistic units into levels resulting from relating derived units, i.e., *furū'* (**فروع**), to

[1] Cf. mainly section 2.3, p. 60.

[2] We have mentioned only these concepts but in fact the use of these ones implies all the concepts described in chapter one; such as *al-bāb*, *al-ḥadd*,…

structures which are derivable, i.e., *uṣūl* (أصول). In conjunction with this, we shall suggest how the derivational processes from the former to the latter take place.

In fact, by classifying the linguistic units into *'uṣūl* and *furū'*, we are at the same time determining the *martaba* (مرتبة) of each linguistic element (linguistic unit or operation) and, thus, characterizing the internal system of language[3], since for the Arab grammarians, as already mentioned in chapter one, everything in language is either an *aṣl* or a *far'* derived from an *aṣl* by means of a transformation (cf. Hadj-Salah 1979: I, 122):

> all the linguistic phenomena whatever they are, are necessarily either furū' [derived elements] or 'uṣūl [elements from which other elements are derived], or both of them at the same time […]. This way of being of linguistic elements or these phenomena of dependence have been interpreted by the Arab linguists according to two points of view: that of a genetic derivation and that of a logico-mathematic combinatory.[4]

The *aṣl* is "*what exists and functions by itself with regard to its furū'. It is also what is given and not what is constructed* (*mā yu-bnā 'alayhī wa-lā yu-bnā 'alā*

[3] We note here that, for Hadj-Salah, the classification of language units hierarchically from the *uṣūl* (plural of *aṣl*) to the *furū'* (plural of *far'*) must not be interpreted diachronically as a classification with regard to time, but with regard to criteria like autonomy and economy. (cf. this chapter, p. 55)

[4] Our translation of: "Tous les phénomènes linguistiques, quels qu'ils soient, sont nécessairement soit des *furū'* soit des *uṣūl*, ou les deux en même temps: *furū'* par rapport à d'autres prototypes plus généraux, et *uṣūl* par rapport à des métatypes plus spéciaux. Cette manière d'être des éléments linguistiques ou ces phénomènes de dépendance ont été interprétés par les linguistes Arabes selon deux points de vue: celui d'une dérivation génétique et celui d'une combinatoire logico-mathématique." (Hadj-Salah 1979: I, 129)

ġayrihi ما يبنى عليه ولا يبنى على غيره (cf. Ǧurǧānī))"[5]. To distinguish the *aṣl* from its *furū'*, it is important to know that :

> the aṣl is not only what is first with regard to its furū', but also what, both in the objects themselves and in their behaviour, is invariable. It is the constant and permanent character of some phenomena which confers it the quality of aṣl. (…) the invariants constitute for the variables which belong to the same class of objects of reference, a common denominator or a set of permanent characters that all the furū' must possess : it is then a prototype whose particular reproductions are the furū'[6].

In fact, the *aṣl* does not need a mark (*'alāma,* علامة) to be distinguished from its *furū'*. On the contrary, as stated by *Ibn Ǧinnī*, "*it is the furū' which need 'alāmāt and not the uṣūl which do not need them at all*"[7].

We end this section by presenting the criteria which the *aṣl* must meet whether it is an object or a process (cf. Hadj-Salah 1979: I, 136-137):

1- Invariability ('*istimrār al-aṣl*'): "*compared to them* [i.e., the derived linguistic units]*, it appears as a substance or as a form, at the level of the content and/or of*

[5] Our translation of "Le aṣl est donc ce qui existe ou fonctionne par lui-même par rapport à ses furū'. C'est aussi ce qui est donné et non ce qui est construit (mā yu-bnā 'alayhī wa-lā yu-bnā 'alā ġay-rihī (Voir Ǧurǧānī, Ta'rīfāt, art. aṣl et far')).**"** (Hadj-Salah 1979: I, 135-136).

[6] Our translation of: "le *aṣl* est non seulement ce qui est *premier* par rapport à ses *furū'* mais aussi ce qui, tant dans les objets en eux-mêmes que dans leur comportement, est *invariable*. C'est le caractère *constant* et *permanent* de certains phénomènes qui leur confère la qualité de *aṣl*. (…) les *invariants* constituent pour les variables qui appartiennent à la même classe un objet de référence, un dénominateur commun ou un ensemble de caractères permanents que tous les *furū'* doivent posséder: il s'agit donc d'un *prototype* dont les reproductions particulières sont les *furū'* " (Hadj-Salah 1979: I, 131).

[7] Our translation of: "*ce sont les furū'* qui ont besoin de *'alāmāt* et non les *uṣūl* qui n'en ont guère besoin. " (quoted by Hadj-Salah (Ibid.: I, 136)).

the expression, in all these elements, and, reciprocally that no element among them can be reduced to it by any transformation".[8]

2- Zero mark: (*tark al-ʻalāma*): "*it includes always with regard to them [its furūʻ] the zero mark*".[9]

3- Autonomy (*istiġnāʾ*): It can, consequently, "*appear alone in some productions, while the other elements which are compared to it come only with it or in its context*".[10]

4- Not resulting from other elements (*ġayr musabbab*): "*It is not the effect or the consequence of none of these elements."*[11]

2.2. The power of the *qiyās*

In this section, we shall try to schematise the procedure of description, classification and analysis used by the early Arab grammarians. We shall clarify how the concept of *qiyās* as well as those of *aṣl* and *farʻ* are used not to examine the linguistic

[8] Our translation of: "comparé à eux, il apparaît comme substance ou comme forme, sur le plan du contenu et/ou de l'expression, dans tous ces éléments, et, réciproquement qu'il n'y ait aucun élément parmi eux qui ne puisse lui être réduit par une transformation quelconque (caractère invariant du aṣl: istimrār al-aṣl);" (Ibid.: I, 136-137).

[9] Our translation of: "il comporte toujours par rapport à eux, la marque zéro (tark al-ʻalāma);" (Ibid.).

[10] Our translation of: "il peut, par conséquent, se suffire à lui-même en ce sens qu'il peut se retrouver seul dans certaines réalisations, alors que les autres éléments qui lui sont apparentés ne se retrouvent qu'avec lui ou dans son sillage. C'est le principe d'autonomie ou istiġnāʾ (voir ci-dessous);" (Ibid.).

[11] Our translation of: "il n'est l'effet ou la conséquence d'aucun de ces éléments (*ġayr musa-bab*)." (Ibid.).

units for themselves but to approach and explain the general structure of language (cf. Hadj-Salah 1979: I, 27).[12]

At this point, it is important to emphasize the fact that the analysis of the early Arab grammarians was both empirical (experimental) and rational (logico-mathematical). In fact, according to Hadj-Salah (1979), these grammarians distinguished two distinct but complementary approaches in *'ilm al-'Arabiyya*:

> A linguistics considered as an experimental science and whose essential goal is the rational systematisation of facts and a hypothetico-deductive linguistics whose goal would be the examination of all the consequences that can logically derive from a given number of principles[13].

Thus, the *qiyās* is used to classify and systematize language facts: first a systematization of the existing facts (i.e., "*systematisation of the experience*"), then a systematization and extension of the existing facts by logical implication.

These two approaches: observation of what is really used and setting hypotheses about what is not found in the data corpus on the basis of a comparison (isomorphism) with regard to what is contained in the controlled data must not to lead to contradictions. In case there was any contradiction, the Arab grammarians were clear: the *samā'* (what is recorded from the real use of

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[12] We speak here of a careful observation of the linguistic items in order to relate them to each other and come out with what is common to them (i.e., what characterizes them). We speak here of "*Ḥamlu šay'in 'alā šay' in wa qiyāsihi 'alā naḍā'irihi*" (حمل شيء على شيء و قياسه على نظائره).

[13] Our translation of: "une *linguistique* considérée comme *science expérimentale* et dont l'objet essentiel est la systématisation rationnelle des faits et une *linguistique hypothético-déductive* dont le but serait l'examen de toutes les conséquences pouvant découler logiquement d'un certain nombre de principes." (Hadj-Salah 1979: I, 116).

language) had the priority over the *qiyās*[14]. Sībawayh said, for example:

> if we do not know the singular form, we must then stick to it [that is to say to the equivalent but existing facts] until we come to know it. This attitude has more strength than the one that would consist in inventing units which the Arabic speakers do not know[15].

This is also the point of view of *Ibn Ǧinnī who says*: "*if we come, by the logic of the qiyās, to use a given element and we notice afterwards that the Arab speakers use something else, we must leave this element and keep only what they [really] use*"[16].

We move now to present the steps described by Hadj-Salah (1979) and which are supposed to synthesize the method of the *qiyās* upon which Arabic linguistics is based. This method is made up of four steps:

First: the collection of data. We have already said that one of the important

[14] The concept of *qiyās* as a concept serves as a basis for the generation of items which may not have been heard yet (*qiyās tafrī'* قياس تفريع). The Arab grammarians were convinced that they could never be in contact -directly or through written data- with all that can be part of the *'Arabiyya*. The careful observation and the systematization of the confirmed data allows the extraction of what is constant and the representation of the structure of the linguistic items in an abstract way in order to generate all the possible items that conform to the *qiyās*.

[15] Our translation of: "Si l'on ne connaît pas la forme du singulier, il faut alors s'en tenir là (c'est-à-dire aux faits équivalents mais existants) jusqu'à ce que l'on puisse la connaître. Cette attitude a plus de force que celle qui consisterait à inventer des unités que les locuteurs arabes ne connaissent pas" (Sībawayh: II, 89).

[16] Our translation of: "Si on est amené par la logique du *qiyās* à utiliser un certain élément et qu'on constate par la suite que les locuteurs arabes réalisent autre chose, il faut alors abandonner cet élément et ne retenir que ce qu'ils réalisent [effectivement]." (*Ibn Ǧinnī*: I, 126)

goals of the Arab grammarians' work was the investigation which was undertaken in order to gather data and facts about the Arabic language which was considered to be *faṣīḥ* (فصيح) for the sake of codification.

Second: the observation and systematisation of this data. The linguist departs from the data he has gathered and makes use of the *qiyās* as a tool of description. He looks for the regularities and gathers the items into groups -*bāb*-s- on the basis of common characteristics. He then observes what characterizes the linguistic behaviours of the items in each *bāb* in order to add to it other equivalent items (*naḍā'ir*).

Third: the formalisation and generalisation. The linguist, at this stage, tries to go beyond what Hadj-Salah calls the "*constatatif qiyās*" (i.e., a *qiyās* based on observation), which is based on the abstraction towards a more general formalisation. In fact, the linguist determines the *miṯāl* or *ḥadd* which represents the *qiyās* in each *bāb*. But when more than one pattern (or rule) derives from the analysis of the observed facts, a generalized pattern must be adopted in favor of the one representing the most frequently used pattern. More precisely, a *qiyās* is to be established for each *bāb* according to the following cases:

a. If the *bāb* is homogeneous (*muṭṭarid*, مطرد), the *qiyās* is established in a way that allows the reproduction of all the items of the *bāb*.

b. If the *bāb* is not homogeneous, then:

b.1. The *bāb* is completely non homogeneous (*muḫtalif*, مختلف), in this case the linguist tries to explain this lack of cohesion in the *bāb* and looks for the *qiyās* elsewhere;

b.2. The *bāb* contains two patterns with the same degree of extension: in this case, there are two *qiyās* ;

b.3. The *bāb* contains two patterns one of them is dominant. The *qiyās* is established in favour of the dominant pattern.

Fourth: the second step of formalisation. Here, the linguist goes a step further in the formalisation by extending the *qiyās* to the operations and the items that do not exist in the corpus of data, but which might exist by the power of generation of the *qiyās*. Furthermore, the analysis of language structures ends up with the presentation of different levels of abstraction by which we establish relations not only between individual items, but whole *bāb*-s of items and operations.

To conclude, we can say that the theory of the *qiyās* and *binā'* is a theory of construction of language which can be used for explaining the functioning of the structures of language.

2.3. Guidelines for a linguistic analysis of English according to the neo-khalilian theory

We first of all underline again that the neo-khalilian theory, through a formalisation of the *naḥw al-'Arabi*, has proposed a number of patterns which allow

the definition and the generation of the linguistic units at different levels of language. This is why we have departed from the hypothesis that such patterns exist in each language, without advocating that the number of these patterns and their positions are exactly the same in all languages. Thus, the grammar we are aiming at designating results from the search for these generating patterns in the English language.

The pattern, also called *miṯāl* (مثال) or *ḥadd* (حدّ), can be represented by using a set of symbols in a given order to allow a simulation of the general structure of the linguistic units it represents. This general structure allows to gather different linguistic units in one *bāb* (باب) bringing forward their common structure and not only their individual characteristics. The linguistic units can be defined according to one or more patterns which determine these units and its constituents by a set of ordered positions.

Before starting the presentation of the adopted procedure of analysis, we have to underline the fact that the Arab grammarians made a clear distinction between two important and indispensable domains of study in linguistics, namely what is semiological and what is semantic[17] without giving importance to one domain at the expense of the other[18].

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[17] The levels of analysis developed in chapter two are situated within the semiologico-grammatical domain.

[18] For the Arab grammarians, the *lafḍ* is to be considered first because it serves the ma'nā (المعنى, i.e., meaning): "*al-lafḍ ḫādimun lil ma'nā*" (اللفظ خادم للمعنى). Note that the Arab grammarians speak of types of meanings: *ma'nā waḍ'ī* (معنى وضعي) and *ma'nā bayānī* (معنى بياني). Any change of the *lafḍ* (اللفظ) or the *binya* (البنية, i.e., structure) causes a change on one of these two meanings.

In fact, the pattern represents in one formula all the possible constructions of the *lafḍ* (اللفظ) from the semiological point of view. The syntactic pattern (R → T1, T2), for example, represents the structure of the *lafḍ* itself without consideration of the different meanings it can denote, because this structure is independent from the semantic content and the information it can contain[19]. In this context, the first objective according to the neo-*khalilian* theory should be investigating this structure. After that, we can look for the meanings deriving from each structure in different discourse situations. These meanings can be different from the one denoted by the structure of the *lafḍ*. As we have seen in detail in chapter one, the verb in Arabic, for example, if defined from the semantic point of view, we say that it indicates such or such tense, but from the semiologico-

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Hadj-Salah insists throughout his writings on the fact that the definition of the linguistic units must be based on semiologico-grammatical criteria, i.e., the formal structure of the *lafḍ*. This point of view is also expressed by Chomsky for whom "grammar is autonomous and independent of meaning". He also speaks about the inadequacy of the use of meaning in grammatical analysis:

> .. semantic notions are quite irrelevant to problems of formal structure, and [...] only their unclarity disguises their irrelevance, and [...] when the claim is put forward that linguistic analysis cannot be carried out without the use of meaning, what is really expressed is that it can not be carried out without intuition (Chomsky 1975: 23).

This is why our analysis is undertaken from the semiologico-grammatical point of view, even though we know that we cannot sharply divide between the two domains.

[19] For example, *qāma ʻomar* (قام عمر which means literally: got up Omar) and *ʻomarun qāma* (عمر قام i.e., Omar got up) are used in the discourse to denote the same meaning (Omar is the agent in both cases), but the formal analysis shows that these two utterances are different *qāma* in *qāma ʻomar* is R but in *omarun qāma* is embedded in T_2.

grammatical[20] point of view, it can be defined according to the elements that could or could not be added to it.

To find out these patterns of the English language and following the described steps in the preceding section, we have proceeded in the following way:

1. The first step would have corresponded to the collection of data, but this does not exist in our work for the simple reason that when the early Arab grammarians undertook such a huge investigatory work about Arabic, their goal was the codification and preservation of a language in which the oral tradition prevailed, while the English language, as we know, is perhaps one of the most analysed languages and its codification is well established.

[20] We mention here that Sībawayh distinguished even the correctness that results from the *lafẓ* from the one that is related to meaning (he uses the dichotomy: correct / impossible). Then he made a distinction between the correctness required by the *qiyās* (we note that the term *qiyās* here is used with the meaning of the general system that distinguishes a language from another one) and the correctness that is imposed by the real use of the speakers. This is the meaning of the term *'istiḥsān* (استحسان), that is the preference of the speakers themselves, (for this he uses the dichotomy: correct / good). *Sībawayh* has also used the following terms to describe the different utterances:

- *mustaqīm ḥasan* (مستقيم حسن): i.e., correct and good in the *qiyās* and the use. Like *ataytuka 'amsi* (I came to see you yesterday) (Cf. Hadj-Salah1979: II, 455).

- *mustaqīm qabīḥ* (مستقيم قبيح): i.e., correct and not good: conforms to the *qiyās* and not correct in the use. Like *qad Zaydan ra'aytu* (*Of course Zayd I saw*) (Cf. Ibid.: II, 456).

- *muḥāl* (محال):i.e., impossible, conforms to the *qiyās* and the use but not correct from the semantic point of view Like **'ataytuka ġadan* (**I came to see you tomorrow*) (Cf. Ibid.: II, 455]

- *mustaqīm kaḏib* (مستقيم كذب). Like *ḥamaltu al-ġāba* (*I held the forest*) (Cf. Ibid).

- *muḥāl kaḏib* (محال كذب) . Like **sawfa 'ašrabu mā'a l-baḥri 'amsi* (**I will drink (all) the water of the sea yesterday*) (Cf. Ibid.: II, 456).

Thus, our preoccupation does not consist in constituting a corpus of descriptive data, but the presentation of a number of representative examples for each tense form, trying to set an 'explicative hypothesis'[21] of the internal organisation of English grammar on the basis of the observed properties determining its functioning.

According to us, this is not outstanding since grammar itself is "*basically an attempt at* systematization *and codification of a mass of data (…). The way in which this systematization is approached will depend on the convictions of the grammarian about the nature of language*". (Rivers 1968: 57). Thus, the first step consists in gathering data about a given language structure according to the descriptions and examples provided in grammar and linguistic books.

2. The second step as well as the two following ones consist in using the concepts of *qiyās*, bāb, *miṯāl*, *aṣl* and *far'* in order to extract the different linguistic patterns. In this step, we try to describe the linguistic structures which are comparable to each other on the basis of a given observed similarity by using the *qiyās* and gathering them in a same *bāb*. We can speak, for example, of the *bāb* of the perfect tense forms:

[21] This term is used by Bouix-Leeman (1993: 9).

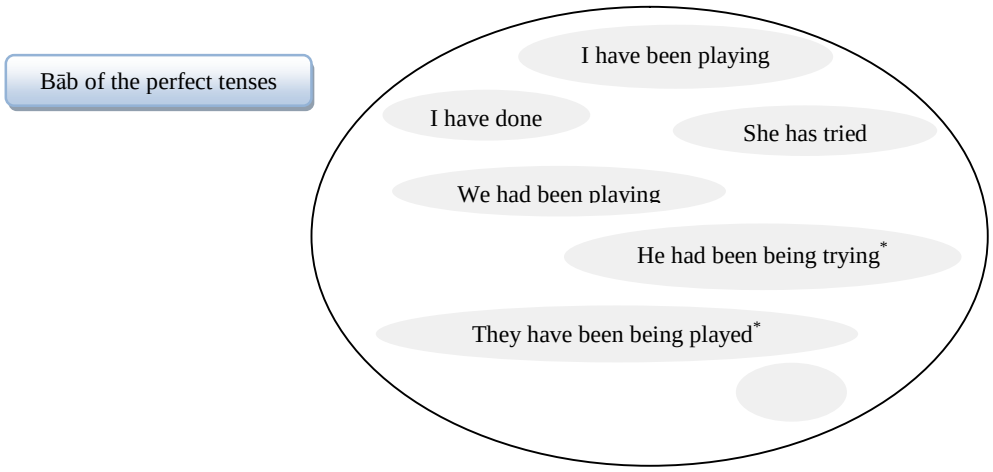

Figure 2.1

The determination of the *bāb*-s is based on the point of view adopted by the linguist himself (cf. Hadj-Salah 1979: I, 185), since it is possible to conceive all the possible combination of elements and choose the criteria upon which we gather the units together bringing out what is common to them.

A *bāb* can be more abstract (cf. chapter one, pp. 23-24): in this case we speak of a *bāb* of *bāb*-s. For example, the *bāb* of the ordinary progressives[22] and that of the perfect progressives in fact form one *bāb*, that of the progressive tenses:

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* For the reason of the inclusion of such grammatical but very rarely used examples, cf. Footnote 41, p. 84 in this chapter**.** Al-Khalil calls it *al-muhmal* (المهمل i.e., non-existant in the usage), and opposes it to *al-musta'mal* (المستعمل i.e., effectively used) (Cf. Hadj-Salah 1979: I, 186). We note that some "English speakers find these ill-formed" (Trask 1992 : 205).

temporal or durative kind, and thus handled sometimes under aspect. The usual contrast recognized is between 'progressive' or 'continuous' (e.g. *I am going*) and non-progressive or 'simple' (e.g. *I go*)." (Crystal 2008: 390).

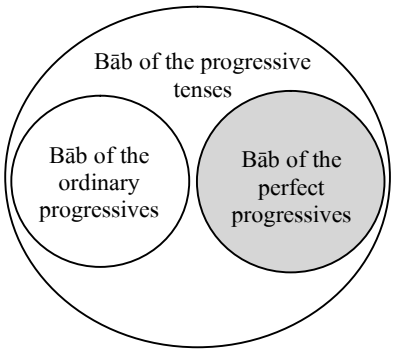

Figure 2.2

Within the *bāb* of the perfect progressives, we can make a further distinction between those appearing in the active form sentences, from one hand, and the passive form sentences, from the other hand, as clarified by the following figure:

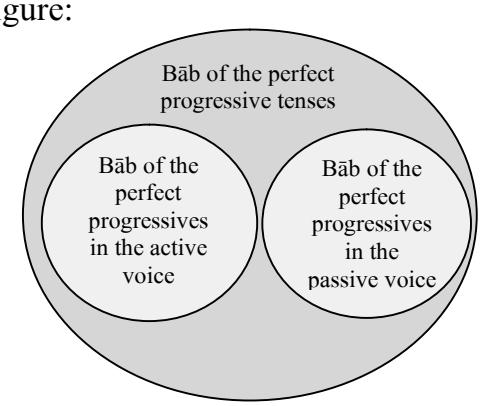

Figure 2.3

As concerns our work and for an accurate description of the English tense forms, we start by making an inventory of all the existing forms and simulate the way they can be derived from each other. Then, we try to characterize the patterns that can be used to describe the tense forms according to the positions where their constitutive elements occur. The following steps are followed:

- As a first step, the study deals only with the tense forms containing no modal auxiliaries (*i.e.,* those containing only the auxiliaries *Do*, *Have,* and *Be*), within which we have treated only those that cannot be actualised without overt[23] personal pronouns[24] which occur in the position of the grammatical subject[25]. This is what Frank Palmer (1968) calls the primary pattern of the simple phrases[26].

- Then, within the primary pattern, a distinction is made between those actualised with overt personal pronouns appearing in the position of the subject and those which are actualised without these pronouns (namely, the imperative, the infinitival and the participial). And finally, we propose a description of the tense forms of the secondary pattern[27] to design those which contain modal auxiliaries.

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[23] Overt means explicit; that is to say that the imperatives are not included in this first step.

[24] Subjective case pronouns are the pronouns that appear in the position of the subject, as opposed to those that appear in the position of the object. Note that the objective case pronouns are inflected forms of subjective case pronouns.

[25] Grammatical and not logical subject. For example, in *The book is written by John*, the grammatical subject is *the book* while the logical subject is *John*.

[26] Palmer defines the phrases of the primary pattern as being those which "*contain forms of the primary auxiliaries only (Be, Have, Do), and include phrases consisting of a single (full verb) form*" (1968: p. 55); while the phrases of the secondary pattern "*are essentially extensions of the primary pattern phrases, but contain, in addition, one form of a secondary (modal) auxiliary* (*Will, Shall, Can, May, Must, Ought, Dare* or *Need*)."(Ibid.)

[27] Palmer (1968) uses the term secondary pattern to refer to the tense forms which contain modal auxiliaries. He defines it as "*an extension of the primary pattern. In the place of each pair of present and past tense finite (word) forms in the primary pattern, there is an infinitive preceded by one of the secondary (modal) auxiliaries*" (p. 105).

- Within each category a distinction is made between the ordinary and the perfect tenses as the following figure shows us:

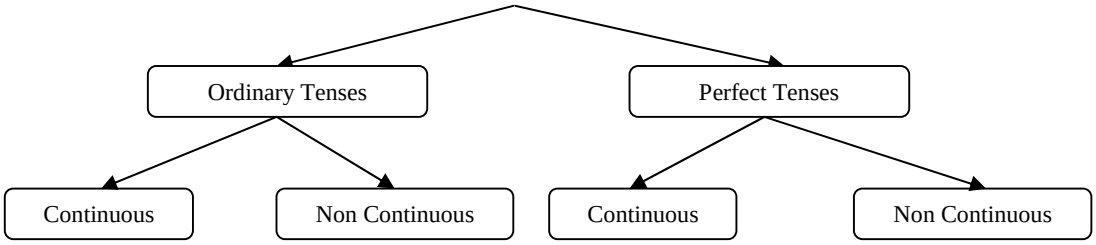


Figure 2.4

- And then, each tense form is studied according to the different types of sentences in which they appear, *i.e.,* the affirmatives and interrogatives, the positives and negatives, described in their active and passive voice:

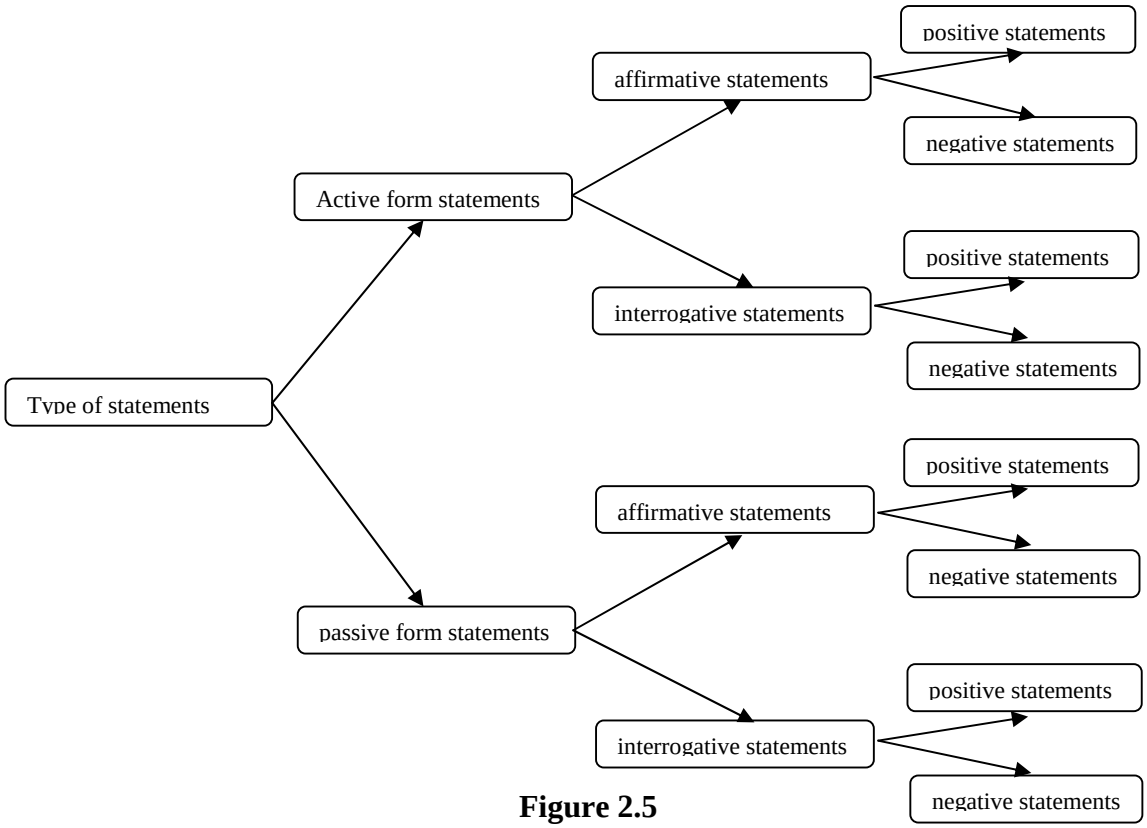


Figure 2.5

We can represent the *bāb*-s of the continuous tenses deriving from this classification in the following figure:

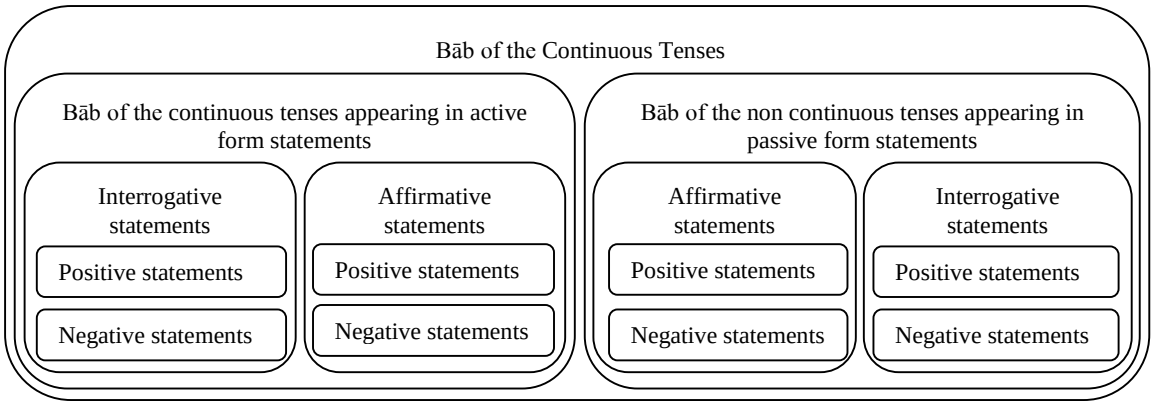


Figure 2.6

In each *bāb*, we speak of homologous elements, i.e., *naḍā'ir* (plur. of *naḍīr*) which are, as we have seen in details in chapter one, "*elements which* are *similar* to *each other and similar to a representative element which is the pattern of the class to which they belong (...) similar elements constituting a same group or bāb*"[28]. The determination of the general pattern of this representative element in each *bāb* brings us to the third step described below.

In the third step, we try to extract the pattern or patterns representing the described linguistic structures in each *bāb* (in fact there are four cases, cf. pp. 59-60 in this chapter). This preliminary step towards the characterisation of the formal patterns we are aiming at designating is based on the description of each tense form as well as its constituents and the positions in which they occur. Thus, in this step, we try to go beyond what has been observed in the data to generalise the *qiyās* so that it can be extended beyond the handled samples. In other words, in this step, we

[28] Our translation of: " sont des éléments semblables entre eux et semblables à un élément-type qui est le schème de la classe à laquelle ils appartiennent (…) éléments semblables constituant un même ensemble ou bāb." (Hadj-Salah 1979: I, 128).

seek to find the abstract formulae which allow to transcend the data on which we have constructed the different patterns.

3. The last step consists in characterizing the *martaba* of each linguistic unit according to whether it is derived or it is the kernel from which derives some other linguistic units. The different constructions can be related to each other in the linguistic system in the following way:

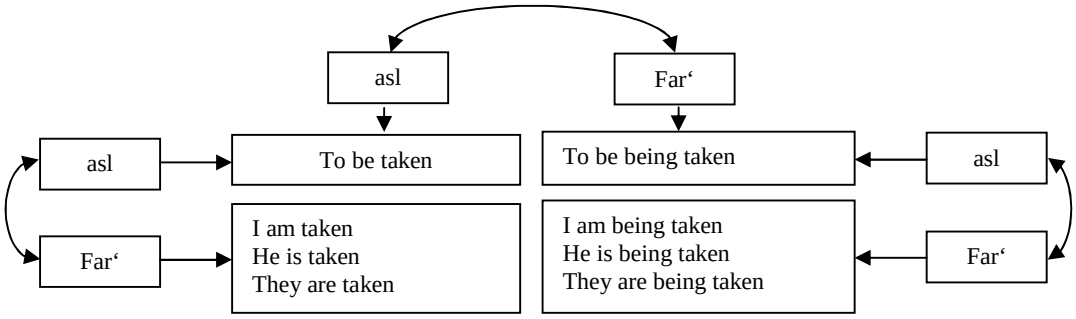


Figure 2.7

This search for the *uṣūl* and *furū‘* allows us to develop a network of relations between the linguistic units in different ways as the following figure shows us:

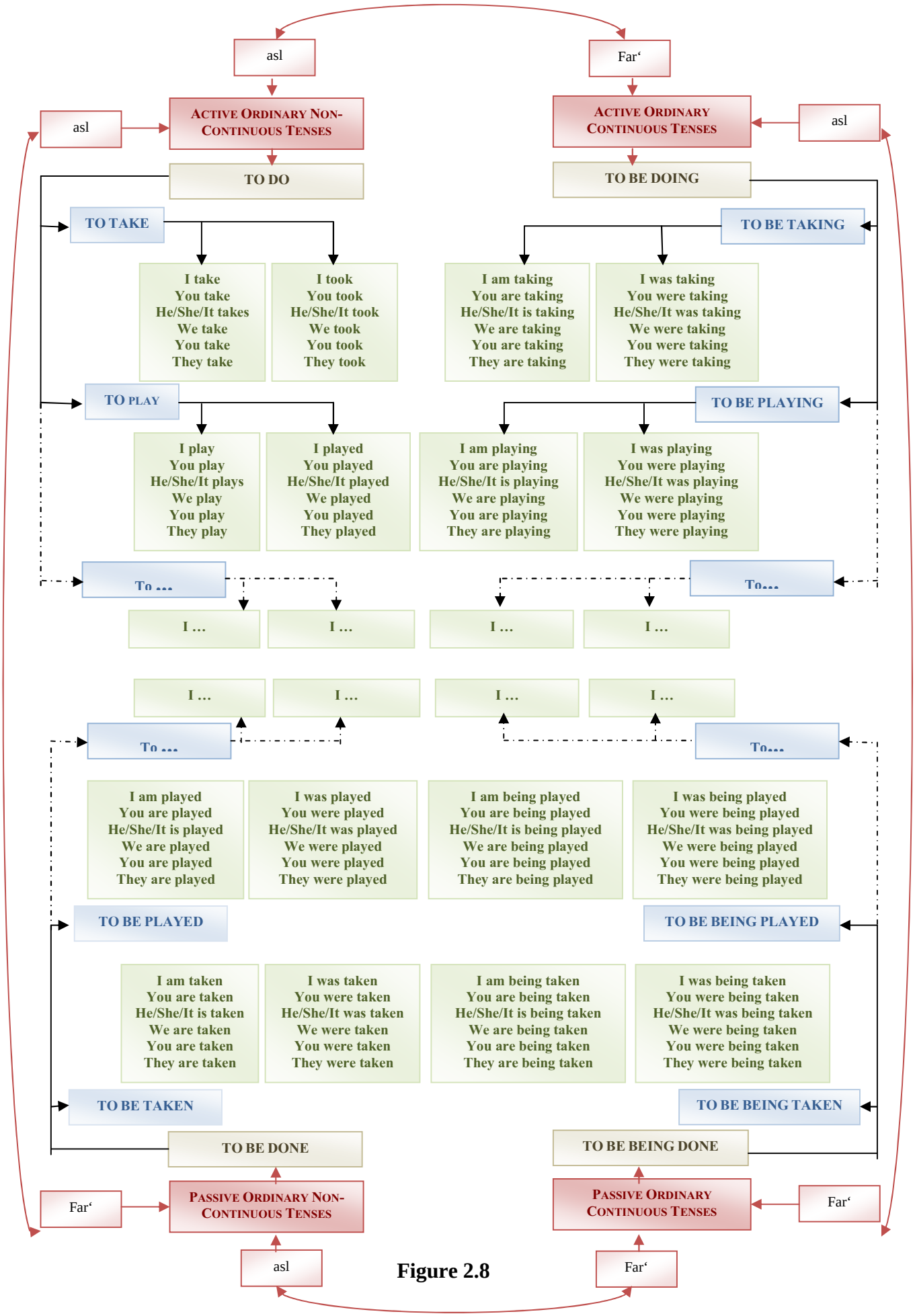

asl
Far‘
asl
ACTIVE ORDINARY NON-CONTINUOUS TENSES
ACTIVE ORDINARY CONTINUOUS TENSES
asl
TO DO
TO BE DOING
TO TAKE
TO BE TAKING
I take
You take
He/She/It takes
We take
You take
They take
I took
You took
He/She/It took
We took
You took
They took
I am taking
You are taking
He/She/It is taking
We are taking
You are taking
They are taking
I was taking
You were taking
He/She/It was taking
We were taking
You were taking
They were taking
TO PLAY
TO BE PLAYING
I play
You play
He/She/It plays
We play
You play
They play
I played
You played
He/She/It played
We played
You played
They played
I am playing
You are playing
He/She/It is playing
We are playing
You are playing
They are playing
I was playing
You were playing
He/She/It was playing
We were playing
You were playing
They were playing
To ...
To...
I ...
I ...
I ...
I ...
I ...
I ...
I ...
I ...
To ...
To...
I am played
You are played
He/She/It is played
We are played
You are played
They are played
I was played
You were played
He/She/It was played
We were played
You were played
They were played
I am being played
You are being played
He/She/It is being played
We are being played
You are being played
They are being played
I was being played
You were being played
He/She/It was being played
We were being played
You were being played
They were being played
TO BE PLAYED
TO BE BEING PLAYED
I am taken
You are taken
He/She/It is taken
We are taken
You are taken
They are taken
I was taken
You were taken
He/She/It was taken
We were taken
You were taken
They were taken
I am being taken
You are being taken
He/She/It is being taken
We are being taken
You are being taken
They are being taken
I was being taken
You were being taken
He/She/It was being taken
We were being taken
You were being taken
They were being taken
TO BE TAKEN
TO BE BEING TAKEN
TO BE DONE
TO BE BEING DONE
Far‘
PASSIVE ORDINARY NON-CONTINUOUS TENSES
PASSIVE ORDINARY CONTINUOUS TENSES
Far‘
asl
Far‘

Figure 2.8

To summarize, we can say that the formalisation goes through two stages: the first one allows to describe the linguistic units themselves, while in the second stage, the linguistic units are described according to what they have in common with the other ones to see if they could be derived from each other.

2.4. Implementation

We shall present in this section an overview of the way the procedure described above has been used for the analysis of the English tense forms, as a necessary step towards presenting the patterns we came out with for what concerns the simple verb phrase. Thus, we propose to reproduce below as an example[29] the construction of the active ordinary non-continuous tenses[30] appearing in affirmative negative statements. We start by presenting the positives, the negatives and then the transformational process from the former to the latter.

2.4.1. Pattern of positive affirmatives

We can notice that sentences such as:

e.g. 2.1 a. I stayed.

b. He cries.

have in common the same type of constitutive elements appearing always in the same positions. Thus, they can be described as follows:

---

[29] For a more detailed description of all the English tense forms of the primary and secondary patterns, cf. Khelout 2001.

[30] Namely, the simple present and the simple past. The other tenses which require the presence of modal auxiliaries in their constructions are not included in this study; *i.e.*, the simple future and the conditional.

The sentence	Subject	Base form of the verb	Tense	Concord
4.4.a	I	stay	past	Concord with I
4.4.b	He	cry	present	Concord with he

Table 2.1

We can represent this common structure as follows:

Position of the Subject: '**Subject**'	Position of the full verb (stem): '**Full verb**'	Position of the inflectional element due to tense '**Tns**'	Position of the inflectional element due to the concord with the subject '**Crd**'

Figure 2.9

We assume that the constituents of each positive affirmative sentence containing ordinary non-continuous active tenses fit in this explanatory pattern[31]. Let us examine the content of each position of the structure presented in Figure 2.9 above:

- **The position of the subject:** We take into consideration only the appearance of the pronouns in this position. This position is labelled throughout our analysis '**Subject**'.

- **The position of the full verb:** This term is used to distinguish auxiliaries from the other verbs. Full verbs are also called *lexical* verbs; while the term 'stem' stands for the infinitive form of the verb without the particle '*to*'. It is also sometimes called the 'base form' or the 'bare infinitive'. We have labelled this position '**Full verb**'.

- **The positions of the inflectional elements due to tense and concord with the subject:** These are two morphological positions which specify tense and agreement

[31] Note that the numbered positions such as *position 1* and *position 2* are not definitive. We can find in the following structures, for example, that other positions precede *position 2*, (this is the case of the tense forms containing auxiliaries that appear before the full verb); we will have each time to renumber the positions according to the order in which they occur from left to right.

with the subject. In fact, these two inflectional elements are morphologically integrated within the form of the verb and they constitute in reality one single unit with it. We have avoided representing them in one position in order to define each element of the tense form in question. In recent linguistic studies, these two elements are introduced under the symbol **Infl**[32].

- **The position of the inflectional element due to tense:** We label this position 'Tns'. It is the position where the tense is specified. Two different tenses can appear here: present or past tense. They form a closed list, thus, the presence of one of them excludes the other.

  In this position, *i.e.,* '**Tns'**, we will make use of two symbols in order to refer to each tense in case the position of the full verb is not empty:

  - ***Ø*** when the tense is present. In our study, we have chosen to put this symbol each time there is unmarkedness. Thus, in this case, it refers to the present tense, but later on, it will also be used in the position of negation in case of positive sentences. This will not lead to any confusion as far as it is the position that determines the meaning of the element it contains. In this perspective, the same symbol can have different denotations according to the positions in which it can appear. This kind of reasoning is not new since we treat in the same way '*Do'*, for

[32] We can mention for example Cook in his *Introduction to Chomsky's Universal grammar,* who defines INFL at the level of the sentence as being "*made of two features: Tense which may be past or present; and AGR which may be singular and plural.*" (1989: 37)

example, in '*He did not do it*'. The first '*Do*' is an auxiliary, while the second one is a full verb.

- ***ed*** when the tense is past[33]. By the use of this symbol, the irregular verbs are certainly also accounted for in our study, because, *ed* here does not refer to the *ed* affix appearing in *played* for example, but to the past tense. It can be actualised by the addition of the affix *ed* to the verb form, as it can appear in the transformation of tense form in the case of the irregular verbs like *give* for which the *ed* form is *gave*.

  Our choice to mark past tense and leave the unmarked morphology for the present tense (Ø) is arbitrary and does, by no means, mean that the present tense is simpler than the past tense form concerning the needed transformational rules required to construct each tense form.

- **The position of the inflectional element due to the concord with the subject:**

  We will label this position '**Crd**'. It contains the element of concord or agreement with the subject. When we speak of concord, we make reference to the person and number concord between the subject and the verb (Cf. Quirk & Greenbaum 1988: 38) and which is referred by Chomsky by the term agreement. In our study, the elements of number and person are combined in one element and realized together on the tense form. Normally, we should have as many symbols as there

[33] *ed* is found in some grammar books as ed_1 like in *University Grammar of English* (Cf. Quirk & Greenbaum 1988: 27); what is important is that both refer to the past tense and not to the past participle morphology.

are English personal pronouns, but to use a more economical terminology, we will refer to all the same morphologies by the same symbol.

All the English verbs have two forms in the simple present tense: one for the third person singular and one for all the other persons; only *Be* can concord with the subject with more than two different forms. For the past tense, we know that only one form exists for all the verbs except once again for the verb *Be*. Therefore, we will make use of the following symbols:

- **C1**: to refer to the concord of the verb with the first person singular pronoun *I*. Though nearly in all cases the concord is the same for *I*, *you*, *they* and *we*; but the fact that *Be* does not adhere to this rule compelled us to make this distinction.
- **C2**: to refer to the concord of the verb with the second person singular pronoun *You* or one of the three person plural pronouns: *We*, *You* and *They*.
- **C3**: to refer to the concord of the verb with one of the third person singular pronouns: *He*, *She*, or *It*.[34]

[34] We have to note here that our study is not morphological so it does not treat, for example, word formation. This could be added in our analysis thanks to a component that includes the rewrite rules:

drive + *en* (*i.e.*, in some grammar books ed_2) is rewritten as *driven*

drive + *ed* (*i.e.*, in some grammar books ed_1) is rewritten as *drove*

To clarify more the structure in Figure 2.9 (p. 73), let us take the following examples, and the reader can find further examples in Appendix two:

2.4.2. Pattern of negative affirmatives

Examples of negative affirmative sentences such as:

e.g. 2.2 a. I did not write

b. He does not work

have all in common the elements described below:

The sentence	**Subject**	**Base form of the auxiliary *Do***	**Tense**	**Concord with the subject**	**Negative particle *Not***	**full verb (stem)**
e.g. 4.5.a	I	Do	past (ed)	C_1	not	write
e.g. 4.5.b	He	Do	present (∅)	C_3	not	work

Table 2.2

We label the position of the auxiliary do '**Aux**.' and the position of the negation with not '**Neg**.' We can represent the common structure for the negatives as follows:

Subject	**Aux**. (stem) *Do*	***Tns***	**Crd**	**Neg**. *Not*	***Full verb** (stem) Full verb*

Figure 2.10

We assume that each negative affirmative sentence containing ordinary non-continuous active tenses fits in the pattern above. Let us now see if it is possible to get the new structure from the preceding one represented in Figure 2.9 (p. 73).

2.4.3. The transformational[35] process for negation

To negate a sentence we generally add the negative particle *not*[36], but we never

Subject	**Full verb (stem)**	**Tense**	**Concord**		**Resulting form after applying the rewrite rules:**
I	be	Ø	C_1	⇔	I am
We	work	ed	C_2	⇔	We worked
It	work	Ø	C_3	⇔	It works

[35] We note here that in modern linguistics, a transformation is generally defined as "*a formal linguistic operation which enables two levels of structural representation to be placed in correspondence*" (Crystal 2008: 491). For us, it is the set of operations which allows the passage from the *aṣl* to its *furū'* and vice versa through a number of grammatical rules.

find sentences like **I not work*. The negation is said to be 'a specific characteristic of auxiliaries and not full verbs'. This compels us to add to the pattern in Figure 2.9 (p. 73), in addition to the position of *not*, a position for the auxiliary *do*. This auxiliary is called the 'neutral' or 'empty' auxiliary (Cf. Palmer 1968: 26). It is "*used only where the grammatical rules of English require an auxiliary, but where an auxiliary is not established by the general context.*" (Ibid.).

Let us examine how the pattern of the negative affirmative sentences could be derived from the corresponding pattern of positive sentences.

First proposition: With the appearance of the position of the auxiliary, the inflectional positions that follow the position of the full verb in positive sentences pattern shift from their initial place to follow immediately the auxiliary leaving the full verb without any morphology. This could be clarified by the following schema:

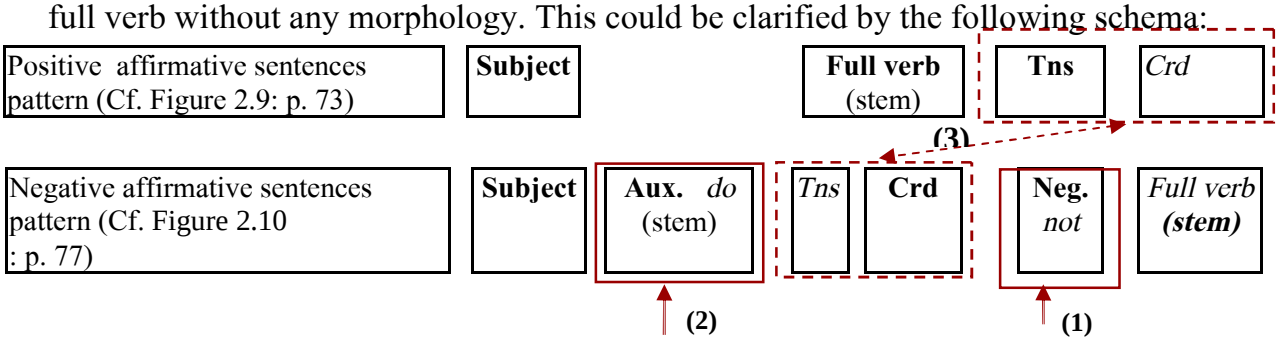


Figure 2.11

(1) Introduction of the position of *not* to negate the sentence.

---

[36] In our study we have avoided to give examples of sentences where the negation is contracted and we have made no reference to the scope of the negation, *i.e.*, we have not shown *not* as an element having an effect on the other elements of the sentence as these examples show:

"I wasn't Listening all the Time (i.e., I listened none of the time)

I wasn't listening All the time (i.e., I listened some of the time)" (Quirk & Greenbaum 1988: 188).

(2) The appearance of *not* requires the existence of an auxiliary; since the tense form does not contain any auxiliary, a position to contain the auxiliary *do* is introduced in the pattern. Thus, *do* and *not* are not introduced in the same way. The introduction of *not* is chosen to negate the sentences, while the introduction of *do* is imposed by the grammatical system of English.

(3) Shift of the inflectional positions to follow immediately the position of the auxiliary *do.* This arrow is bi-directional, because we can go from positive sentences to negative ones by adding *not* and *do* and by shifting the morphological positions; and we can go back from the latter to the former by suppressing *do* and *not* and bringing back the two morphological positions to their initial place; thus, by cancelling all the transformations that happened.

Let us now analyse further the shift of these two positions. To sum up what happened in this first proposition, we can say that the full verb remains unmoved and it is the two morphological (*i.e.,* inflectional) positions that shift to precede the position of '**Neg**'.

Second proposition: There is a second possibility in which it is the content of the position of the full verb that is moved to a position after the two morphological positions of tense and concord, and the auxiliary *do* is introduced in its place to fill in the remaining empty position. This second interpretation can be represented as follows:

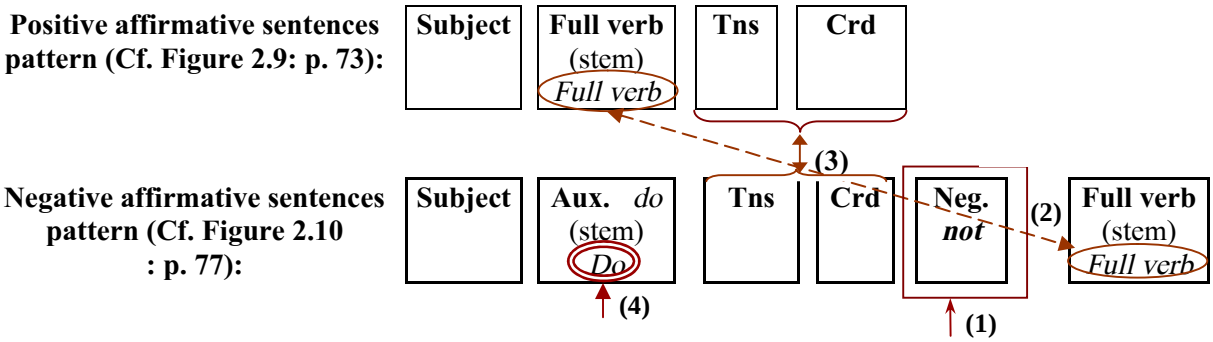


Figure 2.12

(1) Introduction of the position of the negative particle *not* to negate this sentence.

(2) The full verb moves from the position which is just after the subject to appear in a position which is after that of the negative particle *not*. The full verb in this position also appears in its base form (i.e., the stem).

(3) The two morphological positions appear in the same order. This time they do not inflict the full verb but the auxiliary *do* which is introduced just before them.

(4) In this case, *do* is introduced at the place of the full verb.

We leave aside the perspective represented in Figure 2.12 above, because as we know, *do* as an auxiliary has some characteristics that full verbs do not have. Thus, *do* and the full verbs have to appear in different positions, since their appearance in a same position will create difficulties as far as this analysis is based on a formal definition of the elements constituting the linguistic units thanks to the characteristics conferred by each position to its content. This brings us to propose a third kind of analysis for the interpretation of what happens in the transformational process from the positive affirmative sentences to the negative ones.

Third proposition: Here, we propose that the two inflectional positions of tense and concord be positioned just after the subject and they inflict the first tense form that

comes just after them. In transformational theories, this phenomenon is called 'affix hopping' and is presented under the following rule: Af + v $\rightarrow$ v + Af. This rule stipulates that any affix (Af) that is found to the left of a verb (v) is moved to the right of that verb. 'Affix-hopping' is introduced to relate the morphology deriving from these two inflectional elements to the first verb that appears just after the subject from left to right. This is confirmed by the following quote about number agreement and tense:

> Number agreement is only shown on the first item in the verb group […]. Note that the first item in the verb group is also the item that shows tense. Tense and number go altogether, even in interrogatives. We say that tense and number are cumulated (Brown & Miller 1980: 219)

Let us generalise this rule and say that the positions of concord and tense always come just after the position of the subject in affirmative positive sentences. Then, they are 'affix-hopped' to the first verb element that appears just after them[37]. This time also, we propose that each time a new element appears in this pattern, we say that the position that contains it was already existing but empty. This will allow us to come up with a generalised explanatory pattern for all the types of the studied

---

[37] In universal grammar this is interpreted in movement theory. We speak of V-movement, i.e., "*movement of V to INFL and of Vi to head of C*" (Cook 1998: 132). The English sentences are represented in UG as having :

> "s-structures in which INFL (I) and its features come to the left of the verb:
>
> *Susan present singular like tomatoes*
>
> But in a surface structure sentence of English these features are actually manifested on the right of the verb:
>
> *Susan likes tomatoes*
>
> Where the s ending of likes shows present tense and singular agreement. The straightforward GB account is that '*there is a rule –call it R- which assigns the elements of INFL to the initial verbal element of VP*' (Chomsky 1981: 256)" (Cook 1998: 129).

For more details, cf. Ibid. (pp. 129-131).

sentences till now. Thus, in fact, we would have the following patterns:

Subject	***Tns***	**Crd**	**Aux.** (stem) EMPTY	**Neg.** EMPTY	**Full verb** (stem) **Full verb**

Figure 2.13: Pattern of positive affirmatives containing ordinary non-continuous active tenses

Subject	**Tns**	**Crd**	**Aux.** (stem) **Do**	**Neg.** **Not**	**Full verb** (stem) **Full verb**

Figure 2.14: Pattern of negative affirmatives containing ordinary non-continuous active tenses

This brings us also to reconsider the analyses presented in Figure 2.11 (p. 78) and Figure 2.12 (p. 80) This time, let us present it in two steps, just for more clarity: first, the introduction of *not* ; then, the introduction of *do*:

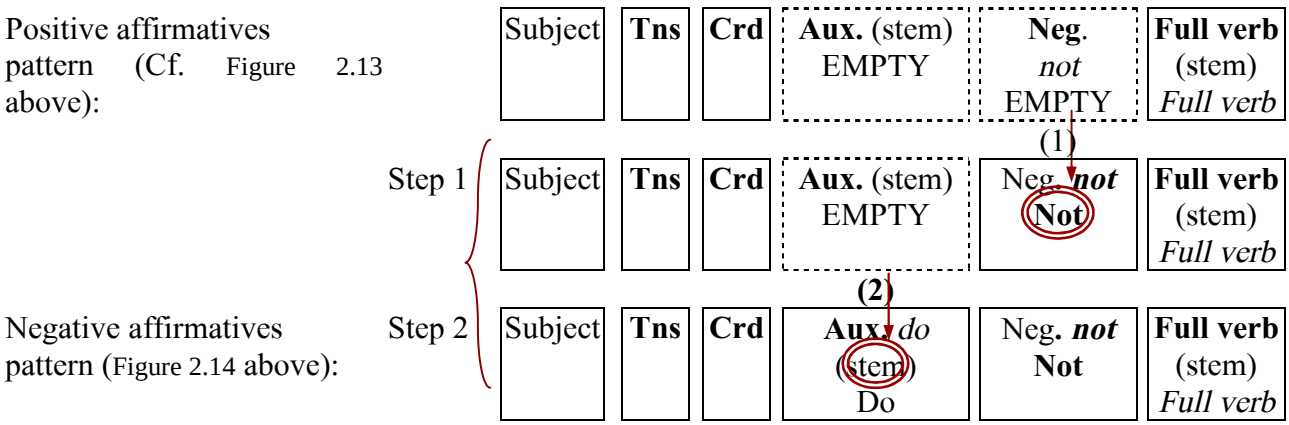


Figure 2.15

(1) Introduction of the negative particle *not* to negate the sentence. The position Neg in which it is introduced was empty before.

(2) The introduction of the particle *not* before the full verb constitutes an obstacle to the two morphological positions which can no more reach the full verb to inflict it. This is why the auxiliary *do* is introduced to be inflicted by *Tns* and *Crd*, and thus, carry the morphology that cannot reach the full verb.

This analysis provides a formal explanation for the reason why *do* is introduced. The introduction of an element that is not a verb[38] creates a kind of

[38] Not a verb in nature and not in the sense that it is not part of the verb group.

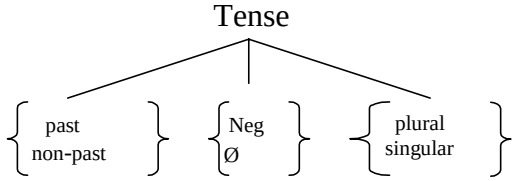
break between the two morphological positions and the full verb, which prevents the latter from being inflicted by the former. This is why a position for auxiliaries is necessary between the morphological positions and the full verb. Thus, the auxiliary *do* is introduced in this position when there are elements that prevent the morphological positions to inflict the full tense form to show tense and concord. We can also find in linguistic books that "*the tense auxiliary cannot appear as a separate element all by itself it needs a verb, as it were, to carry it. Since, under the analysis proposed there is no verb available, Do is introduced as a 'dummy' verb, a carrier of the tense*"[39] (Brown & Miller 1980: 116). Baker speaks of 'Do support' and explains it as "*an occurrence of Tns that has not been able to undergo Affix Hopping must have a do inserted to the left of it.*" (Baker 1978: 100)

This third proposition appears to be the most convincing one. In this analysis, there is no objection to the fact that the position of the auxiliary *do* and that of the negative particle *not* exist even in the pattern of the positive sentences, but they are empty. In fact, this explains why we can have the kind of sequences that are used for emphasis such as:

e.g. 2.3 a. I do play.

b. She does work.

[39] What the author means by tense auxiliary is different of what it means in our study. We can represent it in the following diagram (cf. Brown & Miller: 223):



2.5. The resulting patterns of the English tense forms of the primary and secondary patterns

By following the procedure of analysis presented in this chapter, our preceding research (Khelout 2001) ended by suggesting linguistic patterns for the simple verb phrase containing English tense forms of the primary and secondary patterns. We will allow the reader to discover in what follows these patterns as a first step towards continuing the description and the linguistic analysis of the English verb system dealing this time with the complex phrase[40].

2.5.1. Tense forms of the primary pattern

For the analysis of the simple phrase, we have tried as much as possible to study the characteristics of the constitutive elements of each tense form and the order of the positions that contain them. For this purpose, we have departed from the tense form that is made up of the least possible number of constitutive elements, then, we have progressed in our study through the description of larger and larger tense forms (even though some of them are very rarely used; this is the case, for example, of the continuous perfect tense forms appearing in the passive statements like *I had been being taught*[41](e.g. 4. 1)).

[40] Cf. chapter four.

[41] These constructions have been included in our analysis for two reasons: Firstly, they help to find all the positions that exist in the pattern we are aiming at designating and the order in which they occur; secondly, they show the possibilities offered by the language system but that are not exploited by the speech community. English is not the only language in which the possibilities offered by the grammatical system are not fully exploited by its users. There are many examples of grammatical sentences that are not

2.5.1.1. Generating pattern of tense forms actualised with overt subjective pronouns

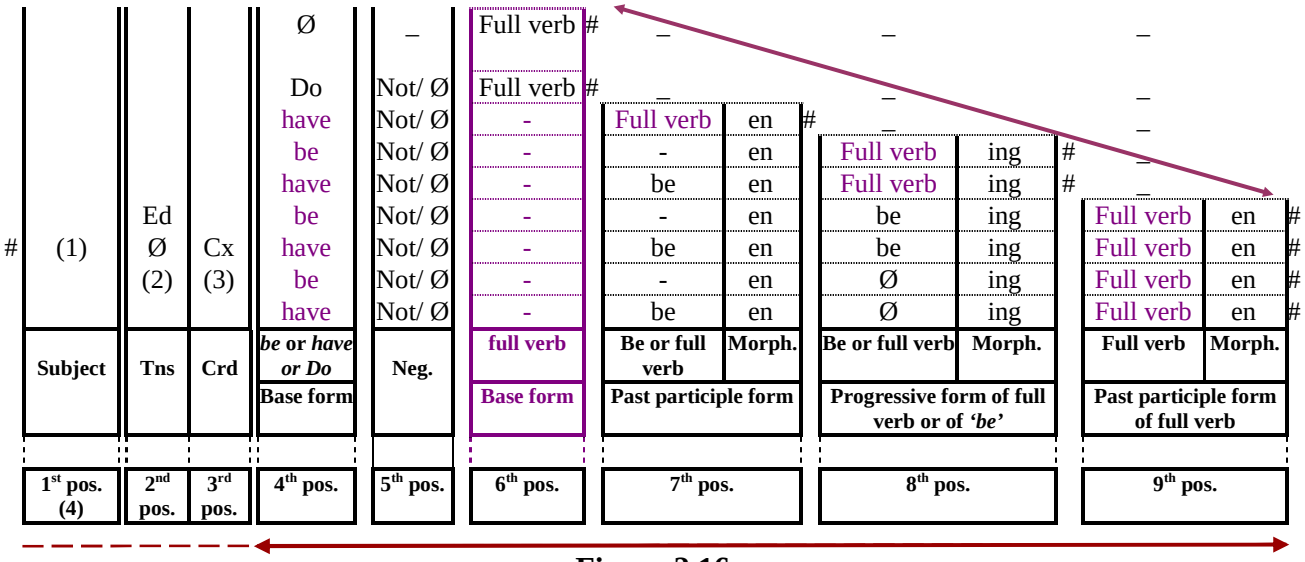


Figure 2.16

(1) Here can appear one of the personal pronouns in the subjective case: *I*, *you*, *he*, *she*, *it*, *we*, *you*, and *they*. When it is the first position which appears from left to right, the sentence is affirmative.

---

effectively used in each language. This phenomenon exists at each level of language. We can mention what the grammarians call the accidental gap at the morphological level and which is defined as follows:

> "a non-existing word which is expected to exist given the hypothesized morphological rules of a particular language. In the literature, an accidental gap is usually thought of as a 'hole' in a paradigm. Example: in English it is possible to derive nouns from verbs by adding the suffixes *-al* and *-(a)tion* to the verbal stem. However, some such derivations do not exist, although there are no grammatical reasons for their nonexistence. Compare the following examples:

(i)	recite	recital	recitation
	propose	proposal	proposition
(ii)	arrive	arrival	*arrivation
	refuse	refusal	*refusation
(iii)	derive	*derival	derivation
	describe	*describal	description" (Kerstens & al. 1996)

(2) We have here two tenses: *Ø* stands for the present tense and *ed* stands for the past tense.

(3) The *x* in C_x stands for either: 1, 2 or 3, to give respectively C_1, C_2, and C_3.

(4) pos. stands for position.

2.5.1.2. Generating patterns of tense forms actualised without overt subjective pronouns

a. The imperative[42]

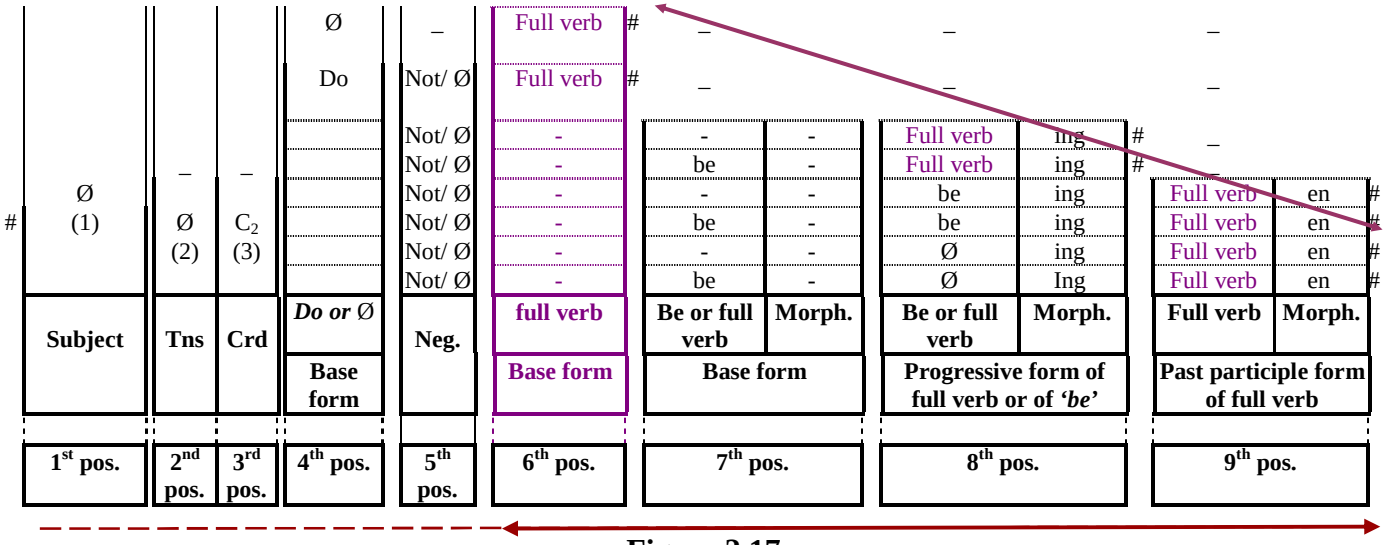


Figure 2.17

(1) The zero mark here is understood to refer to the pronoun *you*.

(2) The empty position stands for the present tense

(3) The empty positions for the concord with the second person singular (C_2).

[42] We note here that a clear distinction has to be made between a command and the imperative form of the verb: for we can command ourselves by using '*let us*' for example: "*Let us all work hard*" (Quirk & Greenbaum 1988: 202). The commands which can be actualised either by a subject or without it ("The zero subject of the imperative mood can also be the indefinite pronoun *someone* or *everyone*: *[Someone] Answer that telephone*! - *[Everyone] Leave the building immediately*." (Aitchison 1998: 301)) like in *Jump, Be reasonable, You be quiet!* (Quirk & Greenbaum 1988: 201).

2.5.1.3. The participial[43]

Position of Negation	**Position of Aux. 1 *(ing* form)**	**Position of full verb *(ing* form)**	**Position of *be* or full verb *(en* form)**	**Position of *be* or full verb *(ing* form)**	**Position of Full verb *(en* form)**
Not / Ø	-	Full verb			
Not / Ø	have	-	Full verb		
Not / Ø	have	-	*be*	Full verb	
Not / Ø	be	-	-	-	Full verb
Not / Ø	have	-	*be*	Ø	Full verb
Not / Ø	have	-	*be*	*be*	Full verb

Figure 2.18[44]

[43] The participial is a verbal form which cannot be used independently in speech as in: *Having passed my exams, I could enjoy my holidays.*

[44] As we can see in this pattern, we have not put the position of the subject (and consequently that of the inflectional position for tense and concord). The question that has to be asked here is whether the gerund has a subject or not? In Universal Grammar, there is a principle (i.e., the projection principle) which "*requires that all clauses have subjects at D- and S- structure*" (Chomsky 1981: 40). And "*θ-theory requires that clauses with certain verb phrases (e.g. persuade John to leave...) must have subjects at the level of LF-representation*" (Ibid.).

The following examples are given:

(i) *We persuaded John that he should finish college.*

(ii) *John was persuaded (Trace NP) that he should finish college*

(iii) *We persuaded john (PRO) to finish college*

(iv) *John was persuaded (Trace NP) (PRO) to finish college*

In fact, in this theory, "*the Principle P, plainly, is the structural requirement that certain configurations –infinitival and gerunds- must have subjects; i.e., the principle P is simply the rule (25) [i.e., S → NP INFL VP* (Chomsky 1981: 25); example: *I believe it to have rained* (cf. Ibid.: p. 26)], *which incorporates both cases if we take gerunds to have clausal as well as NP structure*" (Ibid.: 27). It is also underlined that "*we might then tentatively adopt the assumption that obligatory presence of subject represents a particular choice for a certain*

b. The infinitival

Position of Neg.	**Position of Particle 'To'**	**Position of Aux. 1 (stem)**	**Position of full verb (stem)**	***Position of be* or full verb (*en* form)**	***Position of be* or full verb (*ing* form)**	**Position of Full verb (*en* form)**
Ø / not	to	-	full verb			
Ø / not	to	have	-	full verb		
Ø / not	to	have	-	be	full verb	
Ø / not	to	be	-	-	full verb	
Ø / not	to	be	-	-	Ø	full verb
Ø / not	to	be	-	-	be	full verb
Ø / not	to	have	-	Be	Ø	full verb
Ø / not	to	have	-	be	be	full verb

Figure 2.19

5.2. Tense forms of the secondary pattern

The study of the simple phrase has ended by proposing the following general structure describing the tense forms containing modal auxiliaries in English[45]:

parameter of UG [Universal Grammar]. English and French, for example, make this choice." (Ibid.)

[45] We note here once again that "*although they are frequently awkward-sounding, combinations of all four types (modal, perfective, progressive and passive) are possible: Sue should have been being praised (not vilified)*" (Goodluck 1991: 114).

Position 1	Position 2		Position 3	Position 4	Position 5	Position 6	Position 7	Position 8	Position 9
Subject	**tense**	**concord**	**Modal aux.**	**Negation**	**Aux. *have* or *be* (stem)**	**auxiliary *have* or full verb (stem)**	***be* or full verb (en form)**	***be* or full verb (ing form)**	**Full verb (en form)**
# (1)	Ed / Ø	C_x **(3)**	Will / Shall / May / Can /	Not Ø	Have	-	Taken #	_	
					Have	-	Been	Taking #	
					Have	-	Been	Ø	Taken #
					Have	-	Been	Being	Taken #
# (1)	Ed / Ø	C_x **(3)**	Will / Shall / May / Can /	Not Ø	-	Take #			
					Be	-	-	Taking #	
					Be	-	-	Ø	Taken #
					Be	-	-	Being	Taken #
# (1)	Ø	C_x **(3)**	Must, dare, need	Not Ø	Have	-	Taken #		
					Have	-	Been	Taking #	
					Have	-	Been	Ø	Taken #
					Have	-	Been	Being	Taken #
# (1)	Ø	C_x **(3)**	Must, dare, need[46]	Not Ø	-	Take #			
					Be	-	-	Taking #	
					Be	-	-	Ø	Taken #
					Be	-	-	Being	Taken #

(2)

Figure 2.20

(1) Here can appear one of the personal pronouns in the subjective case: *I*, *you*, *he*, *she*, *it*, *we*, *you*, and *they*.

(2) The order of these positions can be inverted in case our statement is interrogative.

(3) The *x* in C_x stands for either: 1, 2 or 3, to give respectively C_1, C_2, and C_3. However, no mark of concord is shown in the verbal form of the modal auxiliaries.

The tense forms containing the two remaining modal auxiliaries that are followed by the particle '*to*' and the base form of the verb, namely: *ought to* and *used to*, can be represented also in the following way:

[46] *Dare* and *need* are sometimes called 'marginal' or 'semi-negatives' as in Crystal (2008) who defines them as "*verbs which display some but not all the properties of the auxiliary class*" (p. 46).

Position 1	**Position 2**		**Position 3**	**Position 4**	**Position 5**	**Position 6**	**Position 7**	**Position 8**	**Position 9**	**Position 10**
Subject	**tense**	**Conc.**	**Modal aux.**	**Neg.**	**Particle 'to'**	***have* or *be* (stem)**	***have* or full verb (stem)**	***be* or full verb (en form)**	***be* or full verb (ing form)**	**Full verb (en form)**
# (1)	ed	C_x **(3)**	use	Not / Ø	To	Have	-	Taken #	_	
						Have	-	Been	Taking #	
						Have	-	Been	Ø	Taken #
						Have	-	Been	Being	Taken #
# (1)	ed	C_x **(3)**	use	Not / Ø	To	-	Take #			
						Be	-	-	Taking #	
						Be	-	-	Ø	Taken #
						Be	-	-	Being	Taken #
# (1)	Ø	C_x **(3)**	ought	Not Ø	To	Have	-	Taken #		
						Have	-	Been	Taking #	
						Have	-	Been	Ø	Taken #
						Have	-	Been	Being	Taken #
# (1)	Ø	C_x **(3)**	ought	Not Ø	To	-	Take #			
						Be	-	-	Taking #	
						Be	-	-	Ø	Taken #
						Be	-	-	Being	Taken #

(2)

Figure 2.21

(1) Here can appear one of the personal pronouns in the subjective case: *I, you, he, she, it, we, you,* and *they.*

(2) The order of these positions can be inverted in case our statement is interrogative.

(4) The *x* in C_x stands for either: 1, 2 or 3, to give respectively C_1, C_2, and C_3. However, no mark of concord is shown in the verbal form of the modal auxiliaries.

2.6. Concluding remarks

Before ending this chapter, we propose to focus on one aspect of our work and which is the search for the *uṣūl* and *furū'*, i.e., the determination of the primitive structures and those deriving from them as well as the operations allowing such derivations (cf. this chapter, pp. 53-56 and pp.70-72).

2.6.1. The transformational process within the pattern

The proposed structure in Figure 2.16 (p. 85) generates ordinary, perfect, and/or progressive tenses, appearing in affirmatives (positive or negative) sentences both in the active and the passive voice. The full verb (in addition of course to the subject and the inflectional elements for tense and concord) in the proposed pattern constitutes a kernel unit, while the other elements (the auxiliaries and the negative particle *not*) are only additions with regard to the full verb in that sense that they can appear only if a full verb exists in the sequence in question. This kernel has the possibility to move within the positions of its generating pattern.

The representation of the positions with fixed morphologies gives the concept of movement in the pattern an important dimension, since each time the full verb moves from one position to another one[47], it loses the morphology of the former position to acquire that of the position to which it moves. The preceding morphology is carried by the auxiliary *be*.

The movement of the full verb in the pattern does not occur any way, on the contrary, it is organised. To give more details about this point, let us see again the dynamic generating pattern of the English tenses of the primary pattern and observe carefully how the full verb shifts from one position to another one.

[47] This is why we speak of a dynamic pattern.

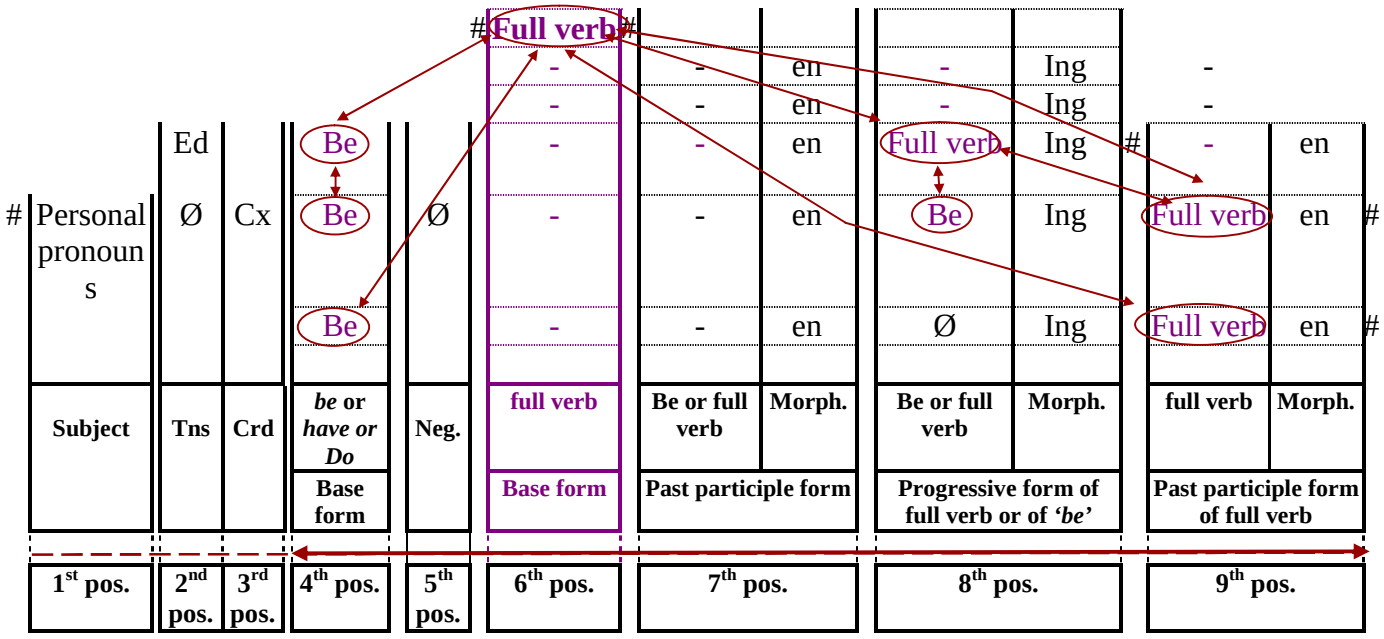


Figure 2.22: Movement of the full verb within the pattern of the ordinary English tenses (positive statements) of the primary pattern

We have represented here only the case where the sentences are positive, while the following figures show us the transformational process that takes place when the sentences are negative in case of ordinary tenses (Figure 2.23) and also perfect tenses (Figure 2.24).

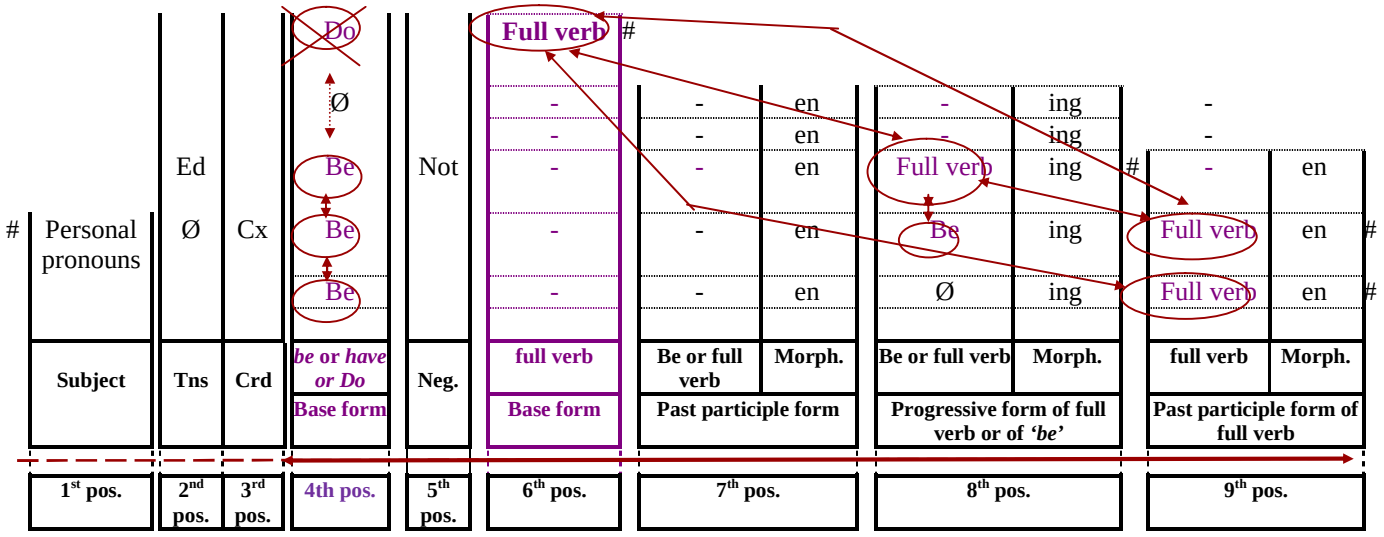


Figure 2.23: Movement of the full verb within the pattern of the ordinary English (negative statements) of the primary pattern

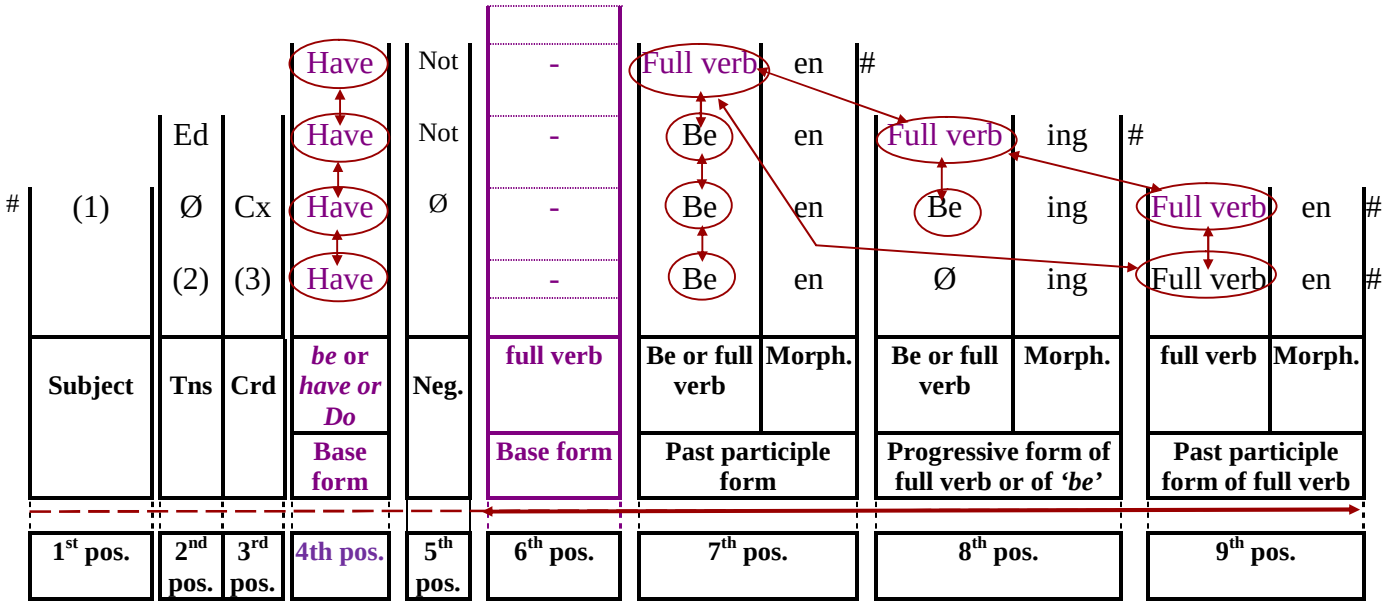


Figure 2.24: Movement of the full verb within the pattern of the perfect English tenses of the primary pattern

Let us describe in detail how this movement happens:

- When the full verb is shifted from the sixth position towards the eighth or the ninth position, the auxiliaries *have* and *be* are introduced in the fourth position. When it is shifted to the seventh position only *have* can appear in the fourth position.
- When the full verb is shifted from the seventh position to the eighth or the ninth position, the auxiliary *be* is introduced in the former position to keep the *-en* form of the verb form and the full verbs acquires the new morphology of the position to which it is shifted.
- When the full verb is shifted from the eighth position to the ninth position, the auxiliary *be* is introduced in the former position to keep the *-ing* form of the verbal form and the full verb acquires the new morphology of the position to which it is shifted. In this case it plays the same role as the auxiliary *do* when

introduced in the negative and interrogative sentences containing ordinary non-continuous tenses to carry the morphology.

- The position of the full verb (here the sixth position) is the only position that remains empty even after the shift of its content to another position.

Thus, this representation allows us to show that during the transformational process from the active to the passive voice, for example, the tense form does not lose any of its characteristics. For example, *be* is introduced to keep the progressive aspect in Figure 2.25 below. The arrows showing these movements are bi-directional, i.e., we can go from the source sequence to the derived ones[48] thanks to some operations, namely the shift of the full verb and the appearance of some auxiliaries, and go back from the derived structures to the source structure thanks to the deletion of the auxiliaries that were added in the first operations and the return of the full verb to the position from which it first moved. The kernel sequence is the source sequence which is not the result of any transformation[49]. Let us clarify this:

- **a. The transformational rules that allow to extend the verbal form**

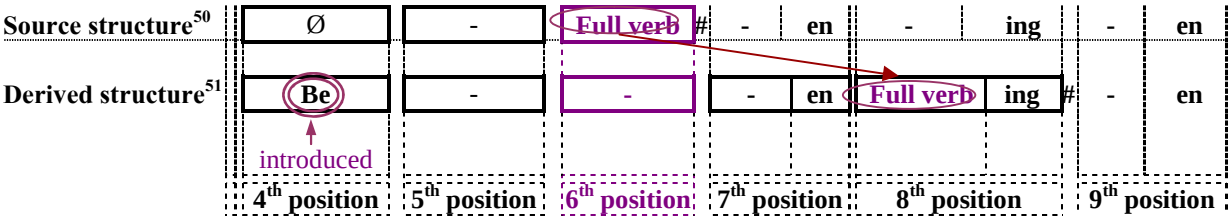


Figure 2.25

[48] The derived sequence being the sequence that results from the application of transformations on the kernel sequence.

[49] For us, *I sing*, for example, for the ordinary statement and *I have tried*, for example, for the perfect one.

[50] For example *I work.*

[51] For example *I am working*.

- **b. The transformational rules that allow to come back to the source structure**

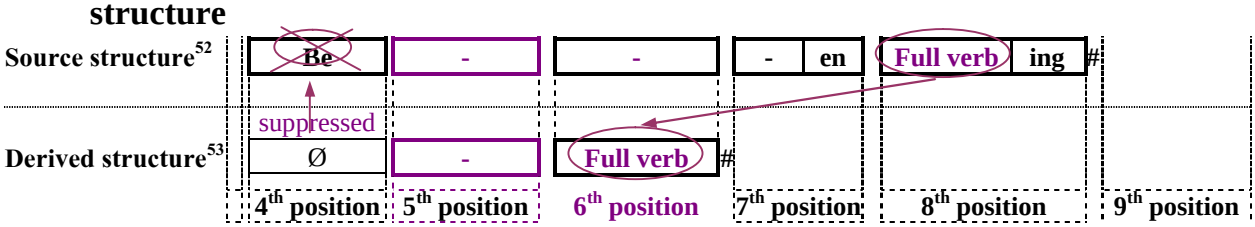


Figure 2.26

2.6.2. The transformational process between patterns

We propose here to examine whether the pattern in Figure 2.16 (p. 85) form an *aṣl* of that of the imperatives (Cf. Figure 2.17, p. 86), or vice versa. In fact, the comparison of the two structures shows us that the verbal forms deriving from the pattern of the imperatives can also be derived from the pattern generating the tense forms of the primary pattern if the position of the subject in this latter contains the symbol *Ø*. Consequently, the positions of tense and concord are necessarily empty. Add to that the specificity of the pattern of the imperative in which only the auxiliary *Do* or *Ø* can appear in the fourth position and the seventh position contains only the base form of the auxiliary *Be*.

This interpretation can be argued by the fact that in *take it* what is intended by the speaker is in fact: *(you) take it*. *You* is implicit (Cf. *muḍmar* (مضمر) in glossary) because we do not need to express it explicitly: the command is, generally, directed towards the addressee. Thus, it is the context of communication which provides an understanding of the subject of the verb. The emphasis is rather

[52] For example *I was working*.

[53] For example *I worked*.

put on the action that is to be done and since language has the characteristic of being economical, the elements that are not necessary and clearly understood by the context can be omitted. The transformational grammars interpret the imperatives also in terms of a 'you deletion' that is optional in the following way:

a. *You take care of Sally*

b. *Take care of Sally* (Cf. Baker 1978: 127)[54]

The same can be said about the two inflectional positions since the commands are given in the present tense and even the concord is C_2 and this explains why the form of the verb does not change whether the command is directed to one or more persons. Thus, we propose that the structure for the imperatives is in fact a 'special case' of the structure proposed in Figure 2.16 (p. 85).

2.6.3. The formal equivalence between patterns

If we compare the pattern of the participial (cf. Figure 2.18, p. 87) and that of the infinitival (cf. Figure 2.19, p. 88), we can notice that there is a great similarity between the two patterns especially the last three positions which are exactly the same. The difference in the two patterns appears in the other positions. The form of the full verb in the central position and the auxiliaries in the preceding position is not the same in the two patterns: in that of the participial, it is an *-ing* form, while in that

[54] This is also the case of most recent works in which the imperatives are considered as constructions without overt subjects since these latter can appear in some languages as in German and Dutch imperatives:

«(ii) Vertel (jij) me eens hoe dat zit(?) - 'Tell (you) me now how it is' » (Kerstens & al. 1996)

of the infinitival it is a base form. We have to note that not all the tense forms of the generating pattern of the participial have equivalent tense forms in the pattern of the infinitival[55]. This similarity between the two patterns can be represented as follows:

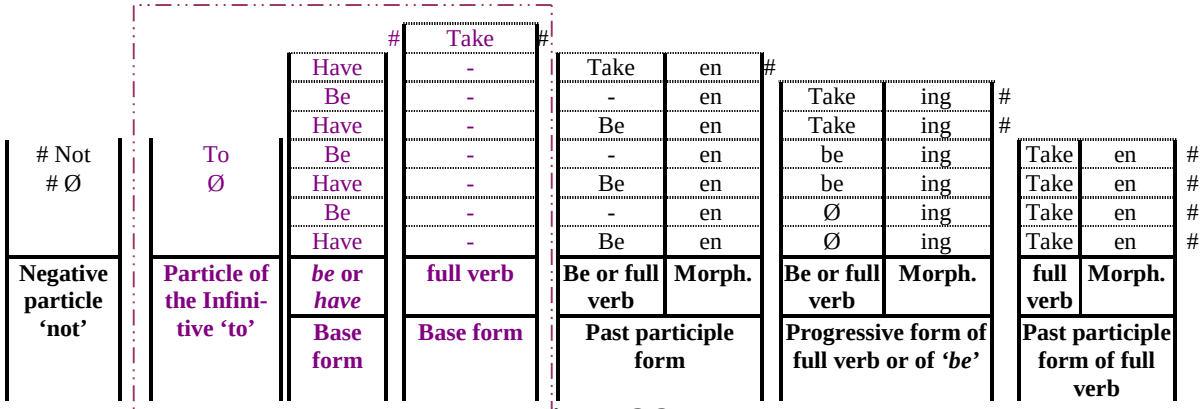


Figure 2.27

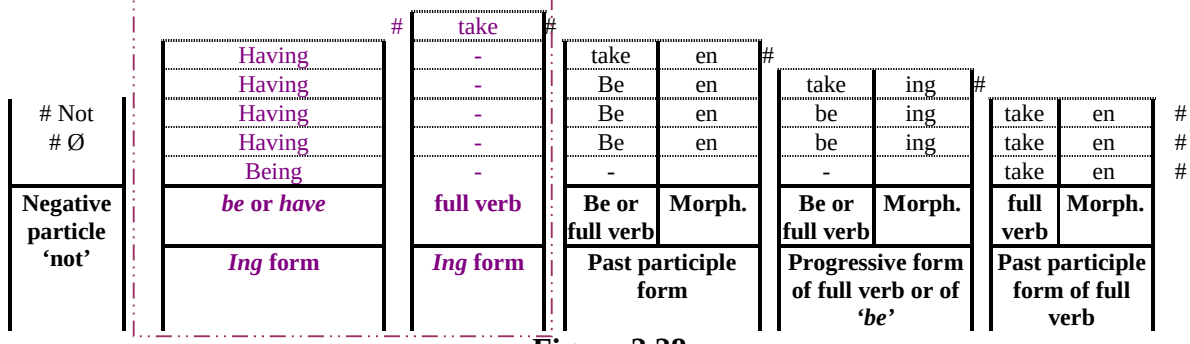


Figure 2.28

[55] We make reference here to the ordinary progressive forms. This seems to us to be logical because the corresponding participial forms of such tense forms would be of the form: **being taking* or **being being taken*. As observed till now, no identical forms from the morphological point of view can be adjacent to each other in the simple verb phrase. The only exception to this are the forms like *have been taken,* though we have noted that the two *-en* forms are not entirely identical since the former is perfect, while the latter denotes the passivization of the tense form and they occur in two different positions in the proposed pattern.

To clarify more this equivalence[56], we propose the following figure:

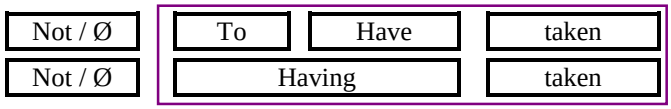


Figure 2.29

Conclusion

In this chapter we described the procedure of analysis of the English language according to the neo-khalilian theory emphasising our main goal being the search for the patterns generating the studied linguistic units and the determination of the primitive structures and those deriving from them as well as the operations allowing such derivations. Then, we presented the main results brought by the study of the simple phrase as a necessary step for understanding the way we propose to determine the lexical and supra-lexical levels in English and which will be the object of the following chapter.

[56] This equivalence exists also in Arabic, since, in both languages, there is a special position in the pattern of the verbal *lexie* in which appear converting elements (cf. Appendix one) and the tense forms which are introduced by one of these converting elements, are replaceable by nouns. In Arabic, we can give the example of *'an* (e.g. *'an taṣūmū ẖayrun lakum*, أن تصوموا خير لكم, *i.e.*, that you fast is better for you, which is equivalent to *ṣiyāmukum ẖayrun lakum*,صيامكم خير لكم *i.e.*, your fasting is better for you). While in English, this phenomena exists through the grammatical particle *to* which makes the verbal *lexies* it introduces equivalent to the gerunds (*to have* is equivalent to *having*).

Chapter 3

▪ THE DETERMINATION OF THE LEXICAL AND THE SUPRA-LEXICAL LEVELS OF ENGLISH

Introduction

This chapter examines the way we suggest to situate the different extracted patterns within the theoretical framework of the *neo-khalilian* linguistic model (Hadj-Salah 1979). We have first to underline that some suggestions presented in our preceding study (Khelout 2001) will be revised here mainly with regard to the unit suggested at the lexical level. In fact, even what is presented in this present study cannot constitute a definitive pattern of the English verbal *lexie* or *tectonie* until all the grammar of the English language is described according to the same principles. Only an exhaustive description can allow us to determine exactly what belongs to the verbal or the nominal *lexie* or even to higher levels like the supra-lexical level or that of the *surrection*.[1]

3.1. Formal definition of the described linguistic units according to the neo-khalilian linguistic model

In our preceding work (Khelout 2001), we have suggested that the tense forms of the primary pattern, without neither the position of the subject nor that of the inflectional positions of tense and concord, would be treated as *lexies*. We have then suggested that all the tense forms containing subjects and inflectional positions would be generated exclusively at the supra-lexical level as well as those containing the modal auxiliaries.

[1] For these concepts, cf. chapter one.

In this chapter, we propose to revise this delimitation of the English verbal lexie for the reasons we shall to expose below. We have, first of all to underline the specificity of the verb in Arabic. In fact, in this language, when the subject and the object are affixed pronouns they become part of the verbal lexie: they are bound morphemes which cannot be separated from the base form of the verb as in: *ḍarab-tu-hu* (ضربـ - تـ - ـه), i.e.,: *I hit him*. In English, these pronouns are perfectly detachable from the base form of the verb[2], though not completely independent in speech[3]. The

[2] Except the case of the unit made up of the subject and some auxiliaries such as *Be* and *Have* in, for example, *I'm happy* and *I've written a book*, and even with some modal auxiliaries like *Will* in, for example, *I'll do it*.

[3] Some tense forms cannot be actualised without the personal pronouns that occur in the position of the grammatical subject as if they form with them a single unit. This is best shown by the answer given to the question: *What does he do?* which is *He works* and not **works*. This means that, we cannot split *works* from *He* since we cannot utter *works* alone. We can also notice that there is a variation of the tense form according to the chosen pronoun (*I am*, *You are*, etc.) and a fixed morphology when the pronoun is the same (*He lives*, *He works*, etc.). The pronouns can rather be replaced by other English pronouns since they form a closed list of elements. Quirk & Greenbaum define the closed-class items is the set of items that:

> cannot normally be extended by the creation of additional members […] the items are said to constitute a system in being (i) reciprocally exclusive: the decision to use one item in a given structure excludes the possibility of using any other (thus one can have the book or a book but not *a the book); and (ii) reciprocally defining: it is less easy to state the meaning of any individual item than to define it in relation to the rest of the system. (1988: 19).

Hadj-Salah says about this point that "*the verb is considered as representing a ṯiqal much greater than the noun because it cannot be actualised without the subject, gender designences and number and temporal actualisers*" (1979: II, 167) (Our translation of: "Le verbe est considéré ainsi comme présentant un ṯiqal (ثقل) beaucoup plus grand que le 'ism parcequ'il ne peut s'actualiser sans le sujet, les désignences de genre et de nombre et les actualisateurs temporels").

existence in English of a unit which can denote by its kernel (the base form of the verb) a given meaning in addition to aspect (continuous or not) and voice (active or not), has formed the basis of this suggestion in our Magister dissertation, in addition to the fact that it is its integration at a higher level where the auxiliaries can function as operators that allows it to have also tense and agreement inflection and receive the different denotations of the modal auxiliaries (like willigness, certitude, etc.).

The borderline between the *lexie* and the *tectonie* is quite difficult to make when it is question of a simple verb phrase made up of a subject and a verb, but it becomes clearer by the following passage from Hadj-Salah (1979):

> It is true that the specific abstract order of the *binā'* or tectonic construction can be established only at the inter-lexical level, it is not less true that the syntactic formula: {R → T1, T2} does not belong necessarily to the inter-lexical because there is syntax even inside the *lexie* and in the kernel of the *lexie* (as in # *ḍarabtuka* .. #). But, we have to note also this intra-nucleus and intra-lexical syntax concerns only the verbal *lexies*. The pattern (*ḥadd*){R → T1, T2} which does not characterize only the inter-lexical *tectonies* is then a general formula specific to syntax and not to the only inter-lexical component of this same syntax.[4].

In fact, the *tectonies* for Hadj-Salah are also "*isolable sequences as are the lexies: they are different from them by the possibility that has the speaker to*

[4] Our translation of: "il est vrai que l'ordre abstrait spécifique du *binā' ou combinaison tectonique ne peut s'établir qu'à l'inter-lexical*, il n'en est pas moins vrai que la formule syntaxique: {R → T_1, T_2} *ne relève pas nécessairement de l'inter-lexical* car il y a de la syntaxe *même à l'intérieur des lexies et jusque dans le noyau de la lexie* (comme dans # ḍarabtuka..#). Mais il faut aussi remarquer que cette syntaxe intranucléaire et intra-lexicale ne concerne que les lexies verbales. Le *ḥadd* {R → T_1, T_2} qui ne caractérise pas seulement les tectonies inter-lexicales est donc *une formule générale* propre à la syntaxe et non à la seule composante inter-lexicale de cette même syntaxe." (Hadj-Salah 1979: II, 198-199)

dissociate them to smaller isolable sequences"[5]. In Arabic, *fa'altu* (فَعَلْتُ, I did) is a verbal *lexie* whose functioning is comparable to that of a *tectonie*[6],because it is a minimal unit of communication and at the same time we have a governor and a governed term[7].

Hadj-Salah proposes to integrate the verbal *lexie* in the following pattern:

Governor	1st Governed term	
Verb	Pronoun (1)	Lexie (2)

Figure 3.1

As we can notice, the position of the first governed term is divided into two complementary positions; namely, that of the pronoun (*ḍamīr* ضمير) and that of the lexie to which this pronoun refers. We note that the content of the two positions (1) and (2) are exclusive in the sense that we cannot have a pronoun and a lexie in the position of the governed term in a same *tectonie; i.e.,* if one of the two

[5] Our translation of: "des tranches isolables, tout comme les lexies: elles en diffèrent par la possibilité qu'a le locuteur de les dissocier en tranches isolables plus petites" (Ibid.: II, 199). Though, we emphasize once again, that Hadj-Salah underlines, for what concerns the Arabic language, that "*the tectonie at the inter-lexical level is different from the tectonie at the lexical level (that of the lexie) by the characteristic of being separable from its basic components*" (Hadj-Salah 1979: II, 189).

[6] Hadj-Salah speaks of a lexical *tectonie* and a syntactic *tectonie* and according to him there is no contradiction since we are positioned at two levels of abstraction (cf. ibid.: II, 197-198).

[7] But, if we replace the pronoun with another linguistic unit, for example a noun: here we speak of a *tectonie* and not a *lexie,* because we have an integration of different *lexies* in a pattern of governors and governing elements. This similarity allows a projection to the level where function the *tectonies.* Nonetheless, it is a *lexie* and not a *tectonie,* because we cannot speak really of a *tectonie* as long as we do not have a real construction on the basis of separable independent *lexies, i.e.,* combination of nominal and verbal *lexies.*

positions is full, the other is necessarily empty. Thus, *ḍaḥika* (ضحك) is a *lexie* that can function as a *tectonie*:

R	T1	
ḍaḥika	ø	-

Figure 3.2

While, *ḍaḥika* (V) *al-waladu* (S) (ضحك الولد i.e., *The boy* (S) *laughed* (V)) is only a *tectonie* because it is an integration of two *lexies*: one verbal and the other nominal. Thus, the integration of *al-waladu* (الولد) as a subject for the verb: *ḍaḥika* (ضحك) has compelled us to leave the level of the *lexie* and attain the level of the *tectonie*:

R	T_1	
	Pronoun	*Lexie*
ḍaḥika	–	al-waladu

Figure 3.3

Let us examine this time *fa'altuha* (فعلتها), i.e., *I have done it*. This unit is according to Hadj-Salah a *lexie* because it is a minimal unit of communication, both the verb *fa'ala* فعل and the affixed pronoun *–tu* تُ constitute a kernel in addition to another position in which appear the objective affixed pronouns which can be added or deleted. This unit denotes a complete message that can be understood by the communicators, but with one condition: the communicational context must provide the necessary additional information to the receiver. This means that: *We have done it* outside of any context is not a comprehensible message. We can, for example, imagine the following context: Two men trying to carry heavy stones from one place to another and once they have finished the work, one of them says: *We have done it!*, expressing his feelings. He is happy that they have carried all the stones. Or he is

feeling relief or is astonished that they have been able to do such a difficult work. In all cases, the receiver(s) of the message understand that the job is done.

To clarify more this idea, we can compare this to short answers like for example: "*yes, he has"* which is an independent unit of communication but which cannot be understood outside of the context which provides the necessary elements for the understanding of the utterance: i.e., for example the question *Has John bought the book?* So that the hearer decodes the utterance as meaning: *Yes, John has bought the book*.

Furthermore, while analysing deeply the verbal *lexie* proposed by Hadj-Salah (1979), we found that the Arabic verbal *lexie* contains the subject and *kalim* which can denote, in addition to negation and temporal precision, certitude, probability, command, invitation, etc (cf. Appendix one). In English, modal auxiliaries also can be used to denote willingness, request, offer, refusal, etc[8]. To explain more this point, we can give the example of *sa-* (سـ) in Arabic which appears at the lexical level and which is equivalent in meaning to *Will* in English. But this will not bring us to propose to integrate the modal auxiliaries in the level of the *lexie* for two reasons one of them will be given in this chapter (cf. p. 107) and the other will be given in the following chapter (cf. chapter four, p. 171).

All these arguments have formed the basis of the revised version of the formal pattern we propose for the description of the handled English tense forms.

[8] For the different uses of *will* and *shall* for example, cf. Appendix three in Ward (1970).

Before presenting our suggestion concerning the lexical and supra-lexical levels, let us examine the units proposed in our work:

- **Level One:** It is the level in which appear forms of the type: *To do, To be done, To be being done, To have done, To have been doing*, etc, and which are infinitive forms of the English verb that are equivalent to their corresponding gerunds. Thus, these are rather the *maṣdar* (المصدر) from which derive the tensed forms and not *lexies*. We can propose two patterns for these forms: one for the ordinary infinitive forms and one for the perfect infinitive forms:

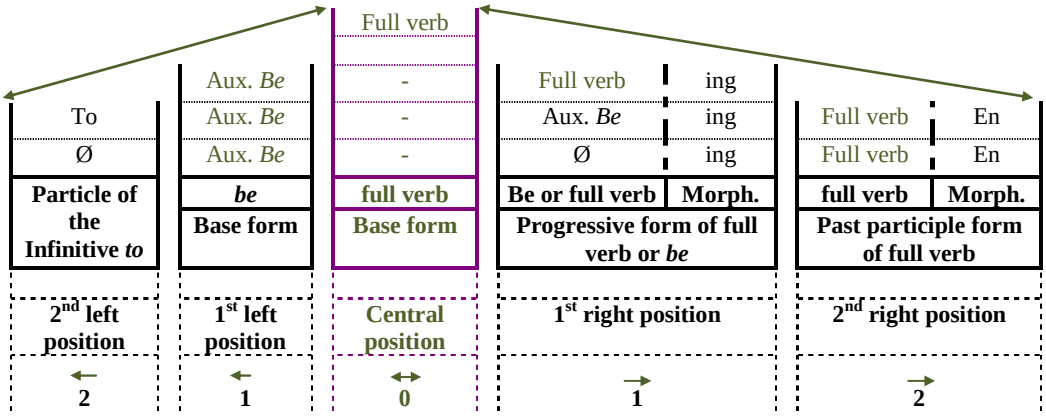


Figure 3.4: Generating pattern of the ordinary infinitive forms

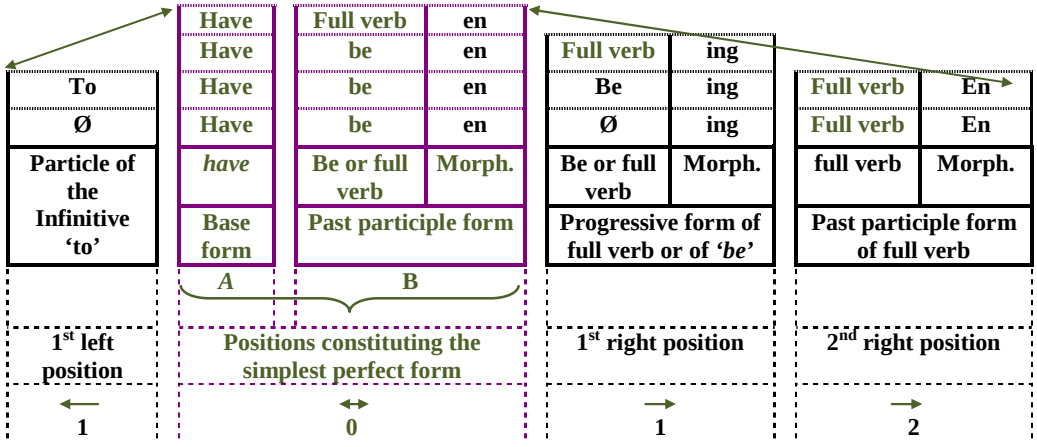


Figure 3.5: Generating pattern of the perfect infinitive forms

And we can propose a third pattern which gathers the two types of forms:

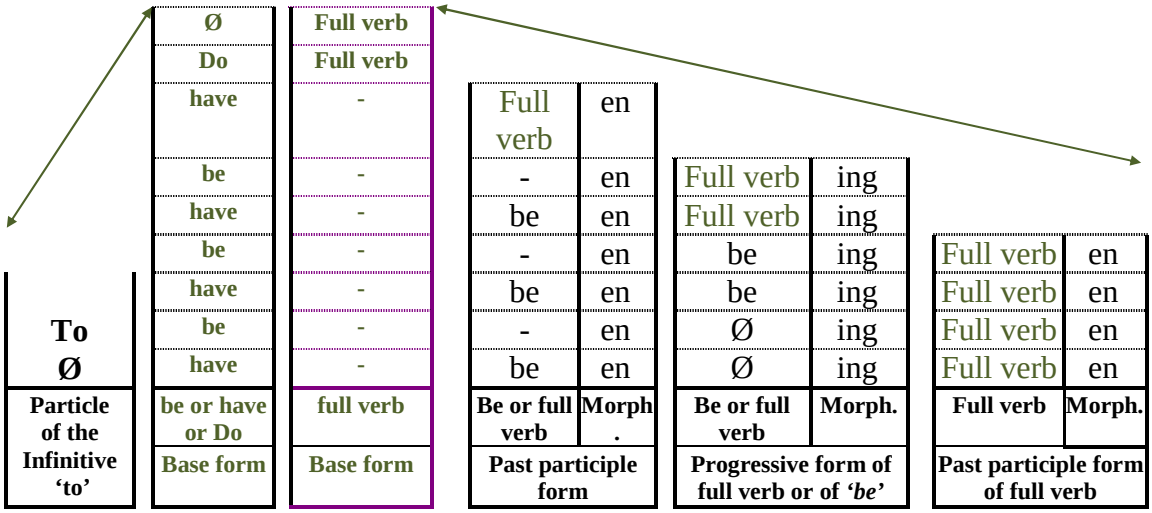


Figure 3.6: Generating pattern of the infinitive forms of the English verbs

We can notice that the modal auxiliaries do not appear at this level, because we do not have tense forms such as '*To will*', '*To shall*',… This constitutes the first argument for handling the modal auxiliaries in our study as linguistic units which function in a different way from the auxiliaries *Do*, *Have* and *Be*.

Level Two: From this level onwards appears the position of the subject (taking into account only the personal pronouns), and thus, that of inflection (due to tense and concord). At this level, we suggest that the infinitival is integrated in the pattern of the tense forms of the primary pattern in the following way:

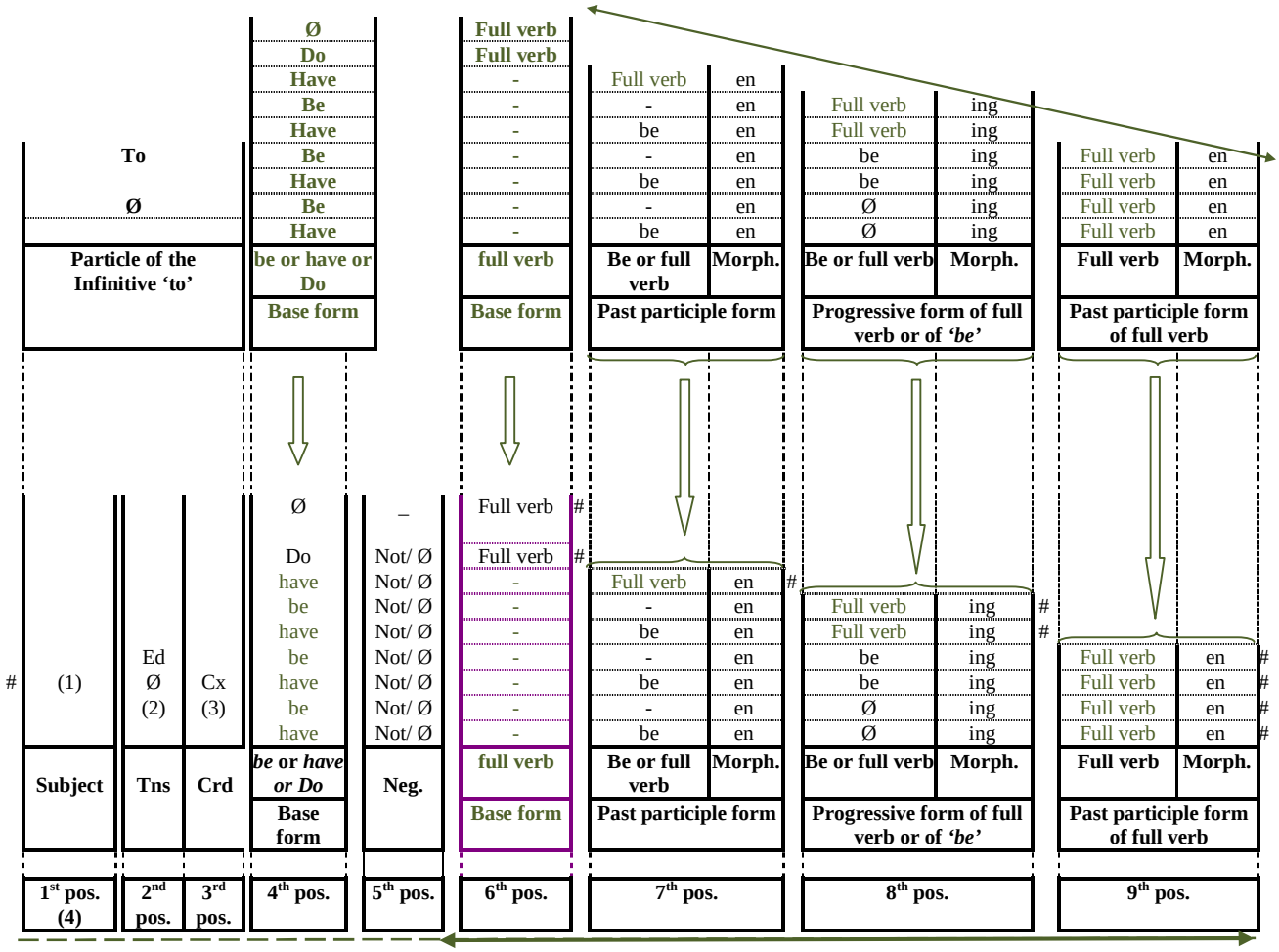
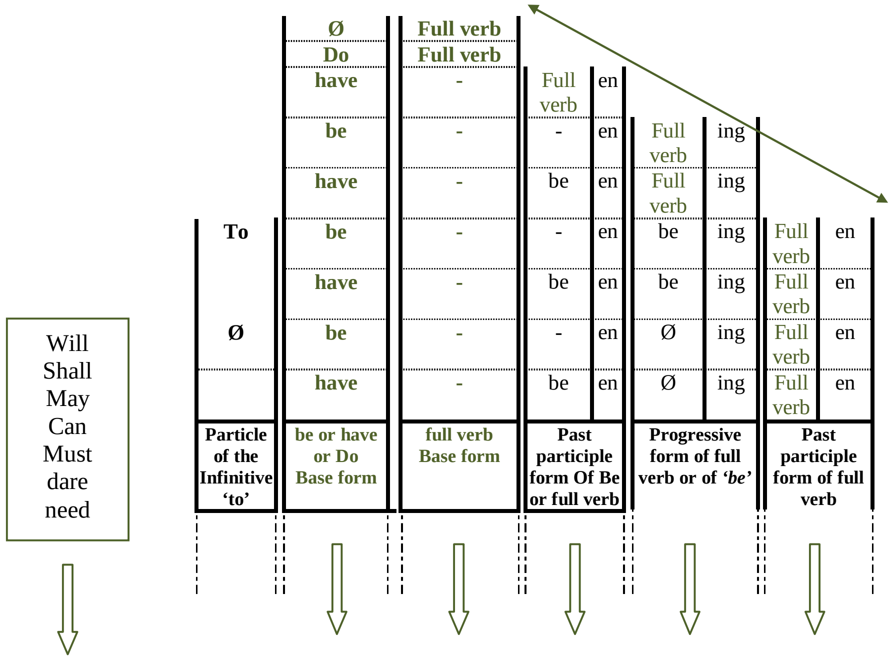


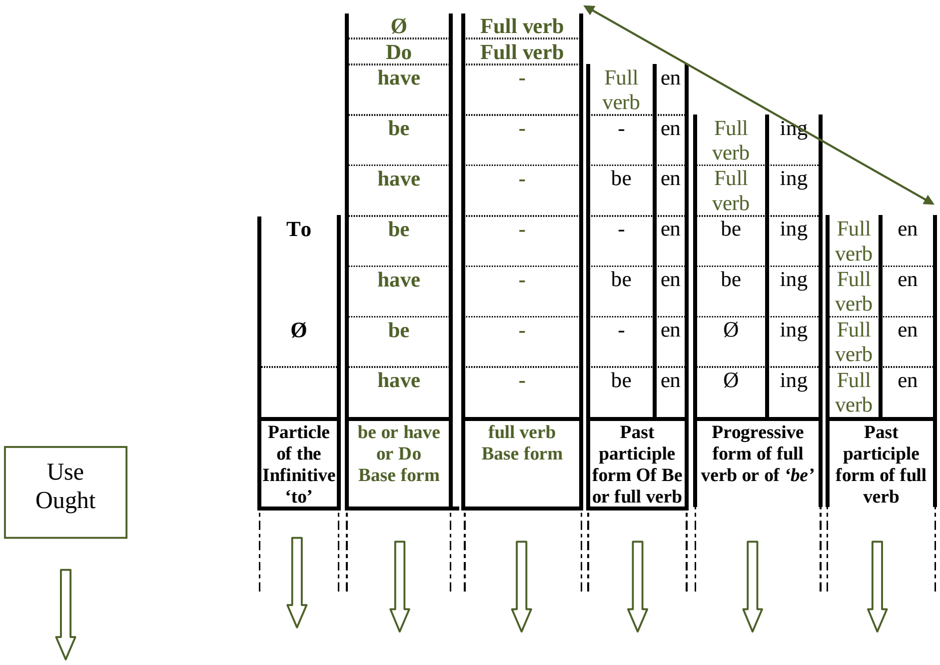
Figure 3.7

Level Three: At this level, we suggest that the infinitival is integrated in the pattern of the tense forms of the secondary pattern in the following two ways according to whether the modal auxiliary is followed by 'to' or not:



Position 1	Position 2		Position 3	Position 4	Position 5	Position 6	Position 7	Position 8	Position 9
Subject	**tense**	**concord**	**Modal aux.**	**Negation**	**Aux. *have* or *be* (stem)**	**auxiliary *have* or full verb (stem)**	***be* or full verb (en form)**	***be* or full verb (ing form)**	**Full verb (en form)**
# (1)	Ed / Ø	C_x **(3)**	Will /	Not	Have	-	Taken #	_	
			Shall /	Ø	Have	-	Been	Taking #	
			May /		Have	-	Been	Ø	Taken #
			Can /		Have	-	Been	Being	Taken #
# (1)	Ed / Ø	C_x **(3)**	Will /	Not	-	Take #			
			Shall /	Ø	Be	-	-	Taking #	
			May /		Be	-	-	Ø	Taken #
			Can /		Be	-	-	Being	Taken #
# (1)		C_x **(3)**	Must,	Not	Have	-	Taken #		
	Ø		dare, need	Ø	Have	-	Been	Taking #	
					Have	-	Been	Ø	Taken #
					Have	-	Been	Being	Taken #
# (1)		C_x **(3)**	Must,	Not	-	Take #			
	Ø		dare, need	Ø	Be	-	-	Taking #	
					Be	-	-	Ø	Taken #
					Be	-	-	Being	Taken #

Figure 3.8



Subject	tense	Conc.	Modal aux.	Neg.	Particle 'to'	*have* or *be* (stem)	*have* or full verb (stem)	*be* or full verb (en form)	*be* or full verb (ing form)	Full verb (en form)
Position 1	**Position 2**		**Position 3**	**Position 4**	**Position 5**	**Position 6**	**Position 7**	**Position 8**	**Position 9**	**Position 10**
# (1)	ed	C_x **(3)**	use	Not / Ø	To	Have	-	Taken #	_	
						Have	-	Been	Taking #	
						Have	-	Been	Ø	Taken #
						Have	-	Been	Being	Taken #
# (1)	ed	C_x **(3)**	use	Not / Ø	To	-	Take #			
						Be	-	-	Taking #	
						Be	-	-	Ø	Taken #
						Be	-	-	Being	Taken #
# (1)	Ø	C_x **(3)**	ought	Not Ø	To	Have	-	Taken #		
						Have	-	Been	Taking #	
						Have	-	Been	Ø	Taken #
						Have	-	Been	Being	Taken #
# (1)	Ø	C_x **(3)**	ought	Not Ø	To	-	Take #			
						Be	-	-	Taking #	
						Be	-	-	Ø	Taken #
						Be	-	-	Being	Taken #

Figure 3.9

This kind of integration of the infinitival at each syntactic pattern is quite interesting since it shows us that the passage from one level to another is not the result of a simple concatenation of the linguistic units of the inferior level but occurs according

to a real integration of the patterns which transcend the inferior level (cf. Hadj-Salah 1979: II, 195).

Let us now try to determine the lexical and the supra-lexical levels in English.

3.2. Determination of the lexical level

3.2.1. The pattern

According to the stage reached by our description, we propose a generalized generating pattern of the English verbal *lexie* consisting in the following pattern:

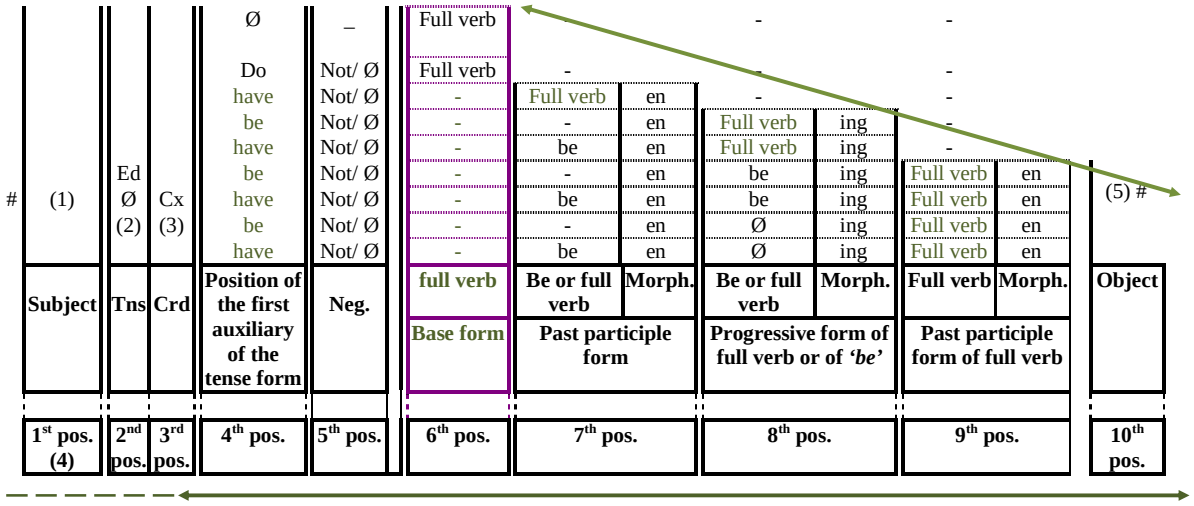


Figure 3.10: Dynamic Generating pattern of the English verbal lexie of the primary pattern

(1) Here can appear one of the personal pronouns in the subjective case: *I*, *you*, *he*, *she*, *it*, *we*, *you*, and *they*. When it is the first position which appears from left to right, the sentence is affirmative.

(2) We have here two tenses: *Ø* stands for the present tense and *ed* for the past tense.

(3) The *x* in *Cx* stands for either: 1, 2 or 3, to give respectively *C1*, *C2*, and *C3*.

(4) pos. stands for position.

(5) Here can appear one of the personal pronouns in the objective case: *me*, *you*, *him*, *her*, *it*, *us*, *you*, and *them*.

3.2.2. Description of the positions of the pattern

a. The fourth position

This position can be empty; otherwise, it always contains one of the auxiliaries *be* or *have* or *do*. This is one of the two only positions which confer no morphology to the elements it contains (the other position is the sixth position[9]).

b. The fifth position

The fifth position can contain *not*, the statement is then negated, or *Ø* when the statement is positive. It can also be full only if one of the other positions is full; thus, our pattern can generate: *Ø take*, but not: **not*.

c. The sixth position

The sixth position can contain either a full verb or it is necessarily empty. When this position is full, all the other positions after it are necessarily empty. The full verb, which appears in this position, constitutes the point of departure of all the transformational rules that occur within this pattern. It is these transformational rules, in conjunction with the organised movement of the full verb within the pattern, which allows the introduction of the elements of the other positions. (Cf. Chapter two: p. 91-95).

[9] We mean the only position from those that can contain full verbs or auxiliaries.

d. The seventh position

The seventh position can be necessarily empty (i.e., it contains '-') or it can contain a full verb or the auxiliary *be* to which it confers an *-en* form.

e. The eighth position

The eighth position is necessarily empty (i.e., it contains '-') or it can contain a

full verb or the auxiliary *be* to which it confers an *-ing* form. It can also contain *Ø*.

f. The ninth position

The ninth position is necessarily empty when the full verb appears either in the sixth, seventh or eighth position; otherwise, it contains a past participle form (an *-en* form) of the full verb and the sentence containing the tense form is in the passive voice.

f. The tenth position

The tenth position contains the object in case the verb is transitive. Only the pronouns are taken into consideration at this level.

3.3. Determination of the supra-lexical level

3.3.1. The pattern

In Arabic, the *tectonie*, as we have seen in chapter one, is the linguistic unit which is generated by a structure (*binya* بنية) made up of syntactic governors and up to two governed terms in addition to some linguistic units appearing outside the *binya* and which might be optional (D) or obligatory (T3). The search for such a pattern in

English, in our preceding research, has ended up by suggesting the following pattern $[(R \rightarrow T1)\ ,\ T_2] \pm D$. This pattern is made up of some positions which constitute what Hadj-Salah (1979) calls the *pivot*[10] of the *tectonie* made up of the governing elements and the first governed term.

Governing elements (R)			Negation (Neg)	First governed term (T_1)	Second governed term (T_2)	Third governed term (T_3)	Peripheral elements (D)
Subject (S)	Inflection (Infl)	Operator (Op)		The remaining elements of the tense form	Empty when the verb is intransitive	Empty when the verb intensive or mono-transitive	Position where the peripheral elements appear. Till now we have mentioned the case of adverbs

Figure 3.11: Generating pattern of the English tectonie

We note that we have suggested to treat the subject, the positions of tense and concord and the first auxiliary which comes just after the inflectional positions, as a special unit that can be independent in speech and that has some characteristics such as inversion and code, while the remaining part of the tense form never precedes neither the subject nor the first auxiliary acting as an operator. This is why, the position of the subject, those of tense and concord and that of the first auxiliary constitute a single *entity* that we call the governing elements (*R*). The remaining other positions will be gathered under the label of first governed element (T_1). Of course, as we have already explained, at the level of the *tectonie*, we handle in the positions of subject and object linguistic units which are not exclusively personal pronouns as it is the case at the *lexical* level.

[10] The *pivot* of the *tectonie* is a unit upon which the second governed term is structurally integrated. For Hadj-Salah, the presence of a governing element, either expressed or not, implies necessarily the presence of at least one governed element with which it forms a single entity.

Another important observation concerns the modal auxiliaries: in fact, these are proposed to be introduced exclusively at the *supra-lexical* level, though when the subject and object are personal pronouns, the tense forms in which they appear function in a way which is comparable to the functioning of the tense forms containing the auxiliaries *Have* and *Be* and *Do* at the *lexical* level since they can be considered with the subject a single unit (cf. footnote 3: p. 101). But, as we have seen in Figure 3.7 (p. 108) and Figure 3.8 (p. 109) and Figure 3.9 (p. 110), the linguistic units of level one are integrated in a different way in level two and in level three. Thus, we have chosen to present the patterns containing the modal auxiliaries only at the *supra-lexical* level in the following way:

#	(1)			Will		-	-	Full verb	-		-		-						
				Shall		-	-	Full verb	-		-		-						
				May		-	have	-	Full verb	en	-		-						
				Can	Not/ Ø	-	be	-	-	en	Full verb	ing	-						
				Must		-	have	-	be	en	Full verb	ing	-						
				Dare		-	be	-	-	en	be	ing	Full verb	en					
		Ed		Need		-	have	-	be	en	be	ing	Full verb	en					
		Ø	Cx			-	be	-	-	en	Ø	ing	Full verb	en					
		(5)				-	have	-	be	en	Ø	ing	Full verb	en					
						To	-	Full verb	-		-		-						
				Use		To	-	Full verb	-		-		-						
						To	have	-	Full verb	en	-		-						
				Ought	Not/ Ø	To	be	-	-	en	Full verb	ing	-						
						To	have	-	be	en	Full verb	ing	-						
		Ed				To	be	-	-	en	be	ing	Full verb	en					
		Ø	Cx			To	have	-	be	en	be	ing	Full verb	en					
		(6)				To	be	-	-	en	Ø	ing	Full verb	en					
						To	have	-	be	en	Ø	ing	Full verb	en					
Subject (1)		**Tns (2)**	**Crd (3)**	**Position of the first auxiliary of the tense form**	**Neg.**		***be* or *have* or *Do***	**full verb**	**Be or full verb**	**Morph.**	**Be or full verb**	**Morph.**	**Full verb**	**Morph.**					**Object (4)**
							Base form	**Base form**	**Past participle form**		**Progressive form of full verb or of *'be'***		**Past participle form of full verb**						

Figure 3.12

(1) Here can appear one of the personal pronouns in the subjective case: *I*, *you*, *he*, *she*, *it*, *we*, *you*, and *they* or any linguistic unit that can function as a subject. When it is the first position which appears from left to right, the sentence is affirmative.

(2) We have here two tenses: *Ø* stands for the present tense and *ed* stands for the past tense.

(3) The *x* in *Cx* stands for either: 1, 2 or 3, to give respectively *C1*, C2, and C3.

(4) Here can appear one of the personal pronouns in the objective case: *me*, *you*, *him*, *her*, *it*, *us*, you, and them or any linguistic unit that can function as an object.

(5) *Must*, *Dare* and *Need* are conjugated only in the present.

(6) *Ought* is conjugated only in the present while *Use* is conjugated only in the past.

What is interesting to notice is that this kind of analysis allows us to avoid the perspective proposed by many linguists who analyse '*ought to*' as a discontinuous verb phrase as shown below:

'*Ought we to ask them?*'
VP NP VP

In our analysis, we speak of the linguistic unit *ought* whose order can be inverted with the subject. Thus, *to* is rather seen as a component of *ask* in the following way: *(we) (ought) (to ask) (them)* and not *(we) (ought to) (ask) (them).*

3.3.2. The description of the positions of the pattern

3.3.2.1. The governing elements

The English governing unit is made up of a number of positions: the position of the grammatical subject, that of inflection (tense and concord), and that of the operator. Thus, the modal auxiliaries appear in the position where can appear the auxiliaries *Be*, *Have* and *Do*. We have suggested to label this position *operator*. The unit made up of [subject + inflectional elements + operator] is a unit whose

components are related to each other by a formal relation which requires that none of them can be suppressed otherwise the resulting sequence is ungrammatical[11].

The position of the operator may contain:

- the copular verb *be*;
- a modal auxiliary when the structure of the *tectonie* in question generates statements of the secondary pattern;
- the auxiliary *do* or the zero mark when it is question of the *tectonie* that generates statements of the primary pattern containing active forms of ordinary non-continuous verbal forms;
- the auxiliaries appearing in the first left position of the verbal *lexie* when it is once again question of the *tectonie* that generates statements of the primary pattern containing this time passive forms of ordinary non-continuous verbal forms and continuous and/or perfect verbal forms in both voices.

The arguments that can be advanced in favour of considering the operator and the subject as a single indivisible unit are in part intuitive[12]. But, this division is reinforced by the fact that the adverbs never occur between the subject and the

[11] Even the sequence made up only of these elements like *I do* is in fact meaningless outside any context. When I say: *yes, I do*. I suppose that the context provides elements which clarify and help to identify who is *I* and what *do* refers to. For example, if this utterance is an answer to the question: *Do you work? Yes, I do.* In fact, means: *Yes, I work*. (cf. this chapter, p. 105).

[12] When dividing *I'll be writing* into two, a division between *I* and *'ll* is rarely proposed.

operator, but after this latter.[13]

a. The position of the grammatical subject

It is the position where can appear the elements which help to actualise the action of the verb contained in the *tectonie* in question.[14]

b. The positions of inflection

In these positions, we can find two elements that can cause inflection in the verb forms, namely tense and concord. These elements appear in our pattern in two positions that we have labelled respectively: *tense* (or *Tns*) and *concord* (or *Conc*) and which we have gathered under one position labelled *inflection (or Infl).*[15] The two positions of inflection are always full except in case of structures generating imperatives and embedded structures[16].

---

[13] *I will never be ready* is correct, while **I never will be ready* is incorrect.

[14] This same position can contain any linguistic unit that can function as a subject. This is the case of the nominal *lexies* for example:

Governing elements				Neg.	First governed element	
Subject	Inflection		Operator			
	Tense	Concord				
The star	Ø	C_3	be	not	shining	*The star is not shining*
The green star	Ø	C_3	be	Ø	shining	*The green star is shining*
The green bright star	Ø	C_3	be	Ø	shining	*The green bright star is shining*

[15] In our study, the elements of inflection are presented independently from the element to which they are affixed (for example Ø + C3 + have instead of has). In fact, the way these elements behave can be characterised by a certain independence with regard to the element they can inflict and which can be: either the operator in R or the full verb appearing in T1. In addition, in interrogatives, these positions are inverted with the subject in the same way it is done with the operator.

[16] We will come back to this point of embedded structures mainly when we will deal with the complex phrases (cf. chapter four).

a. Position of Tense: this position contains the element that informs us about the tense morphology of the verb contained in the position of the operator or, in case this latter is empty, the full verb contained in the position of the first governed element. It can contain either: *ed* or *Ø* respectively for past and present tense.

b. Position of concord: this position contains the element of agreement with the subject. As already adopted in our preceding study, we have:

- C_1 when the subject is or can be replaced by a first person singular;
- C_3 when the subject is or can be replaced by the third person singular;
- C_2 for all the other personal pronouns.

We can also put C_x to refer to the three of them.

c. The position of the operator

It is the position in which the operator appears. In fact, when a tense form contains more than one auxiliary, it is the one that appears in the first position that acts as an 'operator'.[17] The operator can be inflected by tense and concord, inverted with the subject and is kept in short answers and emphatic constructions and code. The operator's position is always full except in the structures which generate positive

[17] The 'operator' is defined by Quirk & Greenbaum (1988) as the unit that is permuted with the subject to denote the interrogative and carries the negative particle *no*; the following example is given:
"Should he have been questioned by the police?
No, he shouldn't have been questioned by the police
Yes, he should." (Cf. Ibid.: 12)

affirmative statements containing ordinary non-continuous verbal forms. In this case, it contains Ø.

3.3.2.2. The position of the first governed element

This position contains only verbal elements. This position is always full except when there is the copular verb *be* in the position of the operator. We have mentioned the copular verb *be* as a special case, because in its finite form, even when it behaves as a full verb, it occurs in the position of the operator.[18]

3.3.2.3. Position of the second governed element

This position contains the elements that complete the meaning of the statement generated by the pattern of the *tectonie* through an object or a subject complement or an adverbial complement. It is empty when the verb is intransitive;

[18] This means that the verb *be* acts as an operator whether it is an auxiliary, as in: *John is searching the room ~ Is John searching the room* ? Or not, as in: *The girl is now a student ~ Is the girl now a student?* This is also the case of *Have* in British English: *He has a degree ~ Has he a degree?* (Cf. Quirk & Greenbaum 1988: 12). See the examples below:

Governing elements				T_1	T_2	D (optional)	D (optional)
Subject	inflection		Operator or copular verb *be*				
	Tns	Conc.					
The girl	Ø	C_3	be	-	a student	at a large university	now

The girl is a student at a large university now (Ibid.).

Governing elements				T_1	T_2
Subject	Inflection		Operator or Copular verb *be*		
	Tns	Conc.			
Mary	Ø	C_3	be	-	in the house

Mary is in the house (Ibid.).

Governing elements				T_1	T_2
Subject	inflection		Operator or copular verb *be*		
	Tns	Conc.			
Mary	Ø	C_3	Be	-	kind

Mary is kind (Ibid.)

it contains an object when the verb is transitive and a subject complement or an adverbial complement when the verb is intensive.[19]

3.3.2.3. Position of the elements which appear outside the structure (al-binya البنية)

a. Position of the third governed terms

The third governed term is a linguistic unit which is inflected by the effect of the governing term(s), but which appears outside the *binya* since it is not structurally integrated upon (R,T1) like the second governed term.

This position contains an object when the verb is di-transitive and it is empty when the verbal *lexie* of the *tectonie* contains a verb that is intensive, intransitive, or mono-transitive. We note here that the object complement and the adverbial complement will be treated in a specific way and not described as third governed terms.

b. Position of the peripheral linguistic units

This is an additional position that contains optional elements that can be added or omitted without thereby altering the structure of our linguistic units. This is the case for example of the adverbs[20].

[19] Two cases are not mentioned here, namely the SVOC (Subject-Verb-Object-Complement) and the SVOA (Subject-Verb-Object-Adverb) clause types. According to Quirk & all (1988: 12), the sentence elements are: the subject (S), the verb (V), the complement (C), the object (O), the adverbial (A). This is a sample sentence which is made up of all these elements: They (S) make (V) him (O) the chairman (C) every year (A). (Cf. Ibid.)

[20] An adverb is "*a word which modifies a verb, an adjective or another adverb.*"(Kerstens & al. 1996)

The adverbs can be optional or obligatory. When the adverbs are optional, we have chosen to label the position that contains them *D*, as Hadj-Salah did for the peripheral units in the Arabic *tectonie*, to mean that they are peripheral with regard to the main structure composed of the governor and the governed elements. The adverbs can also be obligatory in that sense that they cannot be suppressed in SVA and SVOA clause types[21].

What is also interesting to notice is the way the same adverb can be sometimes optional and sometimes obligatory, and thus, cannot interfere with the zero mark. In the following example, *in the bathroom* is optional in the first pattern but obligatory in the second one. This is, of course, due to the type of the verb in each structure:

Governing elements			T_1	T_2	
Subject	inflection	operator			
The crime	ed + C_3	Ø	happen	in the bathroom	The crime happened in the bathroom

Figure 3.13

The statement above can also be interpreted in a different way. It can be obligatory and not optional as follows:

Governing elements			T_1	T_2	D	
subject	inflection	operator				
The dog	ed + C_3	Ø	Bit	the man	in the bathroom	The dog bit the man in the bathroom

Figure 3.14

[21] i.e., Subject-Verb-Adverbial and Subject-Verb-Object-Adverbial

This statement can also be interpreted in a way where '*in the bathroom*' appears as part of the lexie '*the man in the bathroom*'; thus, it is interpreted as an expansion of the lexie '*the man*'.

Governing elements			T_1	T_2	
Subject	Inflection	operator			
The dog	ed + C_3	Ø	bit	the man in the bathroom	The dog bit the man in the bathroom
The dog	ed + C_3	Ø	bit	the man	The dog bit the man

Figure 3.15

c. The position of negation: the negative particle 'Not'

In the structure of the English *tectonies*, there is a position for negation that comes just after the governing elements. This position can contain '*not*' or '*Ø*' or '-'. It contains '*not*' or '*Ø*' when the position of the operator is full. When there is no operator, the position of negation is necessarily empty and the symbol ('-') appears in this position.

Governing elements				Negation	T_1	
Subject	Inflection		Operator		Verb (extensive/ intransitive)	
	Tense	Concord				
John	Ø	C_3	be	not	playing	[22]
John	Ø	C_3	be	Ø	playing	[23]
John	Ø	C_3	Ø	_	play	[24]

Figure 3.16

3.3.3. Characterization of the different relations in the pattern of the tectonie

Let us examine the types of relations the constituents of the *tectonie* can hold between themselves. At this level, these relations can be represented as follows:

[22] John is not playing.

[23] John is playing.

[24] John plays.

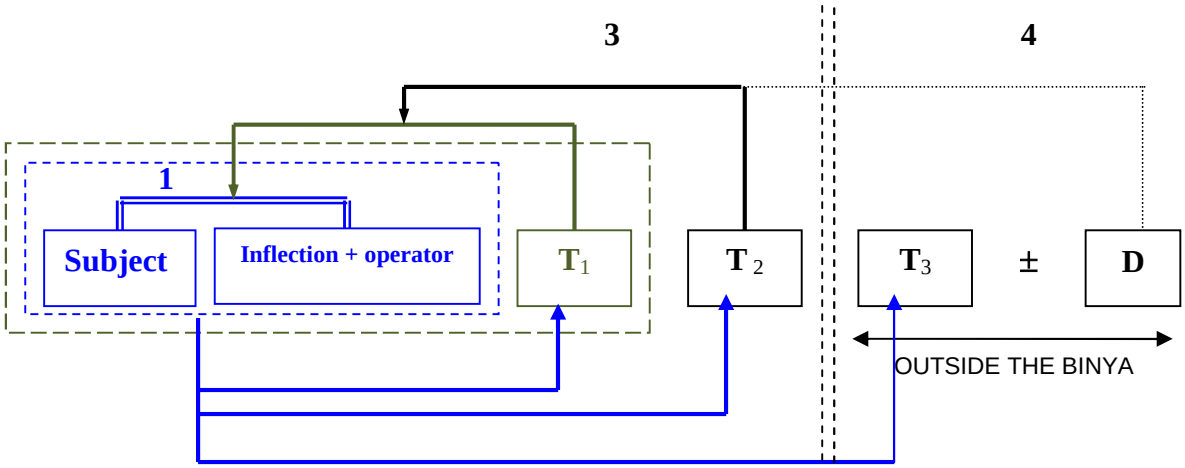


Figure 3.17

There are four types of relations in the structure of the *tectonie*:

- **The binā' (البناء)**: or structural integration of the second governed term over the couple of terms made up of the governor and the first governed term. This is the result of the dependence of T_2 (*ḥamluhu 'alā* حمله على) to ($R \rightarrow T_1$):

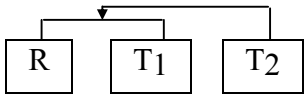


Figure 3.18

The *binā'* is not a simple concatenation that has no effect on the resulting unit because the suppression of any of the two constituents destroys the unit.

- **The 'amal (العمل)**: or government[25] which is the effect of the governor over the governed terms:

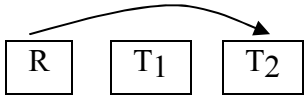


Figure 3.19

[25] As already mentioned, "In Arabic theories on declension the case endings of the words are regarded as the effect of another word, called *'āmil* "governor", whose operative force is called *'amal* "governance"; lexically the verb *'amila (fī)* means "to act upon, to affect", and an *'āmil* is the governor of a province." (Versteegh 1997a: 6)

In Arabic, this is shown for example by the case ending. Government is the relation of subordination of a governed element to its governor. As a result of this relation, the order of the governors and the governed terms becomes fixed: the governed elements never precede their governors from the formal point of view because in discourse some distortions may occur.

- **The *waṣl* (الوصل):** or the concatenation is the relation which links the elements of the unit made up of the governor and the governed terms to additional units called by Hadj-Salah (1979) peripheral units (D). These units are additional; they can appear or disappear without destroying the construction (R, Ti). This relation is represented by Hadj-Salah (Ibid.) by the symbol (±) in the following way:

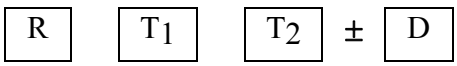


Figure 3.20

It is a simple juxtaposition of units without effect on the segments that it relates. This kind of relationship is opposed to the *binā'* (بناء i.e., structural integration) by which an element is structurally integrated upon another one (or other ones).

- **Formal relation:** it is the relation which exists between the constituents of the governing unit. What links the subject, inflection and the operator is not a relation of government but a formal relation

that makes it possible to invert the order: (subject + inflection + operator) to (inflection + operator + subject) in case of interrogatives.

3.4. Major implications of the proposed analysis

Let us now see if our structure is particular with regard to the descriptions that are proposed in English grammar books.

3.4.1. A dynamic generating linguistic pattern of English tense forms

We start by one of the major results of this study and which consists, as we have seen above, in the fact that it came up with a pattern that describes and generates all the English tenses of the primary pattern in a formal way (cf. Figure 3.10, p. 111). We notice that this pattern can generate all the sixteen tenses for each full verb[26]. Let us, for example, examine how Frank Palmer (1968) represents these sixteen forms taking the verb *Take* as an example:

[26] Though not all the full verbs accept the sixteen forms: the static verbs, for example, do not accept the *-ing* form.

(a.1)	takes				
(a.2)	took				
(a.3)	Is		taking		
(a.4)	was		taking		
(a.5)	has	taken			
(a.6)	had	taken			
(a.7)	has	been	taking		
(a.8)	had	been	taking		
(a.9)	Is			taken	
(a.10)	was			taken	
(a.11)	Is		being	taken	
(a.12)	was		being	taken	
(a.13)	has	been		taken	
(a.14)	had	been		taken	
(a.15)	has	been	being	taken	(?)
(a.16)	had	been	being	taken	(?)

Figure 3.21: Paradigm of the verb Take according to F. Palmer (1968: 56)

If we try to represent the resulting tense forms for the full verb *Take* using the positions of the pattern proposed in Fig. 3.10 (p. 111), this would give the following paradigm[27] in order to determine the similarities and differences between the two paradigms:

[27] We note here that we have tried to follow as much as possible the same structure proposed by Palmer (1968), thus we have put aside the position of the subject, that of negation, and even those of tense and concord.

(b.1)	Ø	takes #[28]				
(b.2)	Ø	took #				
(b.3)	Is	-	-	taking #		
(b.4)	Was	-	-	taking #		
(b.5)	Has	-	taken #			
(b.6)	Had	-	taken #			
(b.7)	Has	-	been	taking #		
(b.8)	Had	-	been	taking #		
(b.9)	Is	-	-	Ø	taken #	
(b.10)	Was	-	-	Ø	taken #	
(b.11)	Is	-	-	being	taken #	
(b.12)	Was	-	-	being	taken #	
(b.13)	Has	-	been	Ø	taken #	
(b.14)	Had	-	been	Ø	taken #	
(b.15)	Has	-	been	being	taken #	(?)
(b.16)	Had	-	been	being	taken #	(?)

Figure 3.22: Paradigm of the verb Take according to our study

If we compare the two paradigms (i.e., Figure 3.21 and Figure 3.22), we notice that the verb form *taken* of *has taken* and of *is taken* does not appear in the same column in the two paradigms, which allows us to distinguish in a formal way the *-en* form denoting the perfect aspect in the first form (*has taken*) and the passive form in the second one (*is taken*). The main difference between the two paradigms consists in the fact that, in our paradigm, the verb forms *takes* and *took* in Figure 3.22 do not appear in the same column as the auxiliaries *be* and *have* as proposed by F. Palmer (cf. Figure 3.21 above). The position of the full verb is specific to it, and the position of the auxiliaries *be* and *have* is also specific to them. This is important because it allows us to define formally the full verb as being the only linguistic unit

[28] The symbol '#' is used to show the right boundary of the sequence.

that can appear in the sixth or the ninth position and which never appears in the fourth position (cf. the description of the content of the positions of the generating pattern the English verbal lexie of the primary pattern, pp. 112-113). On the other hand, the auxiliaries never appear in the sixth position or ninth position and can appear in the fourth position. Only *be* can appear in the seventh or eighth position.

We can find in both paradigms empty spaces, but the main difference is that in our paradigm we make use of two symbols when a position is empty; i.e., the symbol '-' when the position is necessarily empty[29]. This is the case, for example, of *b.11* in which the seventh position cannot be filled because the form: ***is been being taken* is not allowed by the English grammatical system. Whereas the symbol

[29] The concept of *empty space* exists in modern linguistics. We can give the example of Chomsky's works in which we find it under the concept of *empty category* (Chomsky 1981). Chomsky distinguishes two empty categories: *Trace (t)* and *Pro*. These are presented as two distinct categories. The properties of *Trace* are:

" (i) trace is governed*

(ii) the antecedent* of trace is not in a θ position

(iii) the antecedent-trace relation satisfies the subjacency* condition.

Pro lacks all of these properties: it is ungoverned; its antecedent (if there is one) has an independent θ role, as does *Pro*; the antecedent-Pro relation (where Pro has an antecedent) need not satisfy the subjacency condition. Furthermore, *Pro* need have no antecedent" (Chomsky 1981, reed 1993: 56).

Examples (cf. Ibid.: 58):

- It is possible [[*Pro* to win]]

It is possible [for [John to win]]

- It is certain [that John likes ice cream]

John is certain [*t* to like ice cream]

In addition, "in the case of *Pro*, we have to consider three conditions: those under which *Pro* may appear (the gap is permitted), under which it must appear (the gap is obligatory), and under which it may not appear (the gap is impermissible)." (Ibid.: 64).

Ø is used each time a position could be filled but it is actually empty. This is the case, for example, of the *b.14* in which the position containing the *-en* form of the auxiliary *be* is empty, but if it is filled, it will become equivalent to *b.16*.

3.4.2. Syntactic differences between the auxiliaries

We know that the auxiliaries differ from each other according to the number of their inflicted forms with regard to tense[30] and concord[31] with the subject. To classify the auxiliaries, we are going to take into consideration which verb forms can appear with each auxiliary. This classification is based on the study presented by Palmer (1968).

- ***Do, will, shall, may, dare, need, can, must, ought, used*:** these are followed by the stem form of the verb.
- ***Be*** is followed by the progressive form (verb + *ing*), the passive voice (verb + *en*), but never by a perfect form (verb + *en*). The distinction between the two

[30] We have three categories of auxiliaries according to this property:

- ***Be, Have, Do, Will, Shall, Can, May*:** these have both past and present tense forms.
- ***Must, ought, dare, need*:** these have only present tense forms: though *ought* is used both with present *and* past meaning
- ***Use*:** is the only modal auxiliary that has only a past tense form.

[31] We have three categories of auxiliaries according to the way they agree with the subject:

- The auxiliaries whose forms do not show agreement with the subject: *Will*, *shall*, *can*, *may*, *must*, *ought to*, *dare*, *need*, *used to*. We find in the position of the concord the symbol: '-'
- The auxiliaries: *do* and *have* have two forms for the present tense according to the personal pronoun that appears in the position of the subject and one form for the past tense.
- The auxiliary *be* is a special auxiliary because it concords with the subject even in the past simple tense. Besides, it has three forms for the present tense.

forms is possible only according to their occurrence in the different positions of the pattern we have so far proposed.

- ***Have*** is necessarily followed by a perfect form of a given verb (*verb* + *en*).[32]

As we have already noticed, the order of the positions in the structures presented throughout this study is strict. The auxiliaries always occur in this order: progressive, perfect and passive.[33] This matches with the rules enunciated in all grammar books. We can mention, for example this passage from University Grammar of English (Quirk & Greenbaum 1988: 39):

> The modal, perfect, progressive and passive auxiliaries follow a strict order in the complex verb phrase:
> [I] Modal, always followed by an infinitive, as in
> He would visit
> [II] Perfect, always followed by an -ed form, as in
> He had visited
> He would have visited
> [III] Progressive, always followed by an -ing form, as in
> He was visiting
> He would have been visiting
> [IV] Passive, always followed by an -ed form, as in
> He was visited
> He would have been being visited

But we have to be careful, because it is not a mere question of order of classes. The fact that "*Be* is followed by the *-ing* form and by the past participle and that *have* is followed by the past participle only" (Palmer 1968: p. 57) is "insufficient, since this will not rule out the following, which are not attested: ***is***

[32] A table in which we summarise all that has been said in this section is proposed in appendix two.

[33] We have already noticed that the "*three types of auxiliary verb (modals, perfective 'have', progressive 'be') are not mutually exclusive, and sentences may occur with all three: Sue should have been dancing yesterday*" (Goodluck 1991: 114)

*being taking, *is being been taken,*was has taken, *was having taken, *is being had having taken*" (Ibid.).

As far as our patterns are concerned, the rules of co-occurrence that we have described for the elements deriving from the different positions of the proposed pattern ensures that such ungrammatical tense forms will never be generated:

- * *is being taking* will never be generated by our structure because there is only one *-ing* position which is followed by an *-en* position. Consequently, the only possible tense form is '*is being taken'* or '*was being taken'*.
- * *is being been taken* will not be generated also, because in our pattern there is only one *-en* position after the *-ing* position and not two in order to generate tense forms such as *is being taken.*
- * *was has taken* is impossible according to our structure, because the position of the operator cannot be doubled and the auxiliary *Be* can only be followed by one of the following forms: *being*, *taking*, or *taken*.
- * *was having taken*: here the auxiliary *have* cannot appear in the eighth position of our pattern.
- The last example, i.e., **is being had having taken*, cannot be generated by our pattern, because it goes beyond the number of the possible positions and even the rules of co-occurrence are not respected.

3.4.3. The zero element

According to us, the positions of our pattern can be optionally empty or

obligatorily empty as they can be obligatorily full. In case they are optionally empty, we find in the concerned position the symbol *Ø*. This zero element is as important as the other elements contained in this structure for it denotes a meaning. It is what *Sībawayh* calls *tark al-'alāma* (ترك العلامة) (cf. chapter one: footnote 30, p. 26). In our pattern, it denotes different meanings according to the position in which it appears:

- When it appears in the second position, *'Ø'* means that the tense of the verb form is present.
- When it appears in the fourth position, the full verb appears necessarily in the sixth position; thus, the generated tense form is necessarily ordinary. In the other cases, i.e., when it is perfect, this position is necessarily full, i.e., it contains the auxiliary *have*; while when it is ordinary, this position either contains the auxiliary *be* or it is necessarily empty when the full verb appears in the sixth position.
- When it appears in the fifth position, *'Ø'* means that the sentence containing this tense is positive.
- When it appears in the eighth position, *'Ø'* means that the tense is non progressive.

The zero element cannot appear in five positions of the pattern; namely, the first, the third, the sixth, the seventh and the ninth position:

- It does not appear in the first position: that of the subject. Even in the passive voice, this position contains the grammatical subject and not the logical one.

- It does not appear in the third position: that of concord, since logically the presence of a subject implies a concord with it.
- It does not appear in the sixth position, because the full verb is the kernel[34]; its disappearance means the disappearance of the verb form. The non appearance of the full verb in the sixth position in most tenses does not mean that the verb form does not contain a full verb; this latter can also appear in the seventh, eighth or ninth position and in this case, the sixth position contains '-' and not Ø. Besides, since each tense form described till now can contain only one full verb, its presence in a given position excludes its presence in the other positions and this is denoted by the element '-'.
- It does not appear also in the seventh position, because the tense form can be either perfect or ordinary. When it is perfect, this position is necessarily full, i.e., it contains either the full verb or the auxiliary *be*; while when it is ordinary, this position is necessarily empty. In this latter case, if we put Ø in this position, we keep the possibility of the appearance of *be* here even if it is ordinary (otherwise the structure would produce sequences like: **it is been done*).
- It does not appear in the ninth position, because when the tense form is in the active voice it is this symbol '-' that appears in this position. As we have already mentioned, once the full verb appears in a given position, the positions coming after it are necessarily empty meaning that it can contain '-' and not Ø.

[34] Or part of it with *Have* in case of the perfect tenses.

3.4.4. Full verbs Vs auxiliaries

As the reader might have noticed, our study takes into account the importance of the auxiliary system in English grammar since, as underlined by Chomsky, *"the study of these "auxiliary verbs" turns out to be quite crucial in the development of English grammar.*" (1957: 38). Let us see in detail how our structure allows us to distinguish the auxiliaries from the full verbs. However, we have to mention that there are some linguists who advocate in their works not to make such a distinction[35].

In most linguistic theories, the full verb is considered as the head compared to the auxiliaries that accompany it. Kerstens &al. (1996) define the auxiliary as being the :

> *verb which 'helps' the main verb in expressing certain moods, aspects, tenses or voices; all the verbs beside the main verb are auxiliary verbs. Example: was is the passive auxiliary in Greg was defeated, has is the perfect auxiliary in Miguel has defeated Greg, and should, have and been are the modal, perfect and passive auxiliaries respectively in Erik should have been present.*

[35] We have to clarify that "the issue in dispute" (Huddelson 1980: 105) is not the exact similarity between the auxiliaries and the main verbs since there is "undoubted grammatical differences between on the one hand progressive *Be*, perfect *Have*, modal *May*, *Can*, *Will*, etc., and on the other hand verbs such as *Keep*, *Continue*, *Want*, *Seem*, etc." (Ibid.). In fact, "Palmer distinguishes between auxiliaries and main verbs in terms of constituent sentence, more particularly in terms of their occupancy of different positions within the 'simple verb phrase'" (Ibid.: 101). "The contrary view is that the so-called auxiliaries do not occupy a different structural position from other verbs – that all verbs are main verbs" (Ibid.: 102).

For Huddleston (1969, 1974, 1976) and Ross (1969), "*the auxiliaries should be treated as main verbs"*, while Palmer argues for the distinction that has to be made between the auxiliaries and the main verbs. He does "*not deny that auxiliaries are verbs, but claims that they are verbs of a rather different kind from main verb"* (1979: 1) and for him the arguments given by Ross are arguable because ten of them show us that auxiliaries are verbs only and not main verbs, and the two others are either taken from German or based on universal considerations (cf. Palmer 1970).

For Huddleston, Palmer has failed to propose satisfactory formal criteria, and could only say that *"there is no clear classificatory dividing line between main verbs and auxiliaries"* (Ibid.: 4) and that it is rather *"perfectly reasonable to suggest that some verbs are clearly main verbs, but that there are also intermediate or borderline cases."* (Ibid). He also underlines the validity of distinguishing the auxiliaries and the 'main' verbs though it is full of "*considerable indeterminacy"* (Ibid.: 5). Palmer adds that:

> It is very useful, therefore, to have tests of a formal, even somewhat 'unmotivated', kind that will allow us to make a clear judgment in most cases of dispute. This seems a perfectly natural and rational approach to a problem of this kind, whether in linguistics or any other discipline. (Ibid.).

Our analysis has concluded that it is possible to distinguish on a formal basis the auxiliaries from the full verbs, because it is the position in which a verb can occur that confers it the characteristics of a full verb or an auxiliary. Theoretically, any verb can be an auxiliary if it can occur in the specific position which characterises the English auxiliaries; that is to say, the *fourth* position. And any verb can be a full verb (even *Be*, *Have* and *Do*) if it can occur in the *sixth* position. Note

here that *Have* and *Do* can also occur as full verbs in the *seventh*, *eighth*, or *ninth* positions but not *Be*, because this latter is the only auxiliary that can occur in these positions and this allows English grammar, in a perfect way, to avoid the ambiguity deriving from the use of the same linguistic unit in the same position to denote two different meanings.

The method of differentiation presented here has already been used by the Arab grammarians and is called by Hadj-Salah (1979) the differentiation by the position. Using this type of *differenciation*, we can point out the following notes concerning the distinction between the full verbs and the auxiliaries:

1. In each tense form there is only one full verb while there can be up to three forms of auxiliaries: *been*, *being*, and a past or present tense form of *have* or *be*.
2. The full verb can appear without the auxiliaries, while the opposite is not true, except for the short answers.
3. The auxiliaries can be suppressed with a return to the source structure[36], while the full verb can only be shifted from a position to another one and not be suppressed[37].
4. The full verb can shift from one position to another one, while the auxiliaries have no other alternative than to appear or disappear within their specific position in the pattern.

[36] The structure from which departs the operation of transformation.

[37] *Verbless* sentences are ungrammatical excluding examples of the type: *the sooner the better*, *the more the merrier*, *the more of these, the merrier the linguist* (Cf. Cook 1989: 51-52).

5. There are two positions in which only the full verbs can appear: the sixth and the ninth position.

6. There is a special position in which only the auxiliaries can appear: it is the fourth position.

7. The *differentiation* between *have* and *be* is possible thanks to the seventh position, which is necessarily empty when *be* appears in the fourth position, and is necessarily full when it is the auxiliary *have* that appears in it.

8. Only the auxiliary *be* can appear in the seventh and the eight positions. The auxiliary *have* can only appear in the fourth position.

In addition to this, we can even propose a formal distinction between *do, have* and *be*:

1. *Do*: is introduced just as a support when the nature of the sentence requires it. During the construction of the interrogatives of sentences containing no kind of auxiliaries, for example, the inversion of the morphological positions with the subject prevents the former from inflicting the full verb. Thus, the auxiliary *do* is introduced to 'carry' this morphology. The same thing happens when a positive sentence is negated with *not*. When the auxiliary *be* or *have* already exist in the source structure (i.e., the structure of the sentence that we want to negate or to turn to an interrogative) the addition of the auxiliary '*Do'* is not necessary.

2. *Have*: This auxiliary is not only used to carry the morphology of concord and tense, but also to 'denote' the perfect aspect of the tense. Compared to the auxiliary '*do'*, we can say that *have* is not a 'dummy'[38] auxiliary for it has a denotation.

3. *Be*: This auxiliary denotes more than any of the two other auxiliaries; it is used in conjunction with the auxiliary *have* to denote the perfect aspect in (*I have been writing*); it is used with the -i*ng* form of the verb to denote the progressive aspect (*He is writing*); it is used with the *–en* form of the verb to indicate the passive voice (*It is written*). Note that it replaces *Do* in the passive voice (*I don't write. It is not written*). And this confirms that the auxiliary '*Do*' is a *dummy* verb: once we have introduced the auxiliary '*Be*' to denote the passive voice, the auxiliary '*Do*' is no more needed from the formal point of view.

To define the auxiliaries, linguists sometimes speak of the 'nice properties', namely: negation, inversion, 'code'[39], emphasis[40] (Huddleston 1980: 105). The

[38] This term is "*used in linguistics to refer to a formal grammatical element introduced into a structure or an analysis to ensure that a grammatical sentence is produced. Apart from their formal role, dummy elements have no meaning –they are semantically empty*" (Crystal 2008: 158). We note that it is reported that the auxiliary *Have* can also be used as a modal to express compulsion, obligation, or necessity (*We have to go now, said he'd do it if he had to)* and conviction or certainty (*There just has to be a solution to the problem*.) (examples taken from Microsoft Encarta 2009).

[39] The term 'code' is used by J. R. Firth to mean, as H. E. Palmer names it, 'avoidance of repetition' (cf. Palmer 1968). This is shown for example in short answers like:

Do you work? Yes, ***I do***

Is he playing? Yes, ***he is***

and elliptical sentences like:

The boss has bought a new hat, and his brother has, too. (e.g. 73 in Baker (1978: 87)).

negation is a defining characteristic of the auxiliaries since the full verbs cannot be negated without the use of an auxiliary. Of course, we speak here of the negation with the negative particle *not*, because we can negate an action with the adverbs[41] called semi-negatives like *never* in *You never eat at 12*. This is why we cannot put a position for the negation after the full verb so that our structure will not generate sequences such as: **I take not*. This aspect is taken into consideration in the proposed pattern, since when the tense form is negated we find in the position of negation *not*; when it is positive we find Ø, or '-' if it cannot be negated.

Inversion is another specific characteristic of the auxiliaries. As a matter of fact, the full verb never precedes its subject[42], only the auxiliaries can be inverted with the subject in some grammatical cases (interrogatives, for instance). That is to say, for example, *You have been working* becomes *have you been working?* This means that the full verb does not appear in the position where the auxiliaries appear

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This seems to confirm our hypothesis that the auxiliary and its subject form an independent unit that can be separated from the rest of the tense form, including the full verb that comes just after them.

[40] This property is based on emphasis and intonation, which are not formally definable. Emphasis is the property that has an auxiliary which can be used in an emphatic affirmation of a doubtful sentence or as the denial of the negative: *I 'can come. You 'must go*. It can be the result of a formal characteristic but for the moment, we can hardly account for it with accuracy.

[41] The adverb is "*a term used in grammatical classification of words to refer to a heterogeneous group of items whose most frequent function is to specify the mode of action of the verb*." (Crystal 2008: 14).

[42] We exclude here the special cases where this is possible as in "*In the town where I was born <u>lived a man</u> who sailed to sea*" (example given by Cook (1989: 52)).

as operators because inversion is not one of its characteristics[43]. As we have already mentioned, when the tense form does not contain an auxiliary (for example in: *we work*) we are compelled to introduce the auxiliary *do* as a support to the morphology of the verb that is inverted with the subject. Thus, in fact it is not a "subject-verb inversion", but a "subject-auxiliary inversion"[44]. Even in this case, it is only the first auxiliary of the verbal group which is inverted with the subject.[45]

In our analysis, this fact is taken into consideration in a formal way since only the elements contained in a given specific position has this characteristic of inversion (i.e., the fourth position (cf. Figure 3.10 , p. 111)). To clarify more this aspect, let us take the following explicit examples:

I am trying	*(e.g.4. 1)*	*- Am I trying?*	*(e.g. 4. 2)*
I have been trying	*(e.g. 4. 3)*	*- Have I been trying?*	*(e.g. 4. 4)*
I tried	*(e.g. 4. 5)*	*- Did I try?*	*(e.g. 4. 6)*
I will be trying	*(e.g. 4. 7)*	*- Will I be trying?*	*(e.g. 4. 8)*
I will have been trying	*(e.g. 4. 9)*	*- Will I have been trying?*	*(e.g. 4. 10)*

[43] This is taken into consideration in our work since we advocate that the relation that exists between the subject and the auxiliary is different when this latter appears in the position of the operator: this is why the auxiliary can appear before the subject.

[44] The impossibility of movement of the full verb to appear before the subject is taken into consideration in Chomsky's Universal Grammar by the Movement theory which "*explores the restrictions that human languages actually place on movement. It is a property of UG that only certain elements may be moved, that they may only be moved to certain locations, and that they may not move more than a certain distance*." (Cook 1989: 121)

[45] We have used the term 'operator' following some grammar books such as Quirk & Greenbaum (1988).

In *(e.g. 4. 2)* and (e.g. 4. 4), it is respectively *be* and *have* that are inverted with the subject; in (e.g. 4. 8*)* or (e.g. 4. 10*)*, on the other hand, from all the elements of the tense form, it is only *will* which is inverted with the subject. If it were the auxiliary *have* or *be* themselves that had this characteristic of inversion, the appearance of *will* would have not changed anything; that is to say, even in (e.g. 4. 7) and (e.g. 4. 9*)* they would have been moved to appear linearly before the subject. This does not happen because, in fact, it is not the auxiliaries that have this characteristic but rather the position in which they can appear. In (e.g. 4. *6)*, there is no auxiliary, this is why the auxiliary *do* is introduced.

Besides, in our study we have proposed that it is the entire position of the auxiliary which is inverted with the subject and not only the elements contained in it. If it were the element contained in the position that is moved to another position, the former position would have remained empty with a zero element as proposed in some transformational grammars:

	First	Second	Third
Original factors	*The old men* 1	*Have* 2	*been watching the stars* 3
New factors	*Have the old men* 2 + 1	----- 0	*been watching the stars* 3

Figure 3.23 (Cf. Baker 1978: 69)

This would mean that there is another position before the subject to which *have* is shifted as represented below:

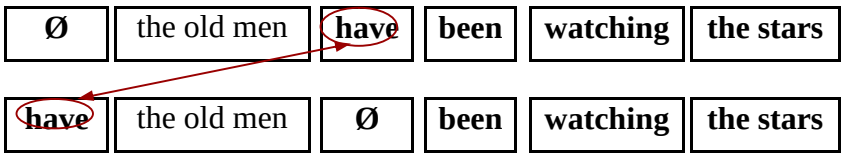

Figure 3.24

However, in our study, what we propose is a true inversion as represented in Figure 3.25 below and not a simple transfer of the content of pre-existent positions as shown in Figure 3.24 above:

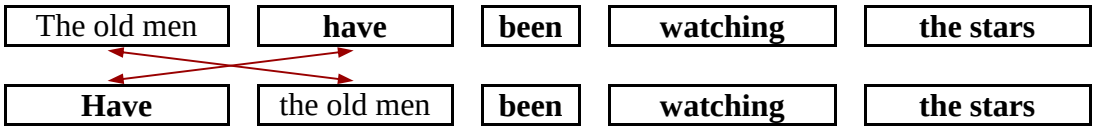

Figure 3.25

To summarize, we can say that the characteristics we have just mentioned are conferred by the position that contains the auxiliaries and not the auxiliaries themselves. This is because there are some verbs that can be sometimes auxiliaries and other times full verbs. This is the case of *do* which behaves as an auxiliary when it appears in the position of the auxiliaries as in: *I do play*; and as a full verb when it appears in the other positions as in: *I am doing it*.

3.4.5. Finite versus non-finite forms

According to Quirk & Greenbaum (1988: 38), finite verb phrases have "*tense distinction: He* | *studies* / *studied* | *English. [they] occur as the verb phrases element of a clause. There is person and number concord between the subject and the finite verb*". According to Frank Palmer (1968: 12), the finite forms "*are those that occur as the only tense forms in independent clauses*", while the non-finite forms "*occur only with finite forms in independent clauses, though some of them may occur alone in dependent clauses*" (Ibid.).

Palmer explains that we cannot merely put stickers on each of the five forms of the "lexeme *Take*" (i.e., *take, takes, took, taking, taken*), because *take* is finite in *I*

take coffee; *He takes coffee*; but non-finite in "*keeps wanting to take*"[46]. This reinforces the choice to base our analysis on positions rather than the linguistic units themselves. So, each linguistic unit that can occur in a given position acquires the characteristics conferred by this position.

On this basis and through the proposed pattern, the distinction between the finite and the non-finite forms of the full verbs can be formalised in the following way:

1. If the full verb appears in the sixth position, then it is a finite form.
2. If it appears in the other positions, then it is a non-finite form. It can, then, have an *-en* form if it appears in the seventh and ninth position, and an *-ing* form if it appears in the eight position.
3. The form of the auxiliary appearing in the fourth position of the verbal *lexie* is always finite.

Conclusion

In this chapter, we suggested a formal definition of the lexical and supra-lexical levels in English as well as the linguistic units appearing in them. This analysis resulting from the study of the English simple verb phrase will serve as a basis for the study of the complex verb phrase in chapter four.

[46] This kind of constructions are called catenatives and will be the object of our study in chapter four.

Chapter 4

- **STUDY OF THE COMPLEX VERB PHRASE**

Introduction

In this chapter, we suggest to continue the linguistic analysis of the English verb according to the principles of the neo-khalilian theory. Till now, we have dealt only with the simple verb phrase (primary and secondary). In this chapter, it is question to deal with the English complex verb phrase.

4.1. Linguistic analysis of the complex verb phrase

F. R. Palmer (1968) defines the complex phrase as "*containing more than one (form of a) full verb*" (p. 150). He gives examples of the 'simplest' form of these complex phrases (i.e., in which appear only two full verbs) like:

I like fishing. (Ibid.) **(e.g. 4.1)**

I want to go to London. (Ibid.)[1] **(e.g. 4.2)**

The kind of full verbs which can co-occur with other full verbs in this way are called catenatives[2]. Theoretically the number of full verbs in one complex phrase is unlimited like in:

I got him to persuade her to ask him to change his mind. (Ibid.) **(e.g. 4.3)**

He kept on asking her to help him get it finished. (Ibid.) **(e.g. 4.4)**

I don't want to have to be forced to begin to try to make more money. (Ibid.) (***e.g.*** **4.5**)

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[1] *Want* and *persuade* are called by Chomsky matrix predicates:

"*(34) M – [$_{s'}$ COMP [$_{s}$ NP INFL VP]]*" (Chomsky 1981: 28). (M is some matrix element).

Want to or *wanna* "*is a lexical verb, perhaps quasi-modal, in which case the S-structure of (6ii) [the students [$_{\alpha}$ wanna [$_{\gamma}$ visit Paris]] would be the same as its surface structure.*" (Ibid.: note 5, p. 138)

[2] Catenative constructions are also known as Control constructions. These latter are constructions with PRO and involving a bare VP. (cf. Crystal 2008: 387)

In this section, we will see if the patterns which have been suggested till now (i.e., after the description of the simple phrase: both of the primary and the secondary pattern) can be used for the description of the complex verb phrase. We start by treating the examples above (i.e., examples 4.1-4.4 (p. 146)) as follows:

R				Neg.	T_1	T_2						
S	Infl.		Op.			R				Neg.	T_1	
	Tns	Crd				S	Infl.		Op.			
I	Ø	C1	Ø	-	like	-	-	-	-	Ø	fishing	

Figure 4.1 (cf. e.g. 4.1, p. 146)

Like is *treated* here as a monotransitive verb, while *fish is treated* as an intransitive verb.

R				Neg.	T_1	T_2								
S	Infl.		Op.			R				Neg.	T_1		D	
	Tns	Crd				S	Infl.		Op.					
I	Ø	C1	Ø	-	want	-	-	-	-	Ø	to	go	to London	

Figure 4.2 (cf. e.g. 4.2, p. 146)[3]

Want is *treated* here as a monotransitive verb, while *go is treated* as an intransitive verb.

R				Neg	T_1	T_2														
S	Infl.		Op.			R				Neg	T_1	T_2								
	Tns	Crd				S	Infl.		Op.			R				T_1	T_2			
												S	Infl.		Op.		R	T_1	T_2	
I	Ed	C1	Ø	-	Get	him	-	-	-	Ø	To persuade	her	-	-	-	To ask	him	To change	His mind	

Figure 4.3 (cf. e.g. 4.3, p. 146)

[3] Proposing that *to go* is in fact an (R,T1) embedded in T2 is somehow in conformity with the latest analysis proposed for this kind of constructions by Chomsky (cf. Government-Binding theory (1981) and Minimalist Program (1995)). Chomsky uses the term PRO which is defined as "*a base-generated subject of certain infinitive (…)*. It can be controlled by some NP within a sentence, or have arbitrary reference: the former possibility is controlled by *John tried PRO to please Mary*, where *PRO* is controlled by *John* ; and the latter by *It is easy PRO to please Mary.*" (Crystal 2008: 387).

Get and *persuade* and *ask* and change are treated as monotransitive verbs.

R				Neg	T_1	T_2																		
S	Infl.		Op.			R				Neg	T_1	T_2												
	Tns	Crd				S	Infl.		Op.			R				T_1	T_2							
												S	Infl.		Op.		R	T_1	T_2					
																			R	T_1	T_2			
He	Ed	C3	Ø	-	keep on	-	-	-	-	Ø	asking	her	-	-	-	To help	him	get	it	-	finished			

Figure 4.4 (cf. e.g. 4.4, p. 146)

Keep on and *ask* and *help* and *get* are treated as monotransitive verbs. The form *finished* occurs here as an embedded T2. We note that '*Keep on*' is a phrasal verb. Concerning the preposition that comes just after the verb, we propose that the passive may be used to decide whether the preposition forms with the verb a prepositional verb or rather a prepositional phrase with the following NP.[4]

Let us examine this example given by Chomsky (1965: 106):

John decided on the boat

This example bears two meanings:

"*he chose the boat*" or "*he made his decision on the boat*" (cf. Ibid: 101).

Chomsky underlines that "*the boat was decided on by John* is unambiguous and means only that *John* chose the boat." (Ibid.: 106).

This kind of constructions are analysed by our pattern in the following way:

(i) (John **R**) (decided on **T1**) (the boat **T2**)

(ii) [(John **R**) (decided **T1**) (on the boat **D**)] ≡ [(on the boat **D**) (John **R**) (decided **T1**)]

[4] We note here that the distinction between 'verb + prepositional phrase (VPP)' and 'verb + particle constructions' (VPC) is presented as an area of learning difficulty in second and foreign language acquisition (SLA & FLA) as in (Rezai 2006), because these two construction "appear superficially similar (…) in contexts like (1):

a. *John ran up the hill.* (VPP) b. *John tore up the letter.* (VPC)" (ibid.: 114).

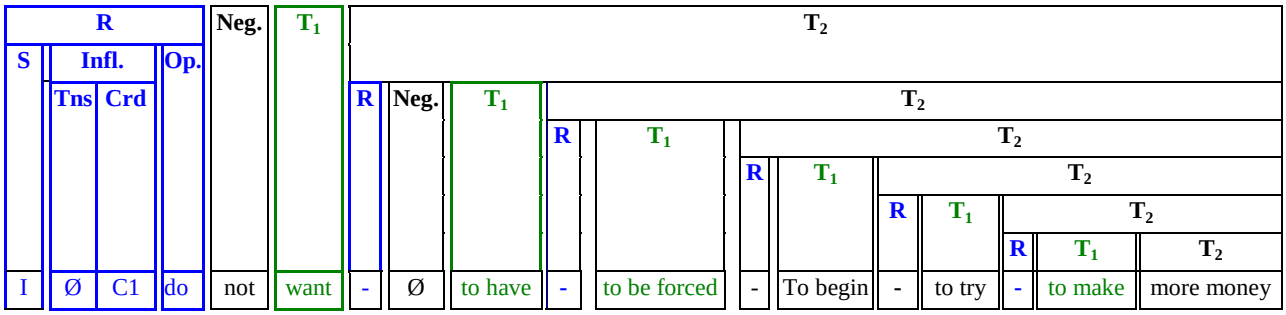


Figure 4.5 (Cf. *e.g.* 4.5, p. 146)

Want, have, force, begin, try and *make* are treated as monotransitive verbs.

A number of remarks derive from the analysis that we have presented here. The first one consists in that the basic structure is (R, T_i) ± D and the position of T_2 allows what is called embedding since it can contain the same basic structure in the following way:

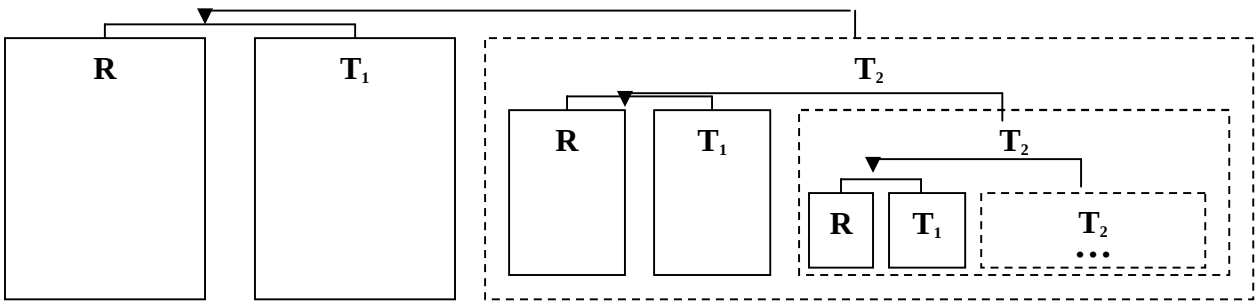


Figure 4.6

To clarify more embedding, the example e.g. 4.3 (p. 146) can be represented as follows:

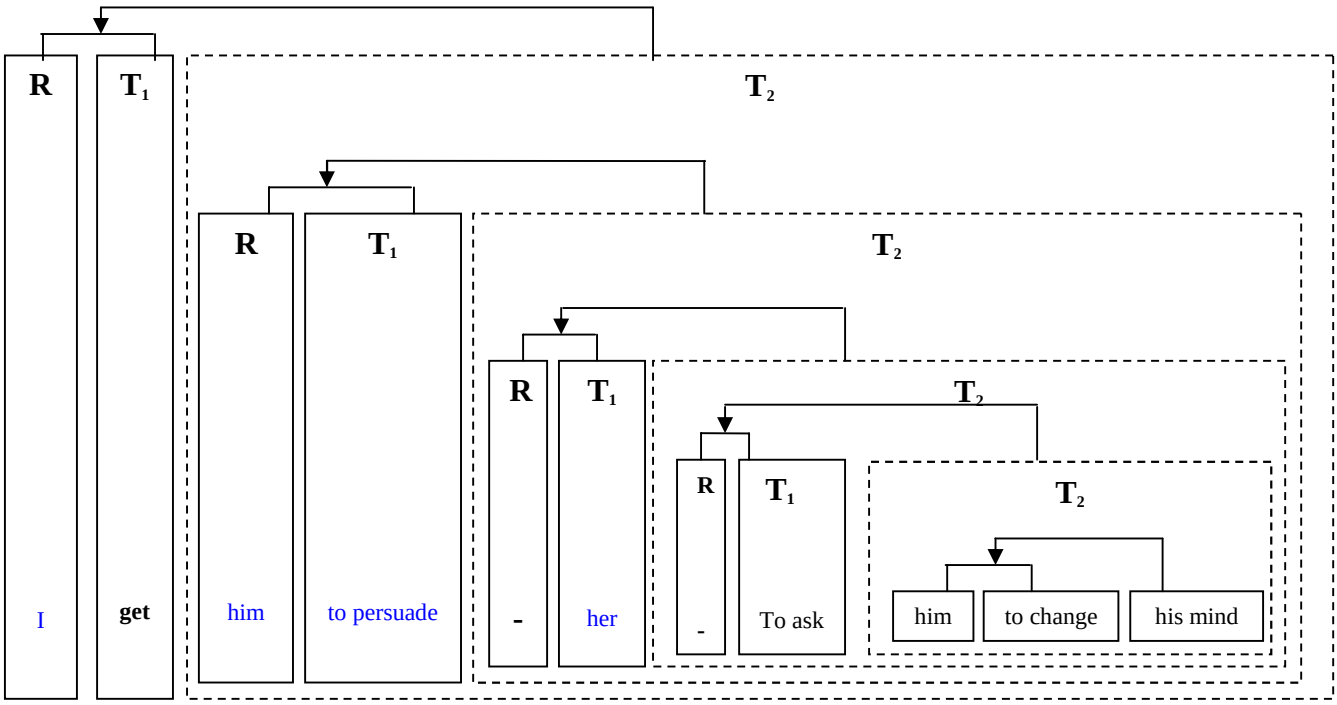


Figure 4.7

We can also suggest the following tree diagram:

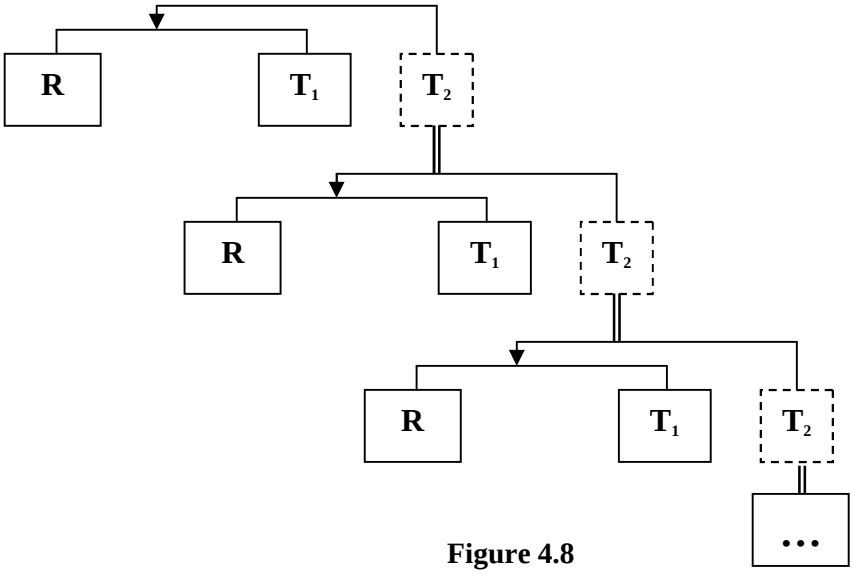


Figure 4.8

The recursion that is enabled by the embedding that can happen in the position of the second governed term (position T_2) allows the extension of the construction (the *tectonie*) to an unlimited way (theoretically of course). In order to differentiate the main structure from the embedded structure, we can use the following symbols:

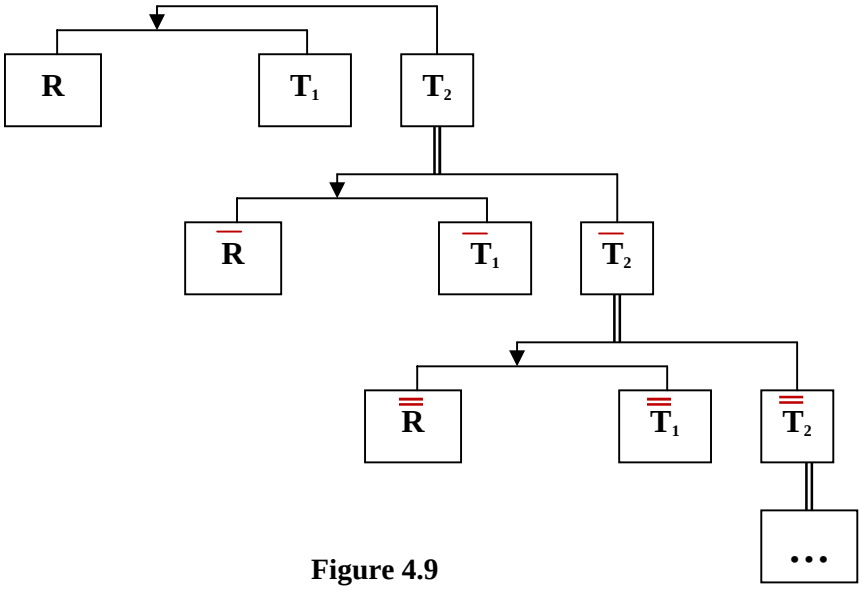


Figure 4.9

The second remark concerns the content of the embedded structures. As we can see in the examples 4.1-5.5, (p. 146), the content of the governed terms is the same both in the basic and the embedded structures. For example, in each structure, we notice that T_1 is always a form of a full verb which can be a base form (like *want* in e.g. 4.5) or *to* + *infinitive* (like *to have* in e.g. 4.5) or a more complex infinitival (like *to be forced* in e.g. 4.5) or an *-ing* form (like *asking* in e.g. 4.4).

The difference appears in the content of R. In the main structure (i.e., the embedding one), the content of the positions of the subject, inflection (tense and concord) and operator is not empty[5]; while the positions of inflection in the embedded structures are always necessarily empty and this is shown in the structures representing the examples above by the symbol '_'. This means that we are still in the same *tectonie* since we have only one effective governor in each construction.

[5] In (e.g. 4.1), for example, the position of the operator is empty but not necessarily. It can be filled like in *I don't like fishing*. While in the embedded structure, the position of the governing term is necessarily empty since we cannot have constructions like **I like can fishing.*

The content of the position of the subject in the embedded structures is also interesting to study. In the main structure, the form of the pronoun is subjective (*I* and *He*), but in the embedded structures, the pronouns are in the objective case (*her* and *him*). We encounter this form of the pronouns in the structures where the second governed term is a pronoun like in: *She gives me expensive presents* (e.g. 4.6) represented as follows.

Governing elements				T_1	T_2	T_3
Subject	inflection		Operator	Verbal lexie whose kernel is extensive/di-transitive	Od	Oi
	Tense	Conc.			Direct object	Indirect object
She	Ø	C_3	Ø	give	me	expensive presents

Figure 4.10 (cf. e.g. 4.6 above)

It is clear that it is because of the effect of the governing term of the main structure that *I* appears in its objective form in the embedded structure. This is also the case of the pronouns appearing in the embedded structures of the example (e.g. 4.3, p. 146) where *he*, *she* and *he* become *him*, *her* and *him*[6]:

[6] We have to mention that in case the object is a pronoun, we can have two possibilities: either a pronominal with no antecedent in the sentence (thus, different from the subject) like: "*McCabe shot him*" (example given by Cook (1989: 44)) or an anaphor whose antecedent is the same person as the subject as in "*McCabe shot himself*". In Government and Binding theory (Chomsky 1981), this relation can be described through the Binding Theory, which "*concerns the reference relationships of Noun Phrases*" (Cook 1989: 34) and "*deals with whether expressions in the sentence may refer to the same entities as other expressions*" (Ibid.: 43) in the following way: *McCabe$_i$ shot himself$_i$.(i)* is an index which is assigned to the expressions which are coreferent. We say that *himself* is coindexed with *McCabe*, that is to say, it is 'bound' to it.

How can we account for this in our analysis? In a formal way, we can use X to replace the corresponding form of *HE* in the objective case and which can be either *Him* or *Himself*. Thus, the sentence will become: *McCabe shot X*

If *McCabe* and X refer to the same person, then X = *himself*.

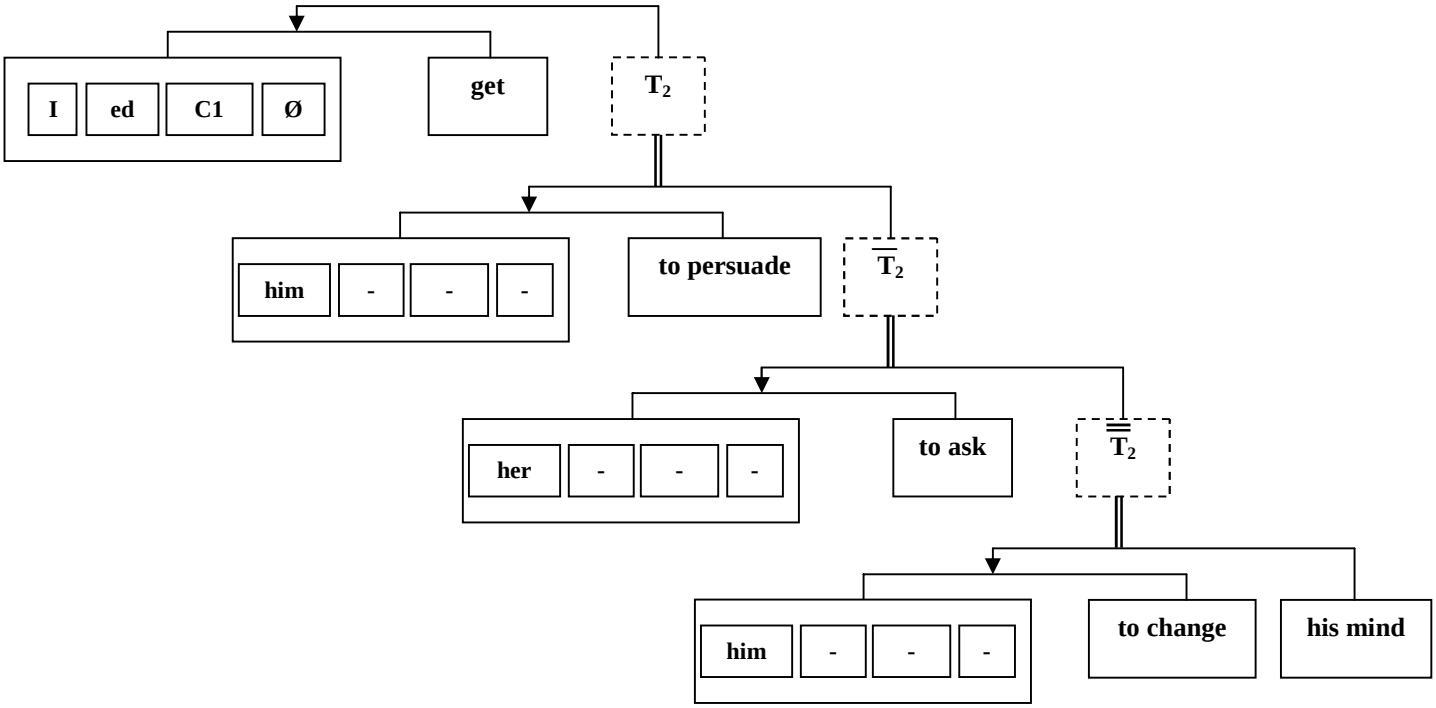


Figure 4.11 (cf. e.g. 4.3, p. 146)

And if *McCabe* and X do not refer to the same person, then X = *him*.

In both cases the resulting sentence is fully grammatical and the used form depends on the intended meaning. (Exception: *I looked at my son and I saw me*).

The following example given by Cook (Ibid.: 45) is also interesting to study:

(i) McCabe said that Jensen shot himself

(ii) McCabe said that Jensen shot him

Though in our study we have not dealt with *that clauses*, we can say that in (i) *himself* refers to *Jensen* (the subject of the sentence), while in (ii) ***him*** might refer to ***McCabe*** or any other person not mentioned except McCabe or Jensen.

In fact, pronominals such as ***him*** are ambiguous since they either have an antecedent within another sentence or refer outside it altogether" (Ibid.). While anaphors "*must have antecedents within their own sentence; they are 'bound' within it*" (Ibid.: 46).

Kate$_i$ asked the woman to see her$_i$ (Ibid.);

Jane wanted (the girl$_i$ to help herself$_i$) (Ibid.);

Henry$_i$ believed (himself$_i$ to be innocent) (Ibid.: 47);

McCabe said (he$_i$ shot himself$_i$) (Ibid.);

This phenomena exists also in Arabic as mentioned by Cook (Ibid.: 48) with the following example: *Qālat Fāṭimatun inna Huda qatalat nafsahā* (قالت فاطمة إن هدى قتلت نفسها, i.e., Fatima said that Huda shot herself.).

Thus, one of the results of this embedding (and which can be used as an argument for the validity of the analysis we have suggested here) is that the effect of the first governing elements (R) appears even at the level of the governor of the embedded structures by transforming the form of the pronouns from the subjective to the objective case[7], from one hand, and by not allowing the appearance of elements in the positions of inflection. This means also that examples such as e.g. 4.3 are a result of a complex construction of many simple constructions: *He got (he persuaded (she* asked *(he changed his mind))).*[8]

---

[7] In case the object is a lexical item which cannot show case through its morphology (for example *the boy* in *John gave the boy an apple* or *The boy gave an apple to John: The boy* has the same morphology whether it is a subject or an object. In Case theory of Universal Grammar, it is stated that "*in some languages, Case is morphologically realized, in others not, but we assume that it is in a uniform way whether morphologically realized or not"* (Chomsky 1986: 74). In fact, "*Case theory is the module that assigns abstract Case to NPs and, by so doing, provides a principled explanation for several aspects of movement*" (Cook 1989: 137). What is interesting in this theory is that it stipulates that:

> Nominative and Accusative Cases are assigned in the s-structure; they are 'structural' cases since they are assigned according to the GF configurations of the sentence. In each of the GFs a particular element acts as the 'case assigner'. The assignment of Nominative to the subject NP depends on Tense as a feature of INFL; sentences without Tense do not have subjects in the Nominative Case. In: *For him to resign is silly*. And: *His resigning is silly (Ibid.).*

[8] Chomsky (1981) has handled this kind of constructions in the following way:

"(39) (i) We persuaded John that he should finish college

(ii) John was persuaded that he should finish college

(iii) We persuaded John to finish college

(iv) John was persuaded to finish college

(40) … [$_{VP}$ persuade [$_{NP}$ John] [$_{S}$ that he (John) should finish college]]…

(40) (i) We INFL [$_{\alpha}$persuade [$_{NP}$ John] [$_{S}$ that he should finish college]]

Let us now re-examine the examples where the position of the subject is empty (i.e., e.g. 4.2 and e.g. 4.4, p. 146):

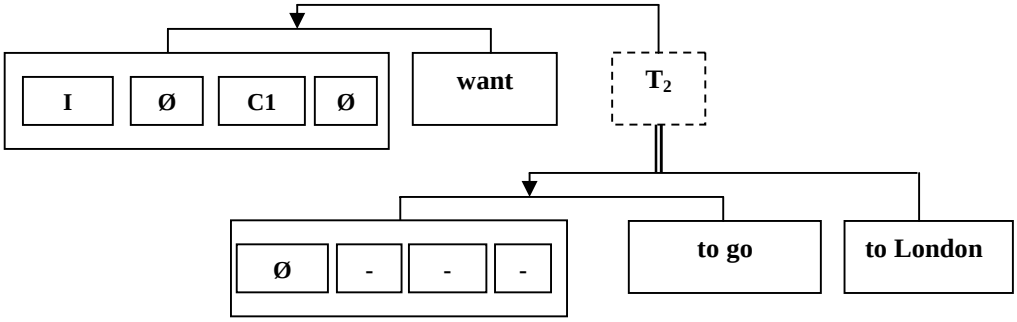


Figure 4.12 (cf. e.g. 4.2)

As we can see, the empty position of the subject of the embedded structure is governed by a governing unit which includes the subject *I*; this means that if we had to explicit the subject in the embedded structure it would take the form *me*; i.e., *I want me to go.*

In fact, the subject in the embedded structure does not appear as long as it is the same as the one appearing as a governor which dominates it. Once the dominated subject refers to a different subject from the one of the dominating structure, we have

---

(ii) John INFL be [$_{\alpha}$persuade [$_{NP}$ β] [$_{S'}$ that he should finish college]]

(iii) We INFL [$_{\alpha}$persuade [$_{NP}$ John] [$_{S'}$ PRO to finish college]]

(iv) We INFL be [$_{\alpha}$persuade [$_{NP}$ β] [$_{S'}$ PRO to finish college]]" (pp. 29-30)

The students [$_{\alpha}$want [$_{\beta}$to [$_{\gamma}$visit Paris]]]. In a footnote (cf. Ibid., note 4, p. 138), Chomsky notes that "one might argue that at the surface structure, *to visit* becomes a single word." But, the following possibility is not taken into consideration: "it has occasionally been proposed that wanna [want+to] is a lexical verb, perhaps quasi-modal (…) This verb would have a highly defective morphology and unique syntactic distribution (e.g., "I wanna visit Paris", " I will wanna visit Paris", etc.; but not "*he wanna(s) visit Paris", *"I wanna(d) visit Paris (yesterday, if I could)", etc.)" (Ibid.: footnote 5, p. 138).

to make it explicit by using for example *her* or *him*. This is shown in the example e.g. 4.4 (p. 146) that we can represent as follows:

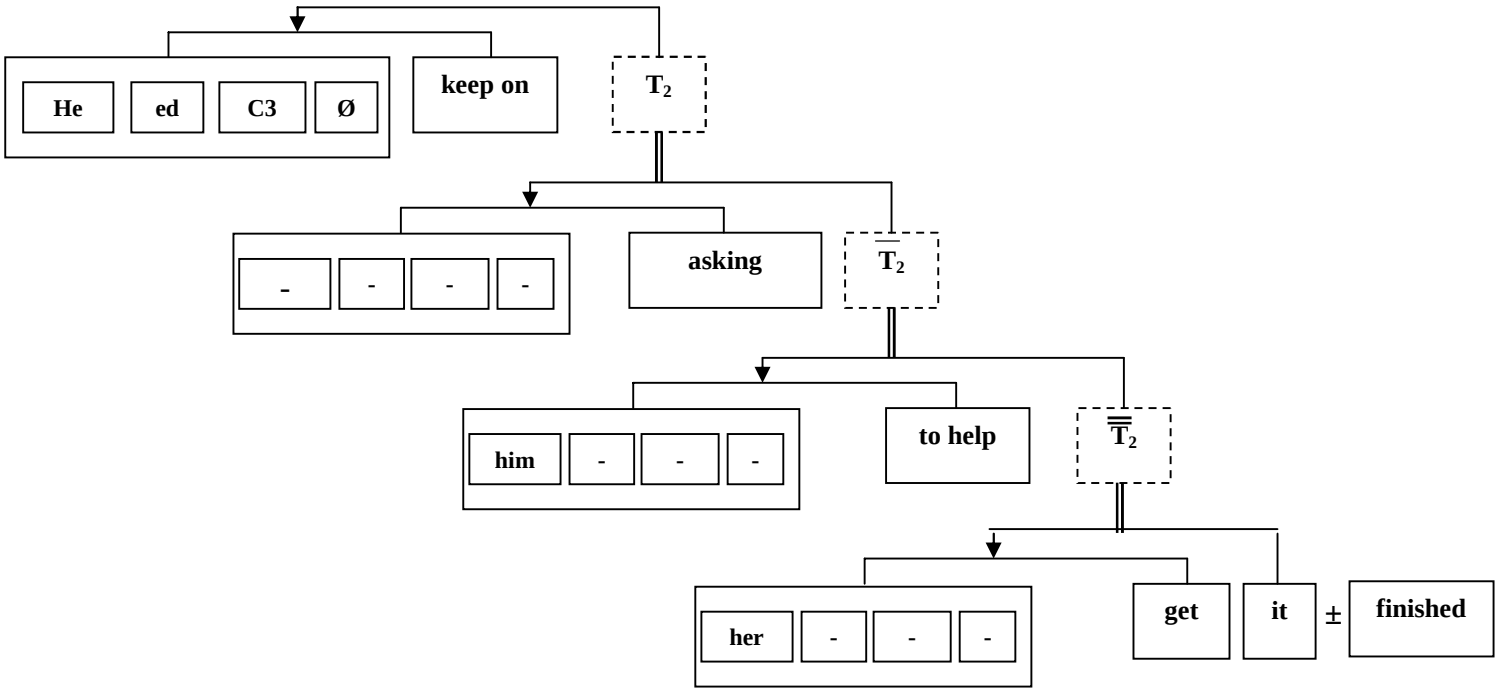


Figure 4.13 (cf. e.g. 4.4, p. 146)

4.2. Classification of the catenatives

Palmer (1968: 15) classifies the catenatives in the same way he classifies the English verb in general and the auxiliaries[9]; i.e., according to "*the form of the verb by which they are followed*". Thus, four classes are suggested (Cf. Ibid. 15, 36, 151)[10]:

[9] Palmer (1968) somehow falls in a contradiction in describing this classification as being "*not a very important one in itself*", but "*is of great importance only when we come to deal with the sub-classification of the catenatives"* (p. 15). We have already mentioned this point in our discussion of the arguments given by Palmer in favor of the classification he has proposed for the verbs and auxiliaries and the criticism directed to this classification by Huddleston. (cf. chapter three, p. 136)

[10] All the examples below are taken from Palmer (1968: 150-179)

4.2.1. Catenatives which can be followed by the infinitive only

4.2.1.1. Case where the subject of embedded structure is the same as the subject of the main structure

As in: e.g. 4.7 He *helped wash up*

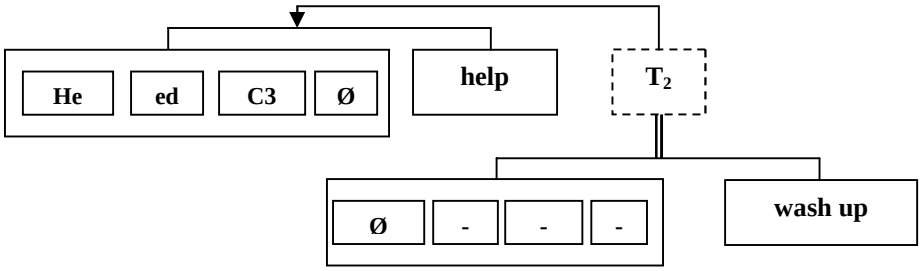


Figure 4.14

4.2.1.2. Case where the subject of embedded structure is not the same as the subject of the main structure

As in: e.g. 4.8 *He made them finish the job*

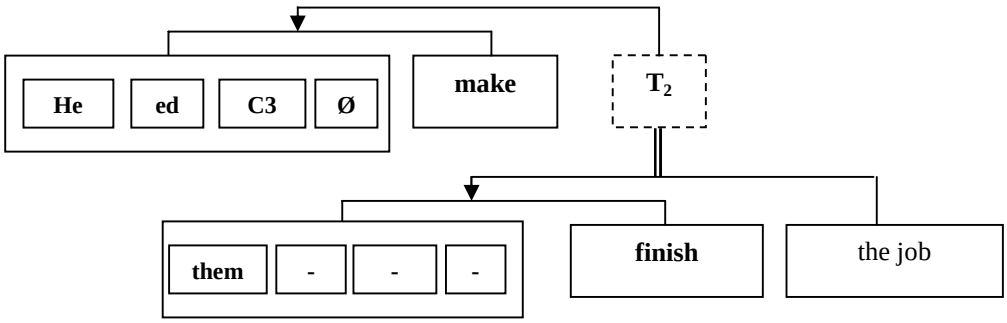


Figure 4.15

4.2.2. Catenatives which can be followed by to + infinitive

4.2.2.1. Case where the subject of embedded structure is the same as the subject of the main structure

As in: e.g. 4.9 *He likes to be working in the morning*

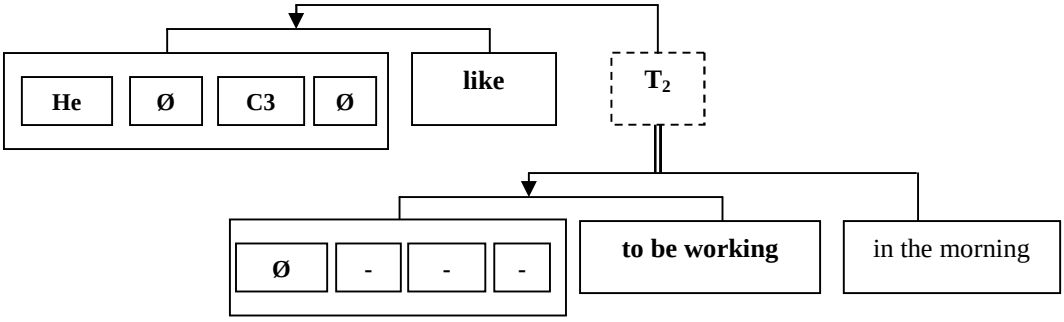


Figure 4.16

e.g. 4.10 *I want to have finished it soon*

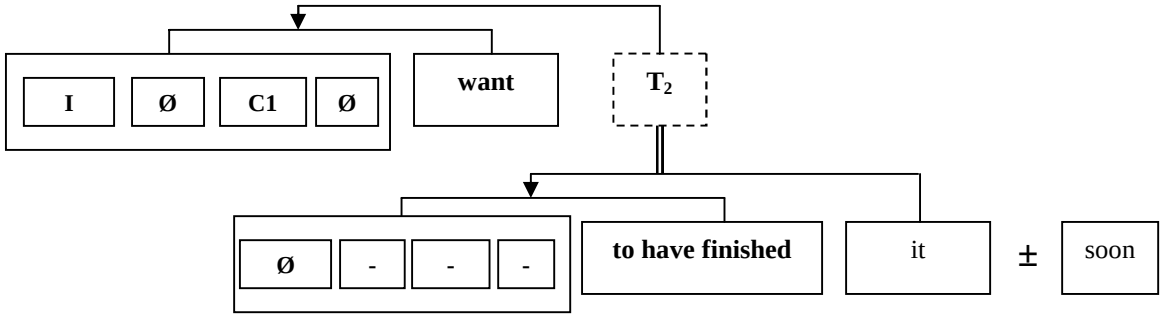


Figure 4.17

e.g. 4.11 *I want to have been informed by six*

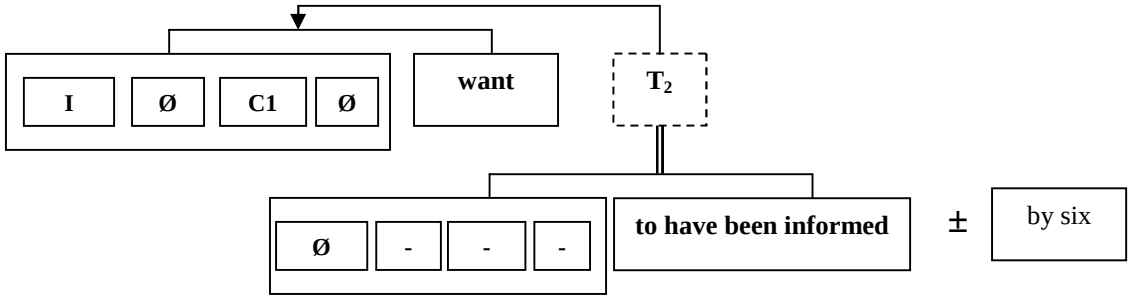


Figure 4.18

e.g. 4.12 *He needs to be told about it*

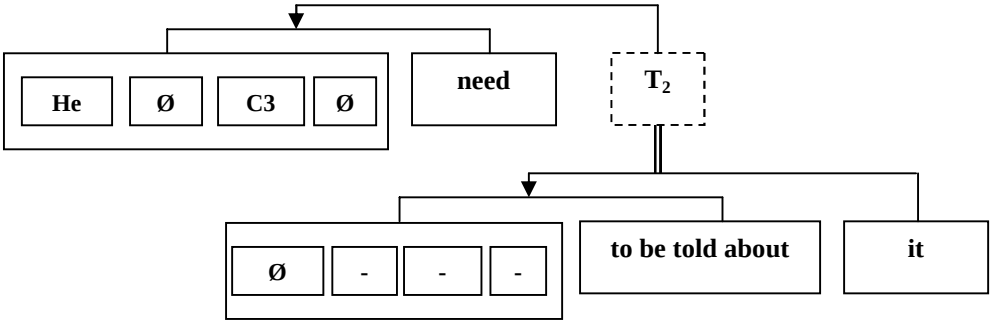


Figure 4.19

4.2.2.2. Case where the subject of embedded structure is not the same as the subject of the main structure

As in: e.g. 4.13 *He persuaded them to take a holiday*[11]

---

[11] The verb *to persuade* is interesting to study. Chomsky (1965) gives the following two examples (p. 22):

(1) *I persuaded John to leave*

(2) *I expected John to leave*

He underlines the fact that these two sentences do not "*receive the same structural analysis*" though this may not be observable at first sight. He speaks of an "*internalized grammar*" of the hearer which "*assigns very different syntactic descriptions to these sentences*" (Ibid). To clarify the difference, Chomsky gives the following sentences:

(3) (i) *I persuaded a specialist to examine John.*

(ii) *I persuaded John to be examined by a specialist.*

(4) (i) *I expected a specialist to examine John*

(ii) *I expected John to be examined by a specialist*

The difference lies in the fact that the last pair of sentences being "'*cognitively synonymous': one is true if and only if the other is true*". The difference is also shown by Chomsky through the underlying deep structures that we reproduce below (Ibid.: 23):

(5) (i) Noun Phrase - Verb - Noun Phrase - Sentence

I - persuaded - a specialist - a specialist will examine John

(ii) NP - V - NP - S

I - persuaded - John - a specialist will examine John

(6) (i) NP - Verb - Sentence

I - expected - a specialist will examine John

(ii) NP - Verb - Sentence

I - expected - a specialist will examine John

According to our analysis, these sentences are represented as follows:

[I + C1 + ed + ø]$_{R}$ [persuade] $_{T1}$ [a specialist] $_{T2}$ [[a specialist] [to examine] [John]] $_{T3}$

[I + C1 + ed + ø]$_{R}$ [persuade] $_{T1}$ [John] $_{T2}$ [[John] [to be examined] [by a specialist]] $_{T3}$

[I + C1 + ed + ø]$_{R}$ [expect] $_{T1}$ [[a specialist] [to examine] [John]] $_{T2}$

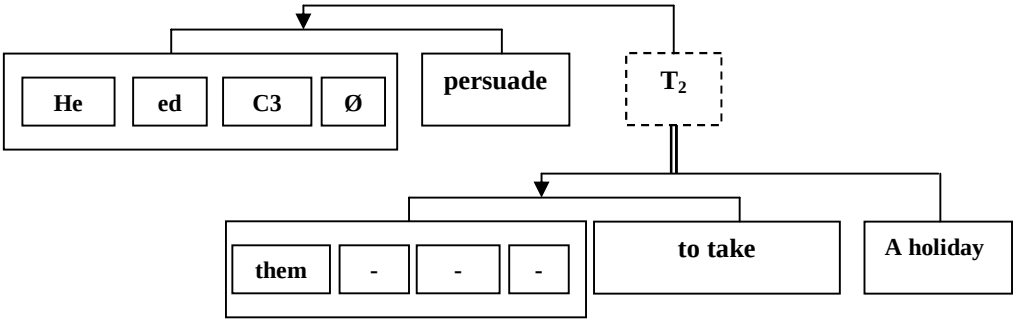


Figure 4.20

4.2.3. Catenatives which can be followed by the *-ing* form

4.2.3.1. Case where the subject of embedded structure is the same as the subject of the main structure

As in: e.g. 4.14 *He keeps talking about it*

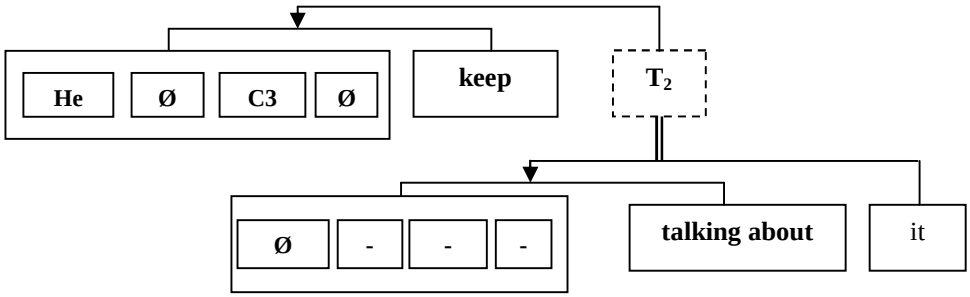


Figure 4.21

e.g. 4.15 *He keeps being caught*

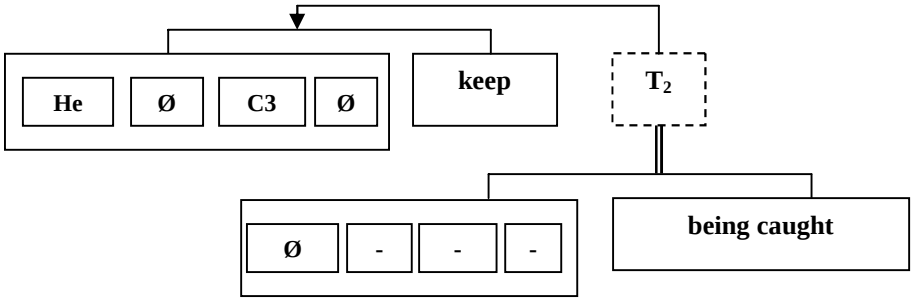


Figure 4.22

[I + C1 + ed + ø]$_{R}$ [expect] $_{T1}$ [[John] [to be examined] [by a specialist]] $_{T2}$

They persuaded John to leave (Chomsky 1981, Reed. 1997: 35-36)

(1) Choice 1: [They] $_{R}$ [persuaded] $_{T1}$ [[John] $_{R'}$ [to leave] $_{T'1}$] $_{T2}$

(2) Choice 2: [They] $_{R}$ [persuaded] $_{T1}$ [John] $_{T2}$ [[PRO][to leave]] $_{T3}$

e.g. 4.16 *I regret having said that*

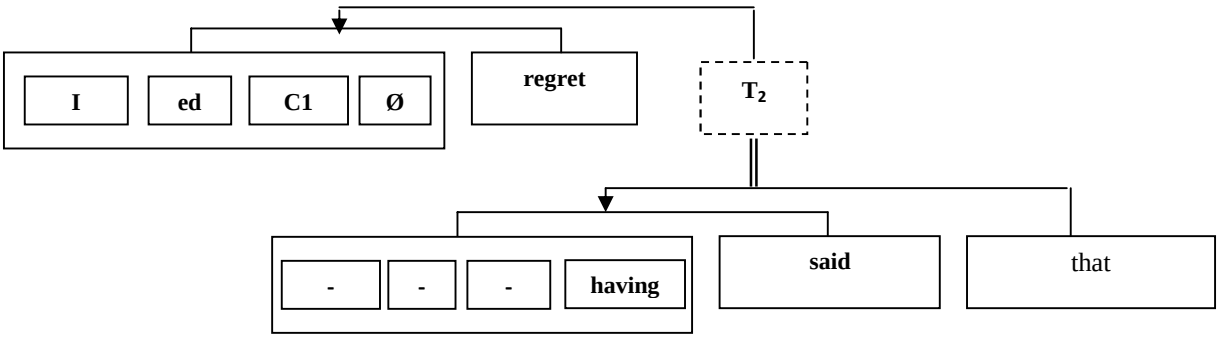


Figure 4.23

4.2.3.2. Case where the subject of embedded structure is not the same as the subject of the main structure

As in: e.g. 4.17 *He keeps them talking a long time*

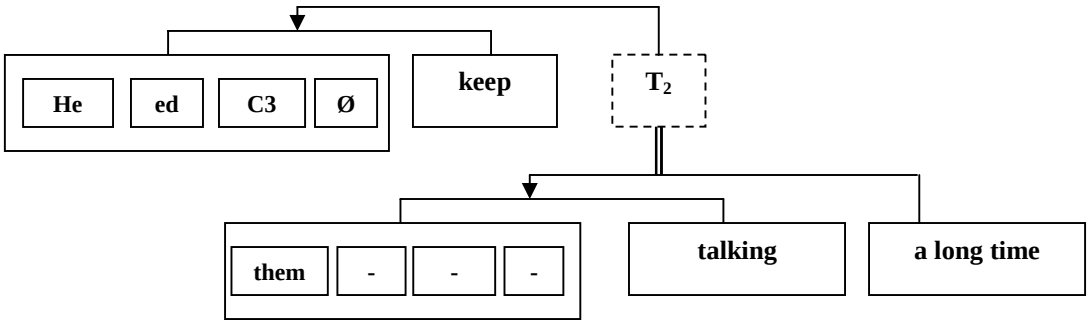


Figure 4.24

4.2.4. Catenatives which can be followed by the past participle

4.2.4.1. Case where the subject of embedded structure is the same as the subject of the main structure

As in: e.g. 4.18 *He got hurt in the scramble*

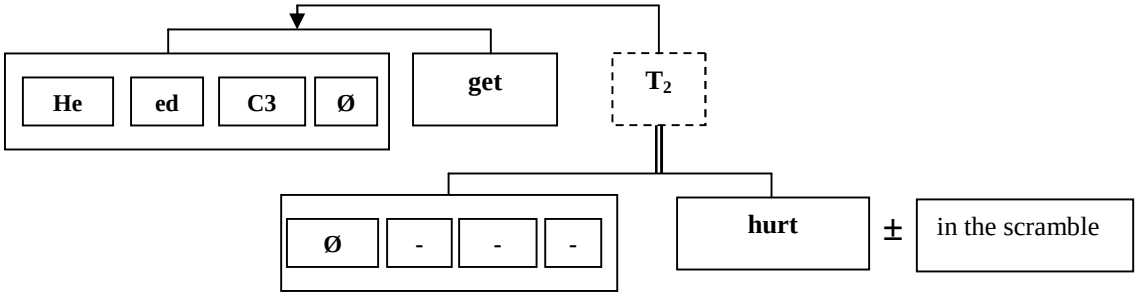


Figure 4.25

4.2.4.2. Case where the subject of embedded structure is not the same as the subject of the main structure

As in: e.g. 4.19 *He had the prisoners shot*

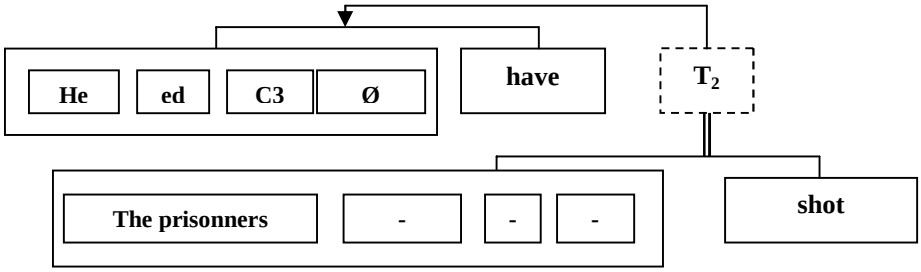


Figure 4.26

4.3. Arguments in favour of the suggested analysis for the catenatives

In traditional grammar, the infinitive verb forms, with or without '*to*', are known as 'verbal nouns' and the past participles are treated as adjective, while the *-ing* forms are considered either as nouns or adjectives (Cf. Palmer 1968: 151). Palmer gives the following examples:

I want to read (e.g. 4.20) is compared to *I want a book* (e.g. 4.21)*; I like reading* (e.g. 4.22) is compared to *I like books* (e.g. 4.23)*; He keeps reading* (e.g. 4.24) is compared to *He keeps quiet* (e.g. 4.25)*; He got hurt* (e.g. 4.26) is compared to H*e got hot* (e.g. 4.27).

Those who advocate this kind of analysis use examples where the 'gerunds' function as subjects (like in: *Reading is a very pleasant occupation* and *To err is human*) and the 'participles' as modifiers of nouns (like in *A sleeping child* and *A hurt child*). But this kind of analysis can be objected on the basis that these forms can have objects (like in *I want to read a novel*) and subjects (like in *I want John to read*

a novel); in addition to the many other difficulties which arise from handling such forms as nouns or adjectives (Cf. Ibid.: 152-155).

Let us reconsider the examples above according to the analysis into R, Ti, D:

a. I want to read* is compared to: *I want a book

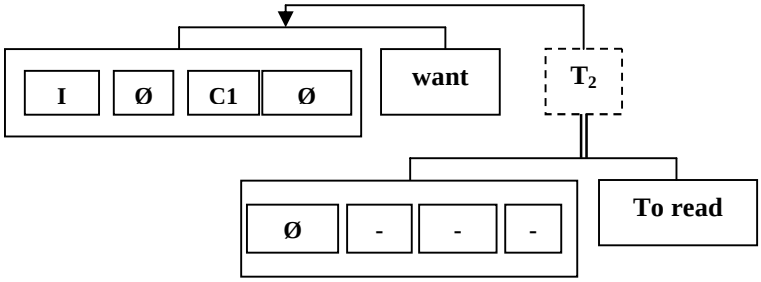


Figure 4.27: Representation of example e.g. 4.20

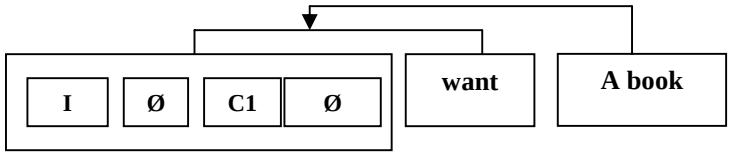


Figure 4.28: Representation of example e.g. 4.21

This analysis reveals that *a book* is analyzed directly as the second governed term of the main *tectonie* (R= I + Ø + C1 + Ø, T1= want) while *to read* is analyzed as the first governed term of the embedded *tectonie* ($\overline{R}$ = '_', $\overline{T1}$ = to read) which functions as the second governed term of the main *tectonie* (R= I + Ø + C1 + Ø, T1= want). This means that *to read* is analyzed as a verb which is from the structural point of view included in an embedded structure ($\overline{R,T1}$) and which is equivalent to *a book* (being T2 in the main structure), though they (*a book* and *to* read) do not belong to the same word class (i.e., they are respectively, a noun and a

verb). This also means clearly that *to read* in our analysis is considered a verb form and not a noun.

b. I like reading* is compared to: *I like books

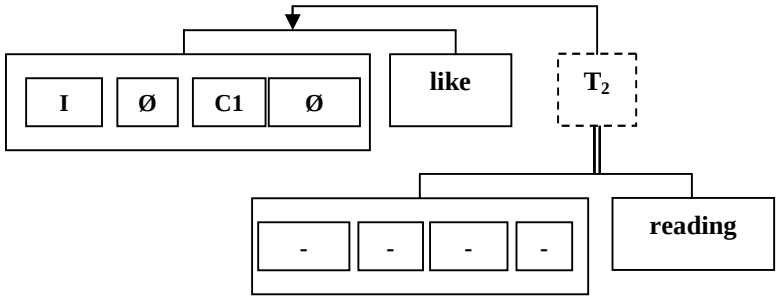


Figure 4.29: Representation of example e.g. 4.22

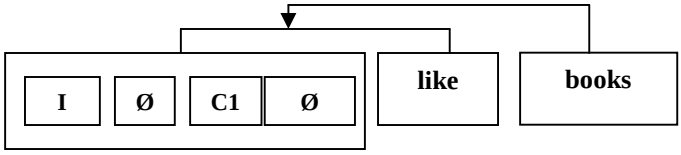


Figure 4.30: Representation of example e.g. 4.23

This analysis reveals that *books* is analyzed directly as the second governed term of the main *tectonie* (R= *I* + Ø + C1 + Ø, T1= *like*), while *reading* is analyzed as the first governed term of the embedded *tectonie* (R = '_', T1 = *reading*) which functions as the second governed term of the main *tectonie* (R= *I* + Ø + C1 + Ø, T1= *like*). This means that *reading* is analyzed as a verb which is from the structural point of view included in an embedded structure ($\overline{R,T1}$) that is equivalent to *books* being the T2 of the main structure, though they (i.e., *books* and *reading*) do not belong to the same word class (i.e., they are respectively, a noun and a verb). This also means clearly that *reading* in our analysis is considered as a verb form and not a noun.

He keeps reading i*s compared to *He keeps quiet

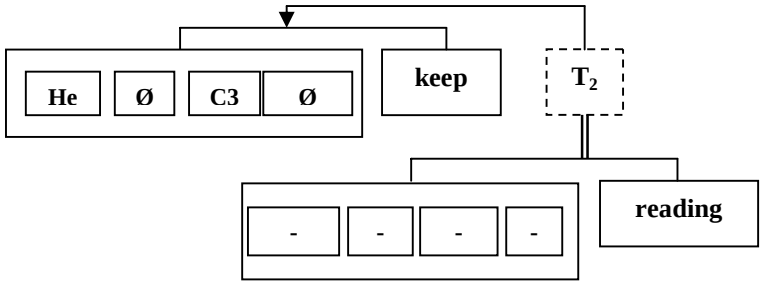


Figure 4.31: Representation of example e.g. 4.24

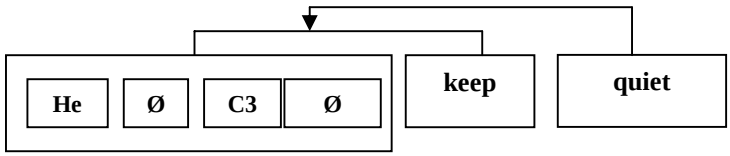


Figure 4.32: Representation of example e.g. 4.25

This analysis reveals that *quiet* is analyzed directly as the second governed term of the main *tectonie* (R= *He* + Ø + C3 + Ø, T1= *keep*), while *reading* is analyzed as the first governed term of the embedded *tectonie* ($\overline{R}$ = '_', $\overline{T1}$ = *reading*) which functions as the second governed term of the main *tectonie* (R= *He* + Ø + C3 + Ø, T1= *keep*). This means that *reading* is analyzed as a verb which is from the structural point of view included in an embedded structure ($\overline{R,T1}$) that is equivalent to *quiet* which is the second governed term (T2) of the main structure though they (i.e., *quiet* and *reading*) do not belong to the same word class (i.e., they are respectively, an adjective and a verb). This also means clearly that *reading* in our analysis is considered as a verb form.

c. He got hurt* is compared to *He got hot

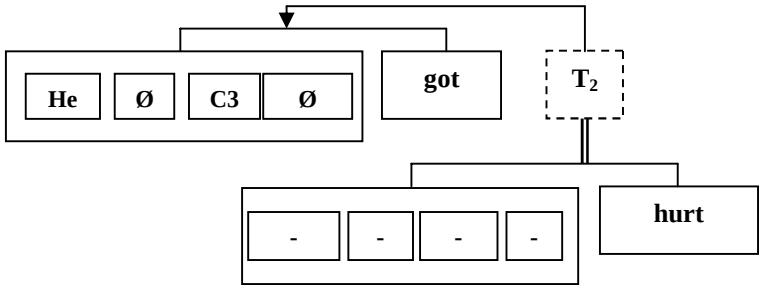


Figure 4.33: Representation of example e.g. 4.26

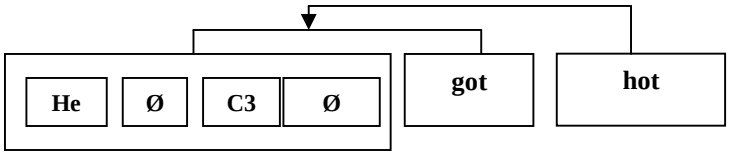


Figure 4.34: Representation of example e.g. 4.27

This analysis reveals that *hot* is analyzed directly as the second governed term of the main *tectonie* (R= *He* + Ø + C3 + Ø, T1= *got*), while *reading* is analyzed as the first governed term of the embedded *tectonie* ($\overline{R}$ = '_', $\overline{T}$1 = *hurt*) which functions as the second governed term of the main *tectonie* (R= He + Ø + C3 + Ø, T1= *got*). This means that *hurt* is analyzed as a verb which is from the structural point of view included in an embedded structure ($\overline{R,T1}$) that is equivalent to *hot* which is the T2 of the main structure, though they (i.e., *hot* and *hurt*) are not from the same word class (i.e., they are respectively, an adjective and a verb). This also means clearly that *hurt* in our analysis is considered as a verb form.

To consolidate this point of view, let us examine the difficulties deriving from the analysis which considers these verb forms as being nouns or adjectives as

described by Palmer (1968: 152-155) and see if the analysis into R, Ti, D generates the same difficulties.

a- How to explain the fact that the form *to* read can have an object as in *I want to read a novel* (e.g. 4.28)

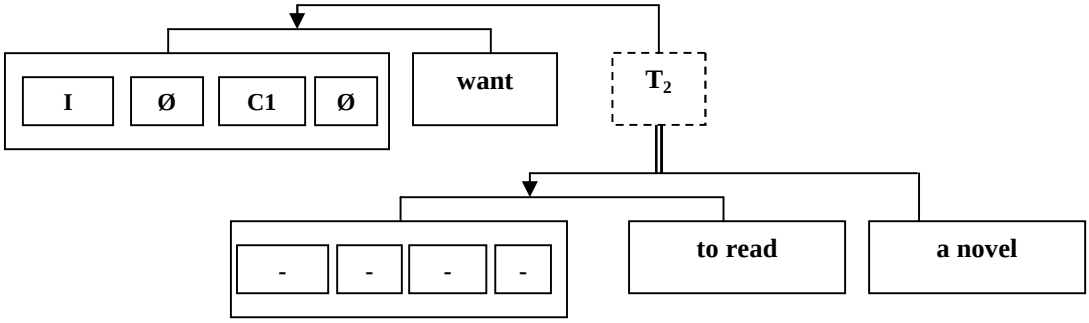


Figure 4.35

As we can see in this representation, analysing the form *to read* as a first governed term does not prevent it from having an object which in the embedded structure has the function of a second governed term.

b- How to explain the fact that the form *to* read can have a subject as in *I want John to read a novel* (e.g. 4.29)

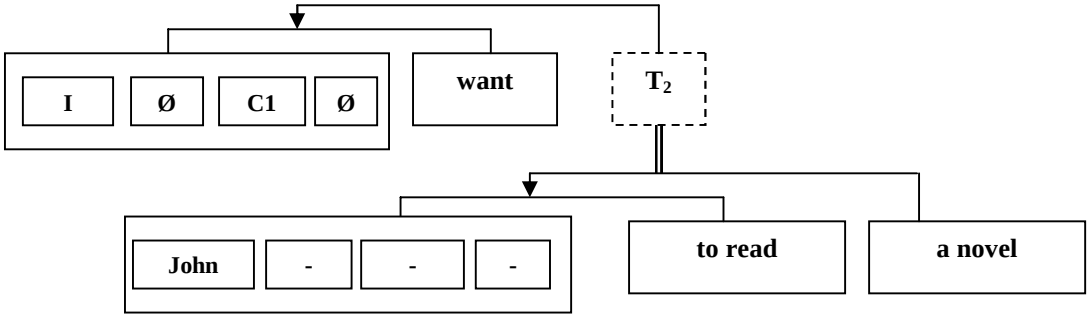


Figure 4.36

As we have already seen in this analysis, *to read* has a position which allows it to have both a subject and an object. In fact, even in the examples which are similar to the example e.g. 4.28 above, the position of the subject exists, but since the subject of the embedded structure is the same as that of the main structure, the

subject is not repeated. In e.g. 4.29, on the other hand, the subject of the embedded structure is explicit because it is different from the subject of the main structure.

c- How to decide if the *-ing* form is to be compared to a noun or an adjective

In this section, we are going to compare *talking* in *He keeps talking* (e.g. 4.**30**), for example, to an adjective like *quiet* in *He keeps quiet* (**e.g. 4.25**) or to a noun such *a dog* as in *He keeps a dog* (e.g. 4.**31**).

Let us first represent the structure of these three examples:

He keeps talking (e.g. 4.**30**)

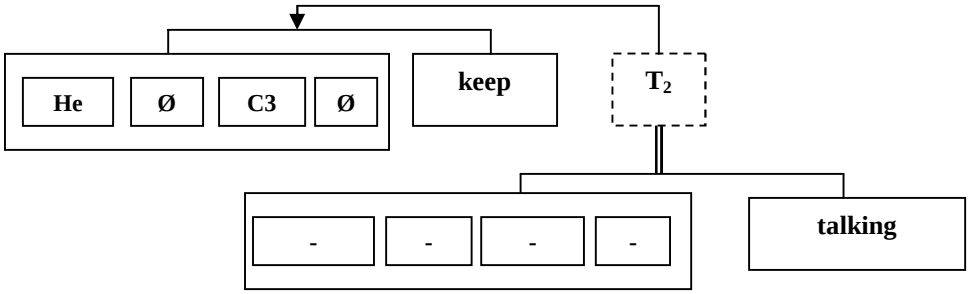
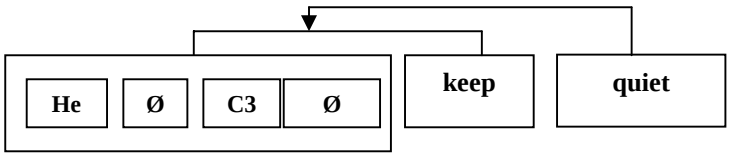


Figure 4.37

*He keeps quiet (***e.g. 4.25***).*



(Cf. Figure 4.32 (p. 165))

*He keeps a dog (*e.g. 4.**31***)*

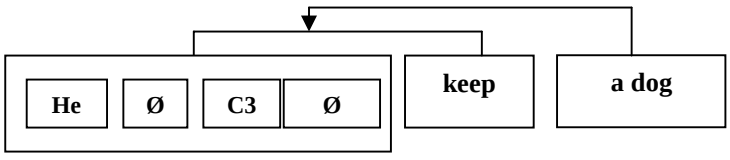


Figure 4.38

As we can see, the analysis allows us to differentiate *talking* from *quiet*, which is the subject complement appearing as a second governed term, and *a dog*

which is a direct object also appearing as a second governed term. *Talking* appears in the position of the first governed term of the embedded structure and we know that this position is very specific to the verbs. We have not met till now any example in which this position contains an element other than a verb. Even in cases of SVC pattern (Subject-verb-complement) where V = *to be*, this verb appears as a governor (more precisely an operator in R) and we suggest that the position of the first governed term is empty.

d- How to explain the fact that some *-ing* forms which can be followed by another verbal form of another full verb cannot be followed by an adverb or a noun and vice versa

Let us examine the following examples given by Palmer (Ibid.: 152-153):

He continued talking

**He continued quiet*

He continued the lesson

**He continued them talking*

Continue is a monotransitive verb which accepts one object and not a subject complement as opposed to the verb *keep* which can appear in SVCs pattern as a linking verb (as in e.g. 4.25) and in SVOd[12] pattern (without embedding in O as in e.g. 4.31 or with an embedded structure as in e.g. 4.30). The same thing can be said of the verb *stop* in the following examples:

He stopped talking

[12] Od stands for direct object.

**He stopped quiet*

He stopped the work

We have to note here that, till now, the subject complement and the direct object appear in the same position in our pattern as T2 and this does not allow us to make the distinction between them.

4.4. Consequences with regard to the suggested structures at the lexical and supra-lexical levels

4.4.1. The lexical versus the supra-lexical level

Thus, the unit made up of a subject, inflection and operator always governs the verb even if the positions of the subject and/or inflection and/or operator are empty. This notion of an empty category that governs other elements in a given construction exists also in Western linguistics. The empty category is defined as "*any node without phonological content. Empty categories can be the result of deletion or movement, or they are base-generated*" (Kerstens & al. 1996) and an empty operator is an "*operator without phonological content*." (Ibid.) In his most recent works, Chomsky speaks about pro-drop and non-pro-drop languages (Cf. Cook 1989). The pro-drop parameter is defined as the parameter that "*determines whether the subject of a clause can be suppressed*" (Chomsky 1988: 64) and "*pro is an empty category that does not appear in the surface*" (Cook 1989: 41). In this latter case, it is suggested that it is the INFL (i.e., inflection: cf. glossary) that

governs the subject and in this context English is classified as a 'non-pro-drop' language by Chomsky.

At the *lexical* level, the units are made up of one element conveying one aspect of English grammar: tense, aspect, mood, voice, one action: one full verb; repeated at higher levels as many times as the unit is repeated. And this is the second reason why we have suggested that the modal auxiliaries appear only at the supra-lexical level since they cannot be repeated neither in the basic structure (**John will can sing* (e.g. 4.32) or **John has could sing* (e.g. 4.33) (Cf. Baker 1978: 60)), nor in the embedded ones (**I like can fishing*). This is not the case of the other characteristics of the verbal *lexie* as we have just said.[13] These are more examples to confirm the modal auxiliaries are not repeatable in the embedded structure (Ibid.: 175):

(i) a. *We would like for Jack to be able to leave*
b. **We would like for Jack to can leave*
(ii) a. *They do not want for Marsha to have to hurry*
b. **They do not want for Marsha to must hurry*. (Ibid. 1978: 175)

This kind of faulty verbal constructions (the b. ones) are not generated by the pattern we have so far suggested because the repetitive structure is of the type *to have been being done* and not **to must have been being done* or **to can have been being done*[14].

[13] For more clarity concerning this point, the reader can see how the passive is repeated in a tense form containing more than one verbal *lexie,* cf. This chapter, p. 177.

[14] Notice that *Do* in the constructions above is a full verb and not an auxiliary. It is used here to represent the constructions containing the other English verbs just like *fa'ala* in Arabic.

4.4.2. Finite versus non-finite verb phrases

The study of the catenatives brings us to define the finite verb phrase as being the one whose governing elements are not empty, while the non-finite verb phrase is the one whose immediate governing elements are empty.

4.4.3. Disjunction versus embedding

The phenomenon of embedding is well known in Western linguistics. Embedding is possible in English through the complementizers whose function is:

> to show that the sentence immediately following is a subordinate or embedded sentence. Two types of complementation are illustrated: noun complementizers (2) and verb complementizers (3)
> (2) *The rumour that Charlie married Mary is untrue*
> (3) *Fred believes that Charlie married Mar*" (Brown & Miller 1980: 134)

Some speak also of recursion:

> a. *Alice has flat feet*
> b. *Bob knows that Alice has flat feet*
> c. *Bill believes that Bob knows that...*
> d. *Bob knows that Bill believes that Bob knows...*
> e. *Bill believes that Bob knows that Bill believes that Bob knows...* (Baker 1988: 32)

To allow such lengthening, generative transformational grammars provide this rule:

S $\rightarrow$ NP VP

VP $\rightarrow$ V that S (Ibid.: 39)

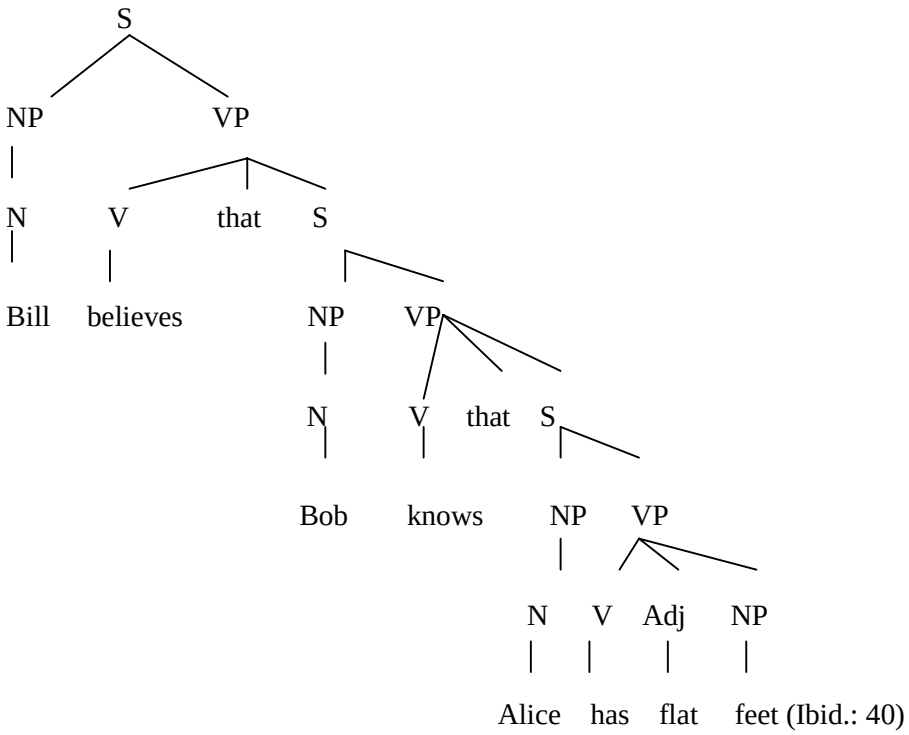


Figure 4.39

In our analysis, when it is question of recursion due to the appearance of the verbal *lexies* introduced by the particle *to*, the governing elements of the embedded structure are empty because the scope of the governing elements of the main structure reaches the elements of the embedded structure. This is not the case when the recursion happens with the complementizers with which the elements in the governing positions of the embedded structure need to be explicitly expressed and repeated even if they are the same as the first ones. On the contrary of *to*, '*that'* is a *fāṣil* (i.e., breaker cf. glossary). Thus, any element that comes after it cannot be inflected by what precedes it. This is the same as *'adawāt al-šarṭ* (الشرط, i.e., condition) and *al-istifhām* (الاستفهام, i.e., question) in Arabic. What is interesting to notice here is that in some cases there can be a total disagreement between what comes before and after these breakers: this is the case of the tenses, for example, of

the two verbal constructions in :

I told him: "You can do it" = *I told him that he could do it*

I will tell him: "You could have done it" = *I will tell him that he could have done it*

Notice that after *that* we have *he* and not *him*, thus, *that* is a barrier with regard to the subject, which governs the pronoun that appears in the position of the second governed element, since its form is not objective (*i.e.*, him). The second verbal form can have another subject and even if it has the same subject we have to restate it: *I wish that I play*. While with *to* the subject is not repeated: *I wish to play* and not **I wish I to play*.

4.4.4. Distinction between simple and complex phrases

As we have seen at the beginning of this chapter, for Palmer (1968), the complex phrases are those that contain more than one full verb. They are opposed to the simple phrases that contain only one main verb. Palmer has been criticised for the way he has analysed, for example, *to solve* in *John tries to solve the problem*, because he first says that *he has tried to solve* is a complex verb phrase and then he says that *to solve* is part of the clause *to solve the problem* (Cf. Huddelston 1980:101). For Huddelston, this confusion is due to the fact that Palmer's verb phrase, compared to that of transformational models does not include elements like objects or predicative complements. He suggested to use rather Halliday's term 'verb group' (VGp) for Palmer's simple verb phrase (cf. Ibid.).

As far as the present study is concerned, we suggest that the simple phrase be the result of a structure that has no embedding, while the complex phrase results from structures of the type exemplified in this section. This means that the simple phrase has got only one governing unit, while the complex phrases are generated by a structure that is characterised by an embedding in the position of the second governed element which allows the whole structure to contain more than one governing unit.

Without such formal criteria to distinguish the simple phrases from the complex ones, this is how Palmer defines them:

> First, we may assume that the category of tense (or any verb category) will occur only once in a simple phrase; if there is double or multiple time marking the phrase will be complex. Secondly, we may make the same assumption about negation - we shall expect a simple phrase not to be negated more than once. Thirdly, if we have a sentence with a single clause, we can passivize it; passivization thus identifies a single clause and so a simple verb phrase (Palmer 1974:17)

We agree to some extent with Palmer though criticised by Huddleston (1980:106-110). Let us examine one by one the counter examples provided by Huddelston:

a. Tense

Huddleston disagrees with the statement of Palmer about the fact that "*there can be only one tense selection per VGp [Verb group]*" (Huddelston 1980: 106) giving the following examples:

(a) *He had left three hours earlier*
(b) *He now leaves tomorrow*
(c) *He was meeting me at six tomorrow* (Cf. Ibid.)

Moreover, he says that there can be 'multiple time/tense marking (past in past,

future in present, future in past).

We have mentioned in detail in chapter one (pp. 39-44) that the time when the action happens is not provided by the verb itself, but by other linguistic units which are not verbs like those appearing in the examples above (i.e., *three hours later*, *tomorrow*, *now*, *at six tomorrow*) giving the verb a great flexibility that allows it to co-occur with any adverb[15]. This allows the verb to have a denotation of tense rather than an exclusive meaning of tense or time specification.

b. Negation:

This characteristic is also criticised by Huddelston (1980) and even Palmer (1979) finishes by doubting: "*I now doubt very much whether the negation is a very good test anyway*" (p. 16). Palmer gives the following example:

(a) *I do not want to go*

(b) *I want not to go* (Cf. Ibid.)

Look how this can be handled in our structure using the following two examples:

You don't have to try

He keeps not being caught

[15] Though there must be some concordance between the tense form of the verb and the meaning of the adverb. We note here that Sībawayh distinguishes five types of utterances which he designates by: *mustaqīm ḥasan* (مستقيم حسن) , *mustaqīm qabīḥ* (مستقيم قبيح), *muḥāl* (محال), *mustaqīm kaḍib* (مستقيم كذب), *muḥāl kaḍib* (محال كذب) . (For more details, cf. chapter two, footnote 20, p. 63).

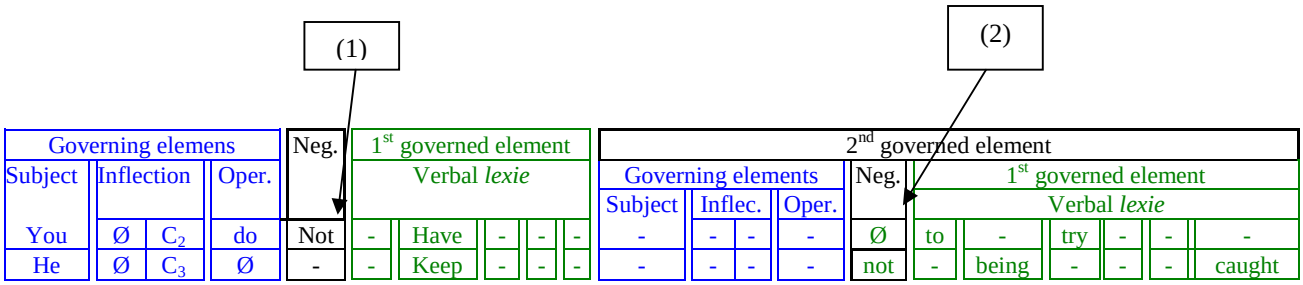


Figure 4.40

(1) 'Not', in this example, negates all the statement and not only the verb form that follows it. In this case, the scope of negation goes beyond this element (i.e., the verb form that follows it) to reach even the embedded tense form appearing in the position of the second governed term. This explains why when we have a double negation the result is positive: '*I do not want not to talk*' = '*I want to talk*'. This kind of analysis explains why double negatives are easier to get if adverbs and/or other elements separate them: *Haven't you ever not kept a promise? He wasn't exactly not listening* and why some speakers use structures like: *I play not*. It also accounts for: *I didn't not like it* which is "*acceptable as a denial of a claim that I did not like it or as a somewhat evasive answer to: did you like it?*" (Cf. Palmer 1979: 17-19)

(2) When it appears in this position, the particle "not" negates only the action of the tense form in question (i.e., contained in the embedded structure). '*Not*' here appears within the internal structure of the tense form on the contrary of the one that appears just after the governing element

We notice also that when the position of the first auxiliary is full, the position of negation that comes just after it is either empty or full; but when the position of this auxiliary is empty, the position of negation is necessarily empty and the

positions of negation in the embedded structures can be full if we want to negate the action denoted by the verb immediately preceded by 'not'. Therefore, when we want to negate our statement, we find *not* in the first position of negation to negate all the statement, while the scope of the negation that appears in the embedded structure does not go beyond the embedded structure itself. The scope of the first one includes all the verb elements that come after it as long as no non-verb element, such as the object, occurs.

In addition, the position of negation in the repeated structure can be empty or full according to what we want to say even if the position of negation that comes just after the first auxiliary is full: *I don't want Ø to play - I don't want not to play*.

c. Passivization

Huddleston (1980) continues his criticism of the paradigm presented by Palmer (1979) by saying that his paradigm generates **He was having eaten dinner.* This kind of constructions cannot be generated by the pattern we have suggested, because the possible sequences with *Be* as a first auxiliary does not include this sequence.

In our study, the passive is found at the level of each verbal *lexie* and not exclusively at the supra-*lexical* level. Thus, in a complex verb phrase, we can apply as much passivization rules as there are verbal *lexies*. This is further confirmed by the following examples in which the utterance (a) could be written as (b) keeping the same meaning. The second utterances have no modal auxiliaries in their recursive

utterance, instead the tense of the first verb or even the verb itself is modified to keep the same meaning as in (a) utterances:

1. a. *People believed that he was speaking the truth (sometime)*

   b. *He was believed to be speaking the truth*

2. a. *People say that he was brilliant (earlier)*

   b. *He is said to have been brilliant*

3. a. *People know that he will be successful (later)*

   b. *He is expected to win*

Let us see how the passivization process takes place within the pattern that we have suggested. As stated above, we can notice that to passivize a complex verb phrase, there are as many transformational rules as there are full verbs in the verbal phrase:

I started writing a book (*e.g. 4.34*)

A book was started { *being written* / *to be written* } { *Ø* / *by me* } (e.g. 4.35) (e.g. 4.36)

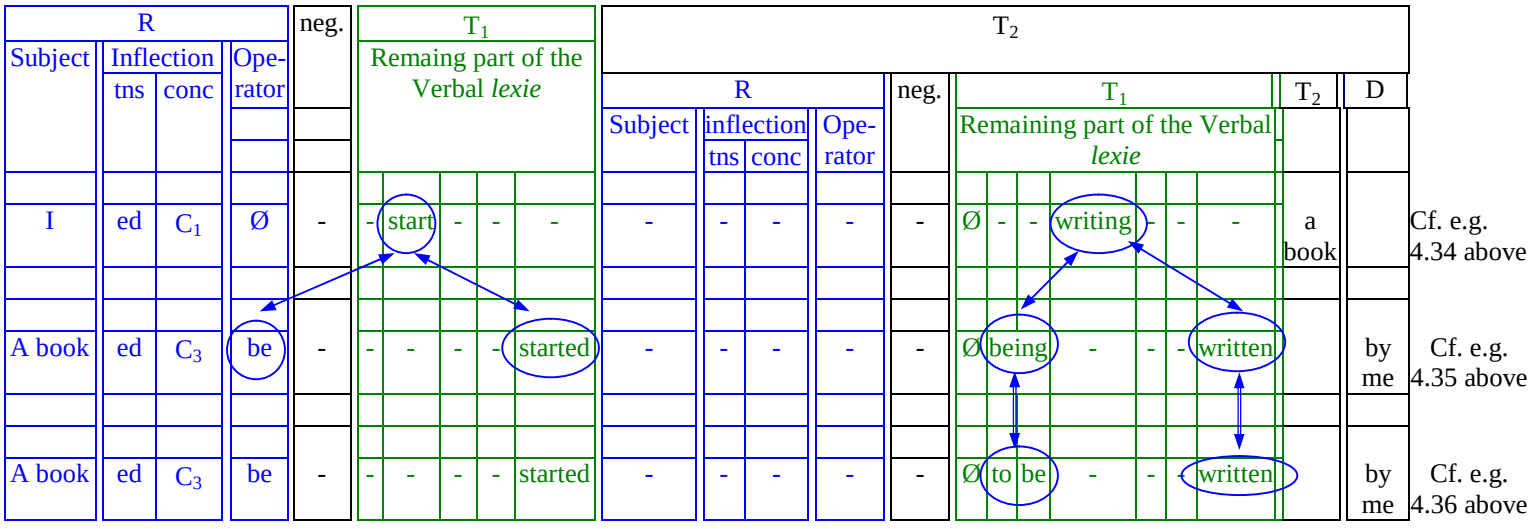


Figure 4.41

In the figure above, two transformations of the same kind occur: the shift of the full verbs of the first construction from their initial positions to the positions that characterise the passive form of the verb. We note that the passive occurs in this way: passive of Verbal lexie 1 + passive of Verbal lexie 2. What is interesting in this example is the way the passivization occurs in the embedded verbal form. This latter, which is a gerund, can be transformed in two different ways represented in (Cf. e.g. 4.35) and (Cf. e.g. 4.36), for, as already mentioned in the preceding figure, *to be* is equivalent to *being*[16].

Notice also that the verb agrees with the subject, so when the subject changes, the inflection changes also. In example (Cf. e.g. 4.34), the element of concord is C_1 because the subject is a first personal pronoun; while in (Cf. e.g. 4.35) and (Cf. e.g. 4.36), the element of concord is C3 because the subject (*A book*) is equivalent to a third personal pronoun. This consolidates the analysis we have presented so far in that the position of concord follows immediately the position of the subject and it is 'affix-hopped' to the first verb it meets just after the subject.

In addition, the passive proves that T_2 is an integral part of the structure and is not outside the *binya*, since it enters in the positions of the '*pivot*' ($R \rightarrow T1$) in the passive constructions.[17]

[16] Cf. on this point chapter two, pp. 96-98.

[17] Some linguists call this: valency-changing operation and define it as:

> a syntactic and/or morphological operation due to which the relationship between a verb and its arguments is changed. Example: due to the operation of passive formation, the internal argument of transitive verbs in the active voice gets externalized, while the

4.4.5. Dealing with some cases of ambiguity

In this section, we shall show how the analysis into governed and governing terms can deal with some cases of ambiguities. We propose to study the ambiguities which may arise from the possibility for the verb to be a multiple class membership (cf. Quirk & al. 1988: 170). For this, we have first to mention that grammar books generally make reference to seven clause patterns for the description of the English language: SV, SVO, SVOO, SVOC, SVC, SVOA and SVA. As we can notice, the obligatory elements constituting each one of these patterns are S (subject), V (verb), O (object), C (complement) and A (adverbial). There are two types of objects: the direct object (Od) and the indirect object (Oi). The complements can also be either subject complements (Cs) or object complements (Co).

The number and types of elements appearing after the sequence SV depends on the nature of the verb itself. The verb in SV clauses is extensive and intransitive, while in the other clauses, it is either intensive (to form an SVC or SVA) or extensive and transitive (monotransitive in SVO, ditransitive in SVOO, complex transitive in SVOC). (Cf. Quirk & al. 1988: 14-16). This can be summarized in the following way:

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external argument becomes an (optional) adjunct: *John killed his mother* vs. *His mother was killed (by John)).*(Kerstens & al. 1996)

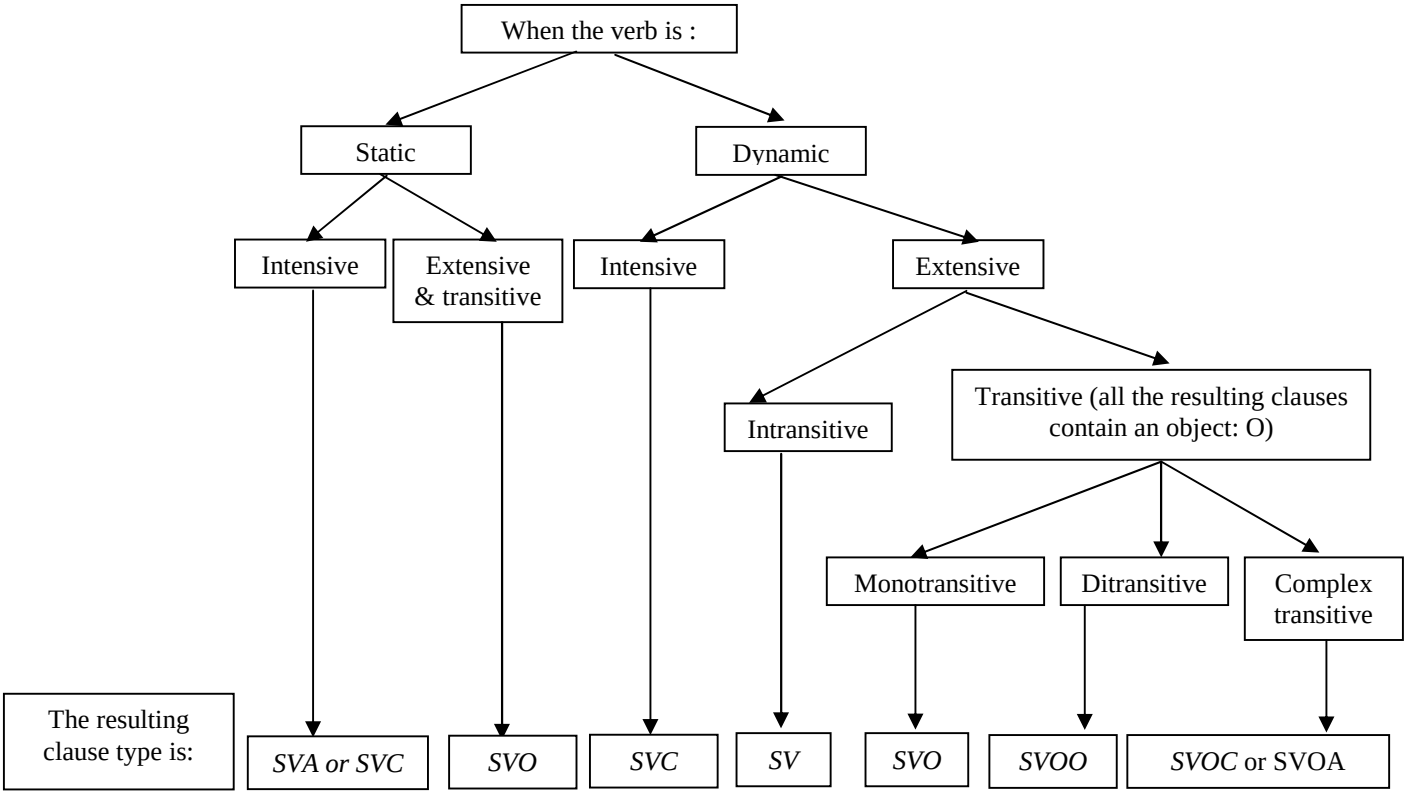


Figure 4.42: English clause patterns

The examples given below show how the verb *'to get'* can appear in different clause patterns and how each given example can be represented in our study.

SVC : *He is getting angry*

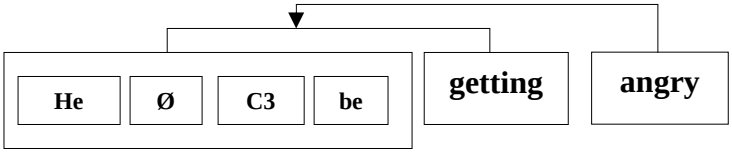


Figure 4.43

SVA : *He got through the window*

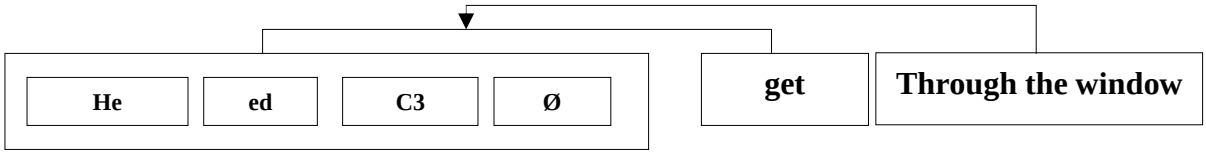


Figure 4.44

SVO : *He will get a surprise*

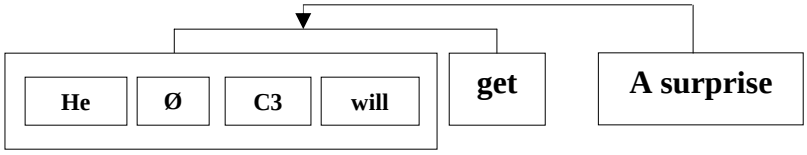


Figure 4.45

SVOC : He got his shoes and socks wet

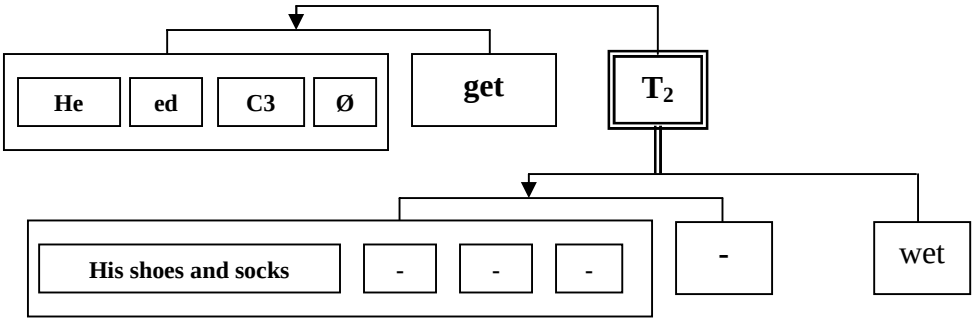


Figure 4.46

SVOA : He got himself into trouble

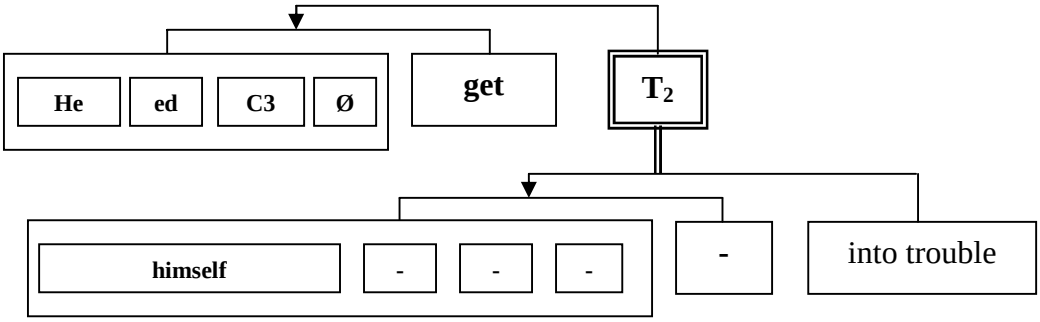


Figure 4.47

SVOO : He got her a splendid present

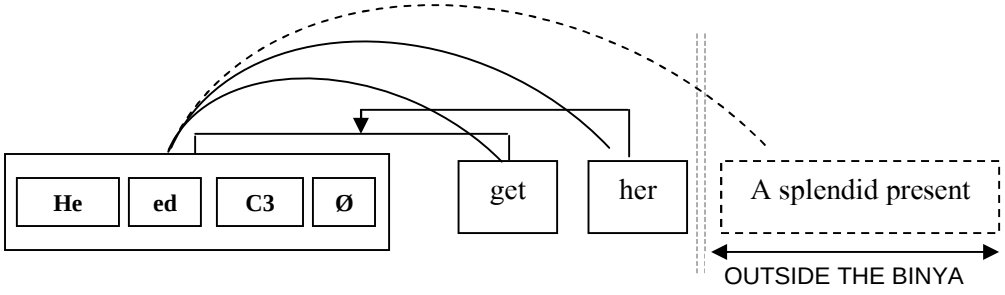


Figure 4.48

Other cases of ambiguities derive from the fact that one constituent of the clause may have more than one function as in "*They found me a good worker*, where the functions of the last two constituents can vary, creating two different meanings." (Kies 1995). To clarify the difference between the two possible clauses, Kies (1995) suggests a linear description with a different labelling to the last position of the table, containing once a direct object and once an object complement in the following way:

Example	*They*	*found*	*me*	*a good worker.*
Function	Subject	Verb	Indirect Object	Direct Object

Figure 4.49

Example	*They*	*found*	*Me*	*a good worker.*
Function	Subject	Verb	Direct Object	Object Complement

Figure 4.50

What is interesting is that our study enables us to suggest two different 'architectures' for each type of clause in the following way:

The representation of the construction as an SVOO clause:

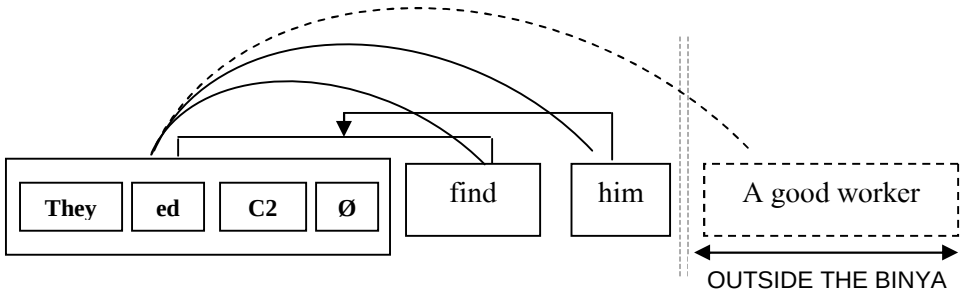


Figure 4.51

The representation of the construction as an SVOC clause:

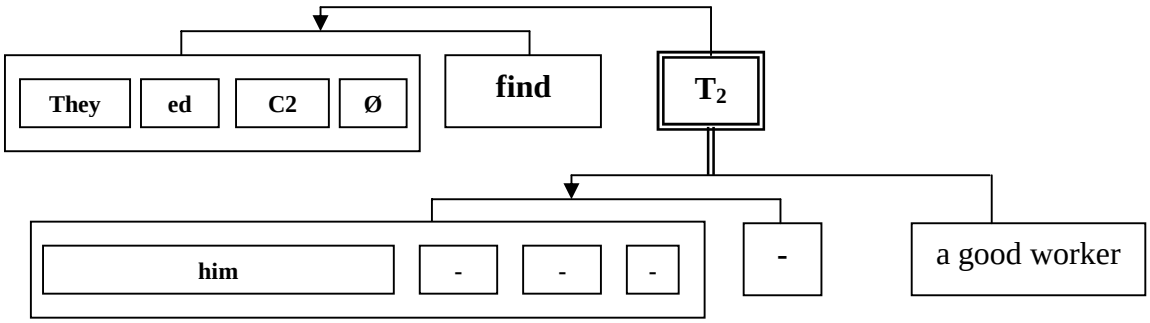


Figure 4.52

This allows us to distinguish in a formal way the two types of clauses. These are additional examples given by Quirk & al. (1988):

- *She called him a steward*

The representation of the construction as an SVOO clause:

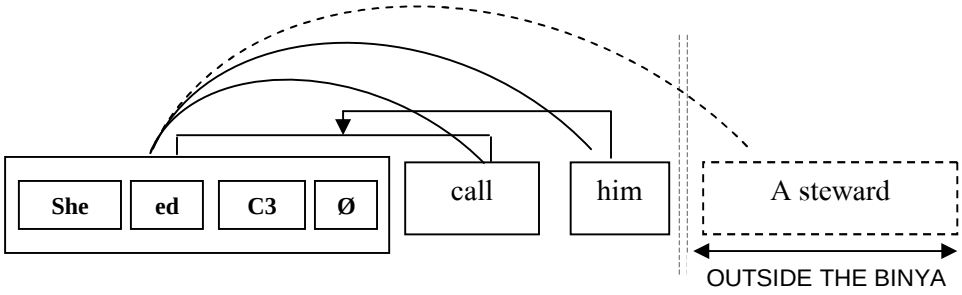


Figure 4.53

The representation of the construction as an SVOC clause:

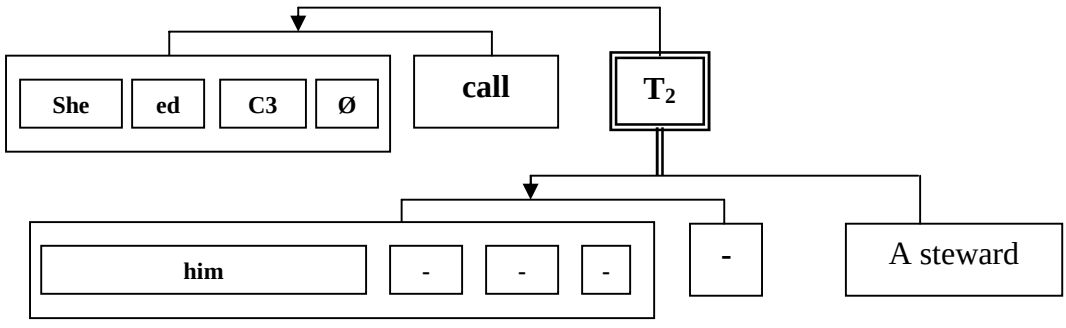


Figure 4.54

- *I found her an entertaining partner*

The representation of the construction as an SVOO clause:

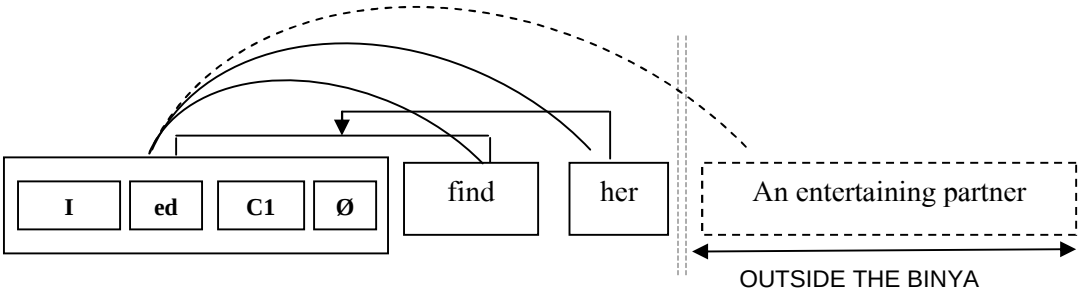


Figure 4.55

The representation of the construction as an SVOC clause:

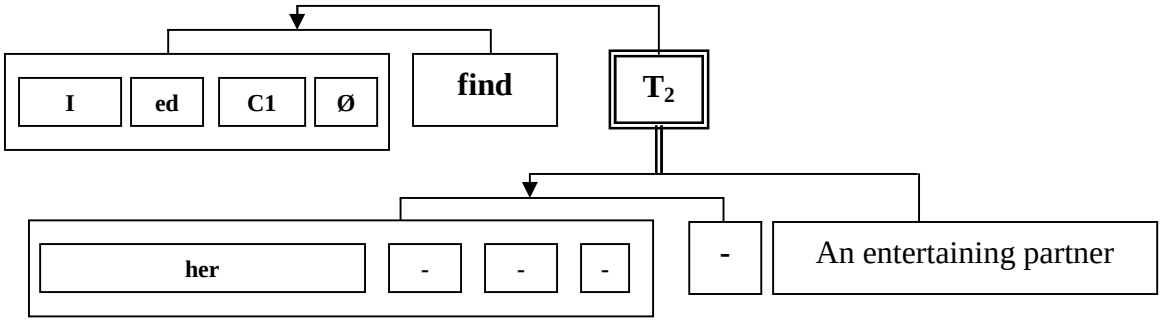


Figure 4.56

4.5. Concluding remarks

We have chosen to end this chapter with some remarks about some characteristics of the linguistic analysis that has been suggested till now, and which according to us, make it different from the analyses presented in some western linguistic theories. We have taken for this, as an example, Chomsky's theory of Government and Binding (1981).

One important grammatical concept in generative and transformational grammar is the notion of head. This notion is based on "*a principle of Universal Grammar that all phrases have heads of a related type and possible complements*"

(Cook 1989: 97). The head/complement principle applies to all four types of phrases (i.e.,: Verb Phrase, Noun Phrase, Preposition Phrase, and Adjective Phrase), since "*phrases typically consist of a head (noun, verb, adjective, preposition, and possibly others) and an array of complements determined by the lexical properties of the head"* (Chomsky 1986: 81). With the verdict that English is a head first language, each word at the beginning of the phrase is the head of the following part of it. The Verb Phrase *play the flute* (part of the sentence *I play the flute,* (example taken from Cook, 1989), for example, can be seen as having a Verb head and a complement. The Noun *Proof* is the head in: *proof of his guilt*. The preposition *with* is the head in *I played with the man*. And the adjective *upset* is the head of *He was upset of the man*.

In fact, we agree totally with the existence of some large linguistic units having a head of the same nature of the larger unit in which it occurs. Thus, it is true that the nominal *lexie*, though it has not been presented in this study, is a unit whose kernel is a noun and whose complements would function like the head and its complements, meaning that the type of the *lexie* is determined by the type of the kernel (for Chomsky head). But the notion of kernel, in our study, has the specific characteristic of being the point of departure of the operations which allow to get larger units (the derived equivalent units (i.e., the *naḍā'ir* النظائر)).

One of the most important consequences resulting from this difference[18] is that, for example, *Played the man* will not be analysed as one VP according to our patterns with *played* as a head, but we have in fact two *lexies*: *I played* and *the man* and *the man* complements at a higher level the whole construction *I played* and not only the verb *played.* Thus, what is proposed in Chomsky's syntactic model for the description of, for example, *I play the flute*, is that "*the transitive verb (V) play is closely related to the following object in the VP such as the flute describing what is played*" (Cook 1989: 97). Thus, the NP *the flute* is described as being "*a complement in the V' played the flute – or a sentence. Hence the x-bar structure of the phrase needs to include one level at which the close relationship between heads and complements can be captured. This is expressed as: X' → X complements or X' → complements X.*" (Ibid.)

To understand more the point discussed here, let us examine how the sentence: *The detective confronted Philby by the evidence* (Ibid.: 95) would be analyzed applying Chomsky's linguistic model (1981):

[18] There are other differences that we will not mention here: for example, *With a stick*, *On the boat* are considered to be prepositional phrases whose head is a preposition. But, if we have to follow the pattern proposed for the Arabic language by Hadj-Salah (1979), we would rather say that these are in fact nominal *lexies* with a kernel: *a stick*, *the boat* and *with* and *on* are prepositions functioning as additions with regard to the kernel like the *ḥurūf al-ǧarr* (حروف الجر) in Arabic.

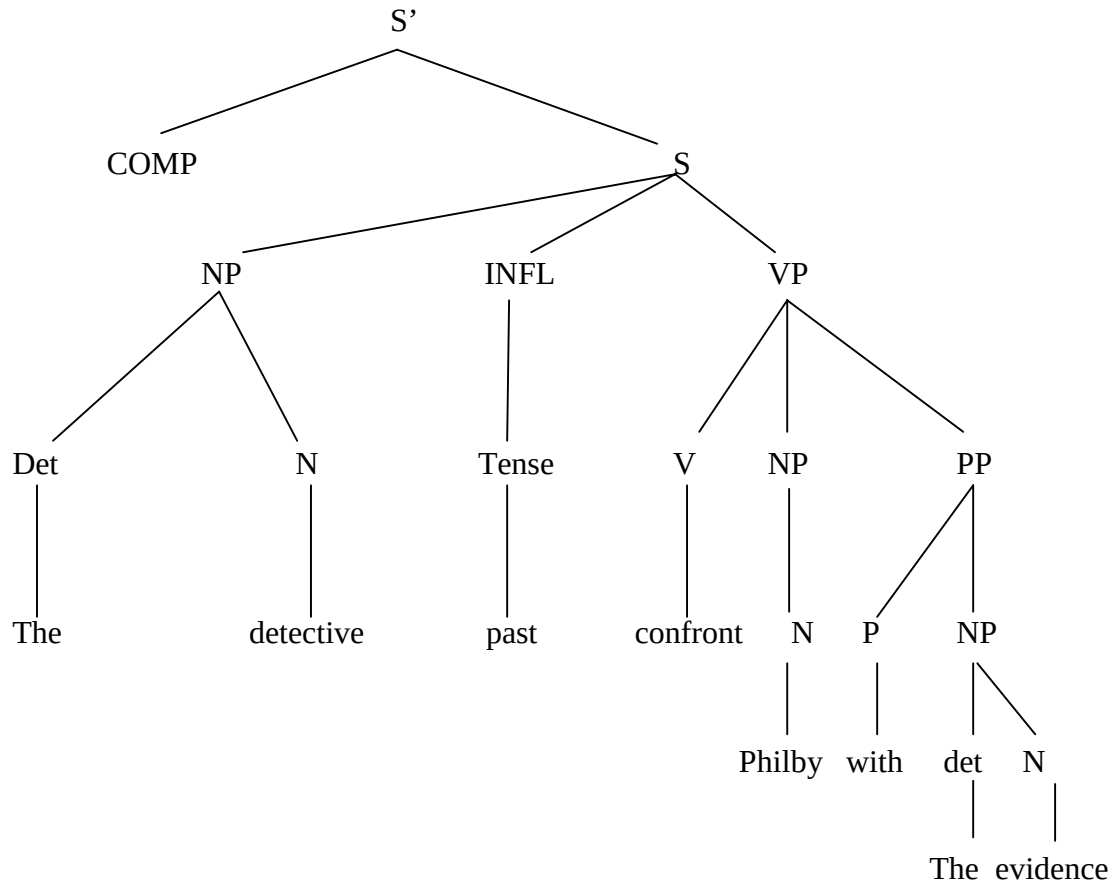


Figure 4.57

As we can see *the evidence* is part of the verb phrase *confront Philby with the evidence*. While according to our pattern based on governors and governed terms it would rather be a third governed term introduced by a preposition *with*, since *confront* is a transitive verb: it is monotransitive as in *The hardships that would confront the settlers were blissfully unknown when they started out* (example taken from Microsoft Encarta 2009) or ditransitive as in the treated example, the second object being introduced by a preposition as the following figure shows us:

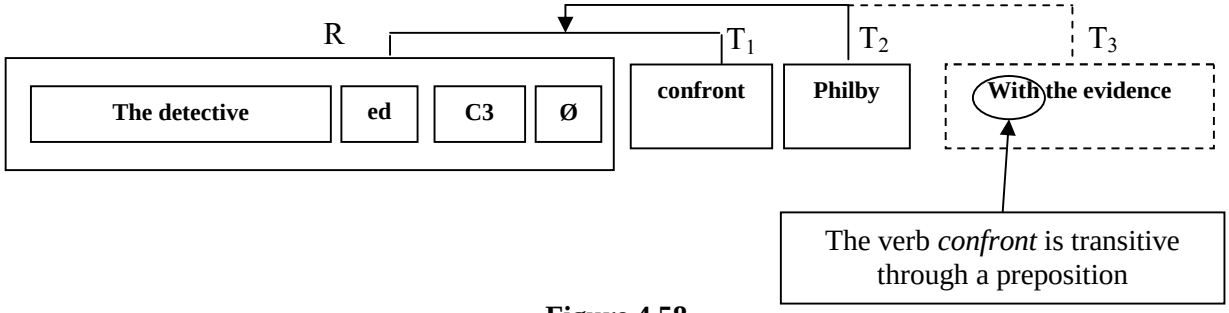


Figure 4.58

Our proof for suggesting such an analysis is the passive: *with the evidence* takes the position of T2 while the content of T2 becomes subject:

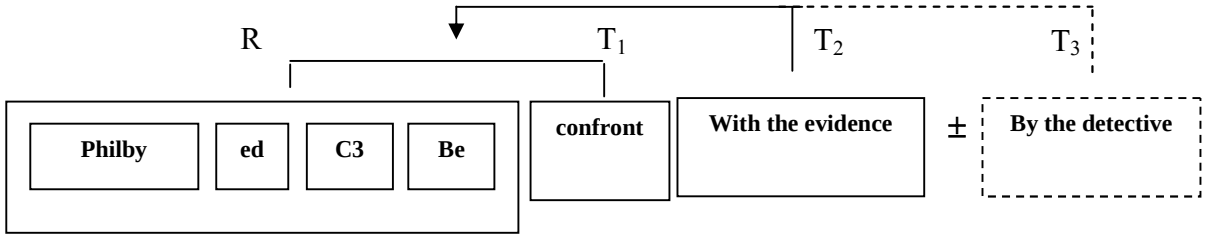
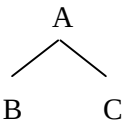


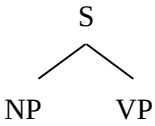
Figure 4.59

We can also represent the sentence *The detective confronted Philby by the evidence* by the following tree diagram[19]:

[19] This is comparable to the tree diagram of the kind



based on the representation of the "*structural relationships of the sentence through the concept 'consist of'*" (Cook 1989: 86). The most known representation is the Phrase Structure representing the sentence in the following way:



representing the sentence as "a hierarchy that proceeds from the largest constituent in the sentence downwards, each constituent successively consisting of other constituents, until only single items are left" (Ibid.: 87). For example, the phrase structure of *the baby likes the toy* is:

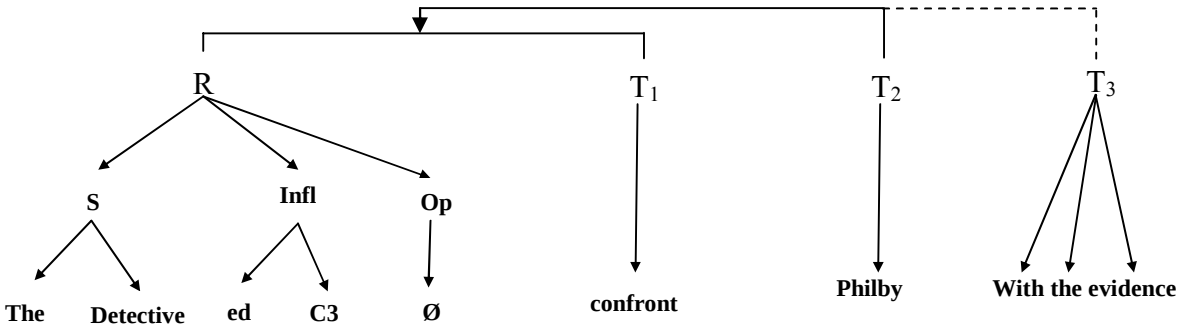


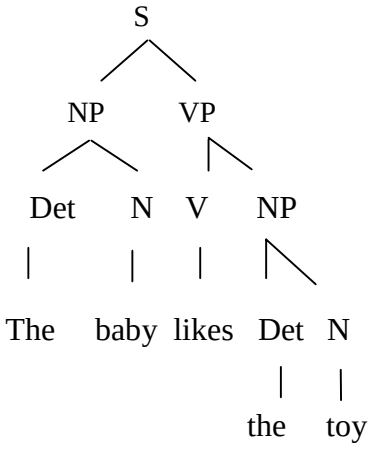
Figure 4.60

This representation is interesting because it shows us perhaps what characterises most importantly the suggested analysis. Chomsky, for example, has chosen to represent the sentence through a division into an NP and VP instead of NP V NP and for Cook (1989: 89):

> the reason for preferring a two-way split between NP and VP over a three-way split between NP, V, and VP is that the relationship between the subject NP and the verb is different from that between the object NP and the verb; for example, subjects and verbs agree in number but objects and verbs do not.".

Cook *adds that :*

> "Chomsky points out that the NP VP division is empirical, therefore controversial, but it appears to be well supported by cross-linguistic evidence of varied types (Chomsky 1986: 59). Indeed, he claims that children could not learn the NP VP division from positive evidence, and so it must be innate (Cook 1989: 89).



(cf. Ibid.: 88).

This means that in a sentence like: *The detective confronted Philby by the evidence*, '*The detective'*, '*Philby'*, '*confront'*, '*with the evidence'* belong in fact to the same level of syntactic hierarchy and not as proposed by Chomsky (1970). To understand what we mean by the same syntactic hierarchy, we can give the following example:

The students want [*Bill to visit Paris*]

The students want [*Paris to be visited by Bill*]

Thus, there is a real embedding: a similar structure in a position of a higher level.

[R] [T1] [T2= R' T1' T2']

When we are positioned at the same level of hierarchy without embedding, passivization allows the object to become the subject in the main structure as in:

(i) [The man] [saw] [the woman]

(ii) [The woman] [was seen] [by the man]

For Chomsky, in (i) *see* is the head of VP, thus: VP $\rightarrow$ V NP, while in (ii) the VP is *seen.*

Another difference which characterises our analysis is that, for example, *see* in *she sees the man* is T_1: *she sees* is a verbal *lexie*, while *the man* is a nominal lexie. Chomsky would rather describe *the man* as part of the VP: *sees the man* and *she* as part of the NP of the S $\rightarrow$ NP VP. *sees* is described as being the head of the VP *sees the man,* while *man* is the head of an embedded NP in the VP. This is an important difference because the intermediate level that we suggest between (*the man saw the*

woman) and (*the man*) (*saw*) (*the woman*) is [*the man INFL Operator*][*see*][*the woman*], instead of Chomsky's: (*the man*) (*saw the woman*) and which is, as we have seen above, based on the notion of Head: *saw* / *man.*

We have pointed out these differences with more or less conviction because after all the goal of Chomsky is the formalisation of grammar rules by trying to go beyond the syntactic and lexical specificities by proposing some generalizing rules. Thus, in stating the English is head first, I think that Chomsky was concerned with the generalisation trying to bring forward the same structure representation as much as possible. We can give the example of NPs to which are given "*the same two-bar level structure, even if specifiers and complements are not actually present*" (Cook 1989: 100) and the fact that "*P comes before NP in a PP on the train and that V comes before NP in the VP liked whisky, are covered by the generalization that heads comes before complements in English*" (Ibid.: 102).

Conclusion

The study of the complex verb phrase in this chapter allowed us to check the adequacy of the linguistic patterns suggested in the preceding chapter before validating them by the computing application that will be proposed in the last chapter.

Chapter 5

▪ TOWARDS A PEDAGOGICAL APPLICATION SCHEME TESTER:

A Computer Application for the Learning /Teaching of English Tense Forms of the Primary Pattern

Introduction

We shall now explore the practical applications for the learning and teaching of English. What we aim to present in this chapter are just recommendations about how this linguistic analysis could lead to suggest some possible aids for teaching English tense forms of the primary pattern[1]. Further studies might develop the ideas presented here or give new directions to the work.

Making the transition from the theoretical linguistic description presented in the preceding chapters to this practical application is, according to our point of view, a necessary test to validate the linguistic patterns we have suggested for the description of the English tense forms. As already mentioned in the general introduction of the study, to achieve this goal, we suggest to explore the domain of Computer Assisted Language Learning by designing a computer application to help learners analyze the English tense forms of the primary pattern and practice on them by trying to get their corresponding forms (i.e., affirmative or interrogative, active or passive, positive or negative, present or past, ordinary or perfective, progressive or non-progressive).

5.1. Objectives behind designing a computer application based on our linguistic description

In this chapter, we suggest an application in which we try to exploit the linguistic patterns of the English verb[2]. The computer application that we are going to

[1] Cf. chapter two of our work for more details about these forms.

[2] We note here that many advocate the use of CALL for theory testing (cf. Chapelle et al. 1996) and nearly all the grammar formalisms are already used in this domain to design Intelligent Computer Assisted Language Learning (ICALL) systems like Head-Driven

suggest functions with an algorithm based on our formal linguistic description of the English tense forms of the primary pattern actualized with overt subjective pronouns. We have labelled this computer application: SCHEME TESTER.

In the following section, we are going to present the structure of this console application developed under Borland Delphi 7. Delphi 7 is a visual development software with an Integrated Development Environment (IDE) which enables writing programs with a Graphical User Interface (GUI). It is "*an object-oriented, visual programming environment to develop 32-bit applications for deployment on Windows and Linux*" (Borland Software Corporation 2002: 2-1). We have chosen to use Delphi mainly because it is object-oriented, which "*means it revolves around ready-made objects*." (Ibid.: 64)[3], and it is quite easy to use because of its integrated development tool.

Our goal in developing this computer application is to validate the formal patterns we have suggested for the description of English according to the neo-khalilian linguistic model, since this application aims at simulating English tense forms' analysis on the basis of the patterns we have suggested in the preceding chapters. We suggest to schematize the link between the different parts of our study

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Phrase Structure Grammar (HPSG) (Pollard & Sag 1994), Lexical Functional Grammar (LFG) (Bresnan 1982), Government and Binding (GB) (Chomsky 1981). (cf. Heift & Schulze 2007: 30).

[3] In fact, with a minimum of manual coding "*Delphi provides a suite of Rapid Application Development (RAD) design tools, including programming wizards and application and form templates, and supports object-oriented programming with a comprehensive class library*" (Ibid.: 2-1).

in the following figure:

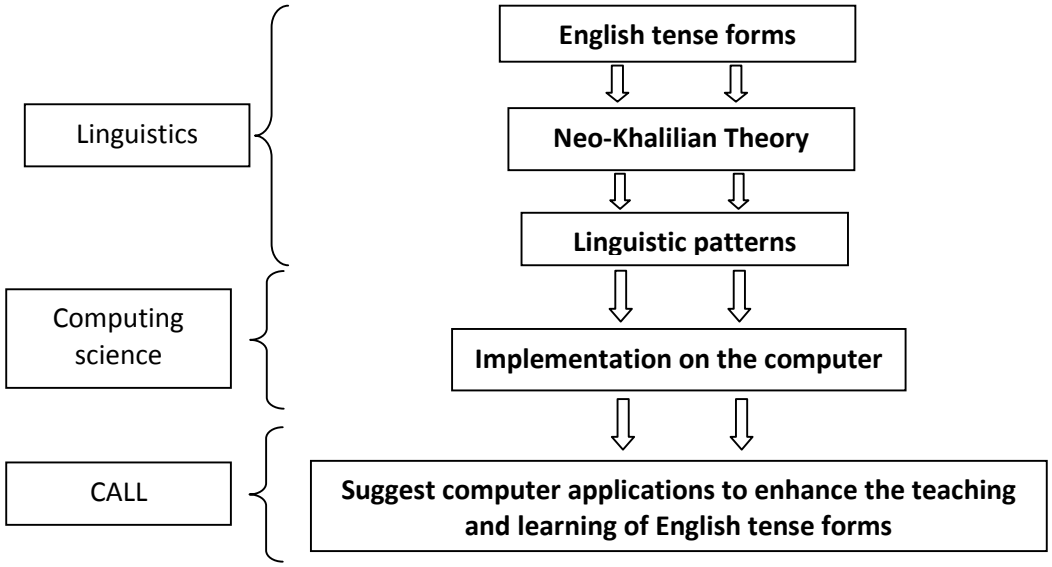


Figure 5.1

What we mean by the implementation on the computer here is to write a computer program, using an appropriate programming language, which can be translated into the language of the machine (i.e., the computer), i.e., to be compiled by it, in order to execute all the coded instructions. In fact, Computer programming means "writing instructions to a computer to follow, step by step" (Wang 2011). Thus, we have to write everything we want to be executed by the machine starting from the design of the screen display or the user interface, to the system of operations which will process the entered data arriving at the desired output. In fact, as the following figure shows us, programs usually operate on data to produce results:

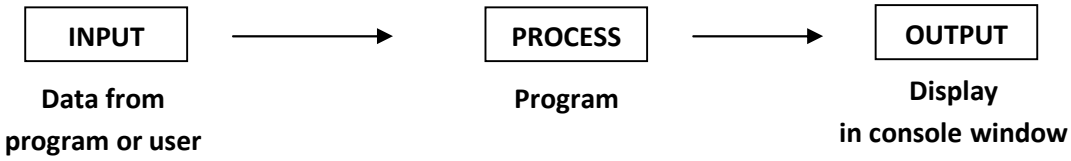


Figure 5.2: Schema of data process in a computer application

The computer application we have developed has as a purpose to supply the learner with an automated analysis of the tense form he has freely chosen to enter and a thorough practice on its grammatical form. It has three functions (namely: 'Analyse', 'Get all its corresponding forms' and 'Practice') that can be used in a self-learning process by the learner with or without the help of the teacher.

5.2. Computer implementation of the linguistic pattern of the primary pattern tense forms

To process the entered tense forms by the learner/user, we base our algorithm on the linguistic analysis presented in the preceding chapters trying to formalise the content of each position of the pattern in the following way:

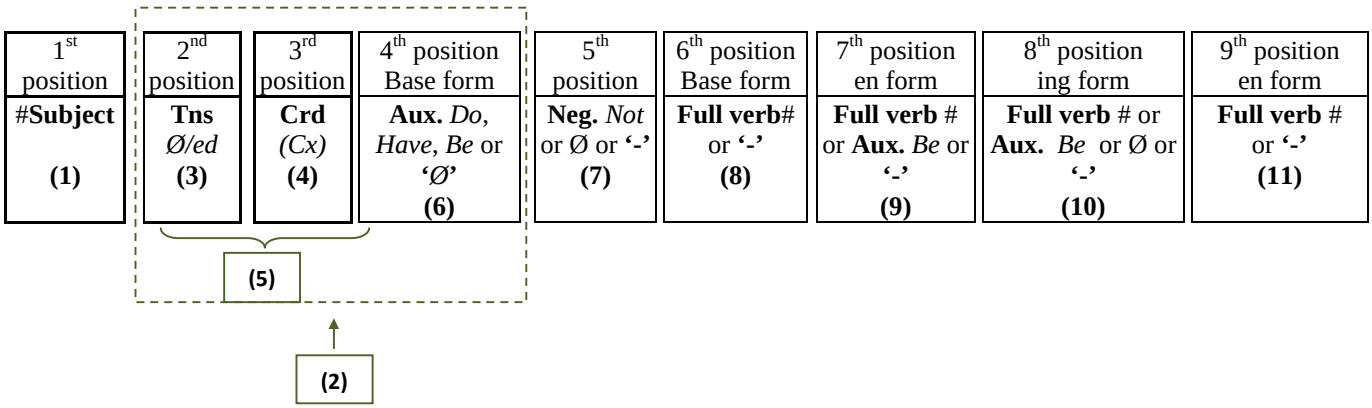


Figure 5.3: Linear representation of the Generating pattern of the English tense forms of the primary pattern

'#': Once the full verb appears in one position of the pattern, all the remaining positions that come after it are empty. Thus, the full verb is the last element in each verb construction and this is shown in the pattern by the symbol '#'.

(1) Here can appear one of the personal pronouns in the subjective case: *I*, *you*, *he*, *she*, *it*, *we*, *you*, and *they*[4]. When it is the first position which appears from left to right, the sentence is affirmative.

(2) These three positions, i.e., *Tns*, *Crd*, and that of the auxiliary coming just after (containing either *Do*, *Have*, or *Be*), can appear before the position of the subject in case the sentence is interrogative.

(3) We can have here two tenses: Ø stands for the present tense and *ed* stands for the past tense.

(4) The x in C_x stands either for: 1, 2 or 3, to give respectively C_1, C_2, and C_3 (Cf. chapter two, p. 86).

(5) The two morphological positions are affix-hopped[5] to the first verb appearing linearly just after them; thus, either one of the three auxiliaries: *Do*, *Have*, or *Be* appearing in the fourth position, or, in case the position of the auxiliary is empty, the full verb appearing in the sixth position.

(6) This is the position of the first auxiliary of the tense form. It can be empty and contain no auxiliary when the full verb appears in the sixth position; in this case, we either find the symbol 'Ø' and the fifth position (that of negation) contains '-' meaning that it is necessarily empty, or we find the auxiliary *Do* and in this case it is question of a sentence containing an ordinary non-continuous tense form. This time, it is this auxiliary which is inflicted by tense and concord and not the full verb which

[4] As we have already mentioned, at this stage of the work, we have included only the occurrence of the pronouns in the positions of subject and object.

[5] For the definition of affix-hopping, Cf. glossary.

appears in the sixth position. *Have* appears here when it is question of a sentence containing a perfect tense form. *Be* appears here when it is question of a sentence containing an ordinary (non-perfect) tense form.

(7) This is the position where the negative particle *not* can appear. It can contain the symbol '-' to mean that it is necessarily empty because the position of the first auxiliary is empty. Two elements can appear in this position when the position of the first auxiliary is full: *Ø* when the sentence is positive (in this case it is used for emphasis (Cf. chapter two, p. 83)) and *not* when the sentence is negative.

(8) This is the position where the full verb appears in its stem form. When the position of the auxiliary is empty, it is this full verb which is inflicted by tense and concord. The appearance of the full verb characterises the end of the tense form and it is symbolised here by the symbol '#'. In other words, once the full verb appears in a given position, all the remaining following positions are necessarily empty. This position is necessarily empty when the tense form in question is perfect and/or progressive and/or in the passive form (i.e., the position of the first auxiliary contains the auxiliary *Be* or *Have*).

(9) This is the position where the full verb appears in its past participle form and in this case the tense form is perfect, non progressive and in the active voice. This position can also be filled by the past participle form of the auxiliary *Be* when the tense form is perfect and continuous and/or the sentence containing it is in the passive form.

(10) This is the position where the full verb appears in its progressive form and the tense form is then in the active voice, progressive and either perfect (if the position of the first auxiliary contains the auxiliary *Have*), and ordinary (if the position of the first auxiliary contains the auxiliary *Be*). The appearance of the symbol '*Ø*' in this position means that another element can appear here, but it actually does not. It is the auxiliary *Be*, which can appear in its *-ing* form to denote the progressive aspect. The appearance of the auxiliary *Be* here means that the tense form is progressive, in the passive voice and either perfect (if the 7th position contains the auxiliary *Be*), or ordinary (if the 7th position is empty).

(11) This is the last position in the described pattern. Only a full verb can appear in it and always with an *-en* form to show that the tense form is in the passive voice.

This representation allows us to have a one hundred truthful predication from left to right of the type of the tense form that can be generated by this pattern and also the kind of the sentence containing it (*i.e.*, whether interrogative or affirmative, negative or positive, in the active or the passive voice):

a. If the position of the subject appears first, then the resulting sentence is affirmative; if, on the contrary, it is the three positions (2, 3 and 4) that come before that of the subject, then the sentence is interrogative.
b. If the fourth position contains '*Ø*', then the tense form is necessarily ordinary non continuous, and the sentence is positive and in the active voice. Besides, the sixth position contains necessarily a full verb while the seventh, the eighth and the ninth positions are necessarily empty.

c. If the fourth position contains the auxiliary *Do*, then the tense form is necessarily ordinary, non continuous, and the sentence is in the active voice. Besides, the sixth position contains necessarily a full verb, while the seventh, the eighth, and the ninth positions are necessarily empty.

d. If the fourth position contains the auxiliary *have*, then the generated tense form is perfect and it can also be either continuous or non-continuous. The sentence can also be in the active or passive voice. It can either be positive or negative. (It is the content of the other positions that will determine all these elements).

e. If the fourth position contains the auxiliary *be*, then the tense form is necessarily ordinary; the sentence containing it can be either positive or negative, and in the active or the passive voice.

f. If the fifth position contains *not*, then the resulting sentence is negative.

g. If the fifth position contains '-' or '*Ø*', then the resulting sentence is positive.

h. If the sixth position contains a full verb, then the tense form is ordinary, non continuous, and the tense form is finite[6]. The sentence containing it is in the active voice and the remaining positions are necessarily empty. If, on the contrary, it contains '-', then the sentence contains a non finite tense form and we have to see the content of the following positions to know more about the tense form or if the sentence is in the active or passive voice.

[6] Cf. the glossary for a definition of a finite verb or phrase.

i. If the seventh position contains a full verb, then the fourth position contains necessarily the auxiliary *have*; in addition, the tense form is perfect, non progressive, and the sentence is in the active voice and the eighth and the ninth positions are empty and the form of the full verb is non-finite. If, on the contrary, the seventh position contains the auxiliary *be*, then the tense is perfect but it can also be progressive either in the passive or the active form. If it contains '-', then either the full verb is in the sixth or the fourth position contains the auxiliary *be*.

j. If the eighth position contains '-', then the full verb is in the sixth or the seventh position. If it contains 'Ø', then the tense is non-progressive. If it contains a full verb, then the tense is progressive and the sentence containing it is in the active voice and the form of the full verb is non-finite and the ninth position is empty. If it contains *be*, then the tense form is progressive and the sentence containing it is in the passive voice. If it contains '-', then the full verb is in one of the other positions (i.e., the sixth, seventh, or eighth position). If it contains a full verb, then the form is in the passive voice.

We can summarize all these points in the following table:

The 4th position	The 5th position	The 6th position	The 7th position	The 8th position	The 9th position
If it contains 'Ø', then the full verb is in the sixth position, the tense form is ordinary, non-progressive and the other remaining positions are necessarily empty and the form of the full verb is finite. The statement is positive and in the active voice	If it contains 'not', then the position of the fourth position is not empty. The statement is negative	If it contains a full verb, then the tense form is ordinary, non-progressive and the other remaining positions are necessarily empty and the form of the full verb is finite. The statement is in the active voice	If it contains '-', then the full verb is in the sixth position or the fourth position contains the auxiliary *'be'*	If it contains a full verb, then the tense is progressive and the form of the full verb is non-finite and the ninth position is empty. The statement is in the active voice	If it contains '-', then the full verb is in the sixth or seventh or eighth position.
	If it contains 'Ø', then the position of the fourth position is not empty. The statement is positive		If it contains a full verb, then the tense form is non-progressive and the form of the full verb is non-finite and the eighth and ninth positions are empty. The statement is in the active voice	If it contains 'Ø', then the tense form is non-progressive	If it contains a full verb, then the form of the full verb is non-finite. The statement is in the passive voice
If it contains *have*, then the tense form is perfect and the seventh position is necessarily full		If it contains '-', then the full verb is in one of the other positions (i.e., the seventh, or the eighth, or the ninth position) and its form is non-finite		If it contains '-', then the full verb is in the sixth or the seventh position	
If it contains *be*, the tense form is ordinary and the seventh position is necessarily empty	If it contains '-', then the fourth position is necessarily empty and the statement is positive		If it contains *be*, then the tense form is progressive and/or the sentence that contains it is in the passive voice	If it contains *be*, then the tense form is progressive. The statement is in the passive voice	

Table 5.1

5.3. Description of SCHEME TESTER

As already mentioned, the suggested application is implemented in Object Pascal[7] using Delphi 7 development software and can run[8] under Windows operating system. This application, labelled SCHEME TESTER, is meant to support learners/users in analyzing tense forms actualized with overt subjective pronouns containing English tense forms of the primary patterns and practicing its transformation to all its corresponding forms. This application is made up of three modules: the ANALYSER, the TRANSFORMATOR and the EXERCISER.

Each one of these three modules functions using a processing system based on algorithms using the pattern of the primary pattern English tense forms (cf. figure 3.10, chapter three, p. 111). These algorithms allow the machine to process each input into the desired output, i.e., an analysis, a transformation or an error detection and correction. This last function is possible through a module in the application which allows the learner/user to transform tense forms by trying to write correctly all the corresponding forms of the initial entered one. The answers of the learners/users are treated and erroneous tense forms are detected and corrected. Thus, SCHEME TESTER can detect errors in the tense form entered by the learner

[7] Pascal is "*an imperative, high-level programming language. It was designed in the late 1960s, long before graphical user interfaces were in common use. It was further developed into Object Pascal (an object-oriented programming language).*" (Langfield 2003: 2)

[8] The compiler of Delphi allows translating the program written in Pascal into a machine language whose result is an executable, i.e., a file with an ".EXE" extension.

in a written form by first parsing[9] it and then matching its constituents with those of the correct form generated by the computer according to the rules we have provided in the algorithm of the application.

Let us go, in what follows, through the details of this computer application and its different functionalities by describing its user interface, the input/output processing system, the messages and windows displayed on the screen.

5.4. Description of SCHEME TESTER's user interface

DELPHI has allowed us to create the following interface for our application. The following screen allows an interactivity with the learner enabling him to enter the tense form of his choice and show the results of the action he commands through the different buttons: whether analyzing or getting the corresponding tense forms or practicing.

[9] We note here that parsers are designed mainly for the purpose of checking the grammaticality of a string, i.e., "*whether it conforms to the rules contained in the parser's grammar*." (Dodigovic 2005: 108). They are used in many computer applications like ICALL, grammar checkers, translation programs, dialogue systems and information retrieval (cf. Ibid.). However, parsers "*rarely go beyond syntax, thus focusing on form rather than on meaning* (Holland *et al.*, 1993)" (Ibid.: 109).

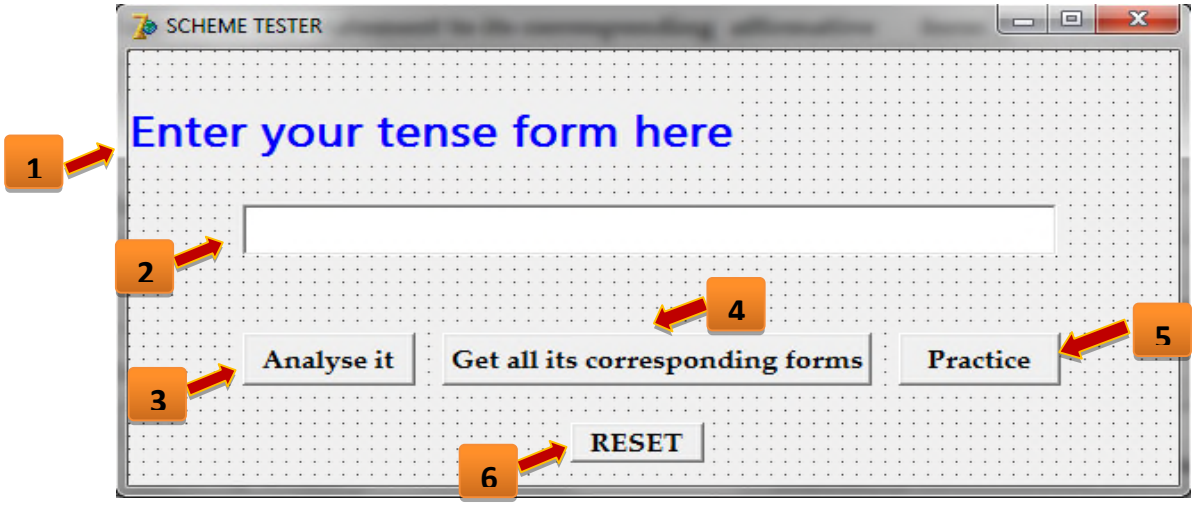


Figure 5.4: User Interface of SCHEME TESTER

The learner/user is asked to enter a tense form with the 'label' (1) (i.e., "**ENTER YOUR TENSE FORM HERE**"). He types the tense form he has chosen in the space provided in (2) by the use of the 'Edit' component. As we have already mentioned, the three functions which are suggested in SCHEME TESTER can be reached through the mouse click on the three buttons (3) and (4), (5). The button (6) allows to reset the project form and erasing what is written in the edit (2).

Thus, to sum up, our interface contains a space for writing a given tense form and three buttons by which the learner chooses the action he wants to get through a mouse click. The choice of the learner/user brings him directly to show the following windows:

1- The click on the button labelled 'ANALYSE IT' will produce the following output:

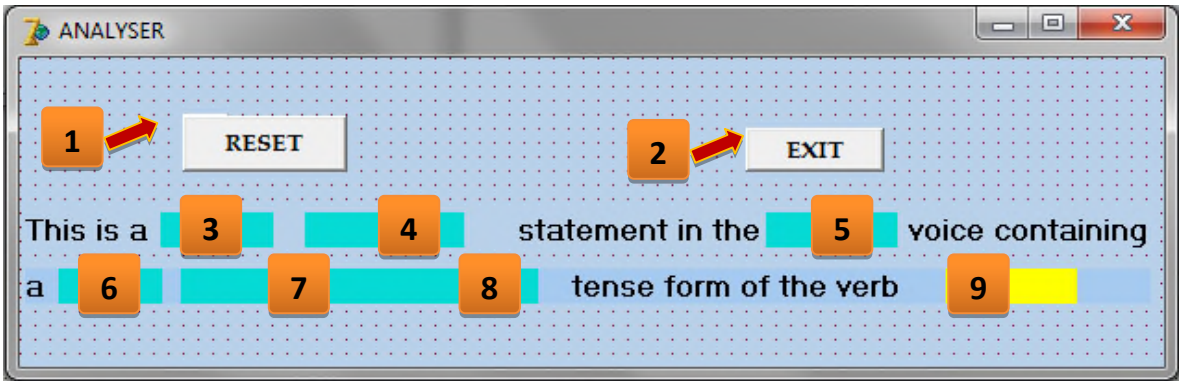


Figure 5.5: The displayed window on 'ANALYSE IT' button click

The learner/user is informed in this form of the detailed description of the tense form he has entered. That is to say, it gives the finite verb in its base form (9) and all the details concerning the type of the statement containing it (whether affirmative or interrogative (3), active or passive (5), positive or negative (3), present or past (6), ordinary or perfective (7), progressive or non-progressive (8)). The module which allows such an analysis and which we have labelled in our project the 'ANALYSER' will be described in detail in the following sections (cf. pp. 213-214).

Three buttons are suggested also in this form: one to reset this form (1) and the other to exit the form (2).

2- The click on the button labelled 'Get all its corresponding forms' will produce the following output:

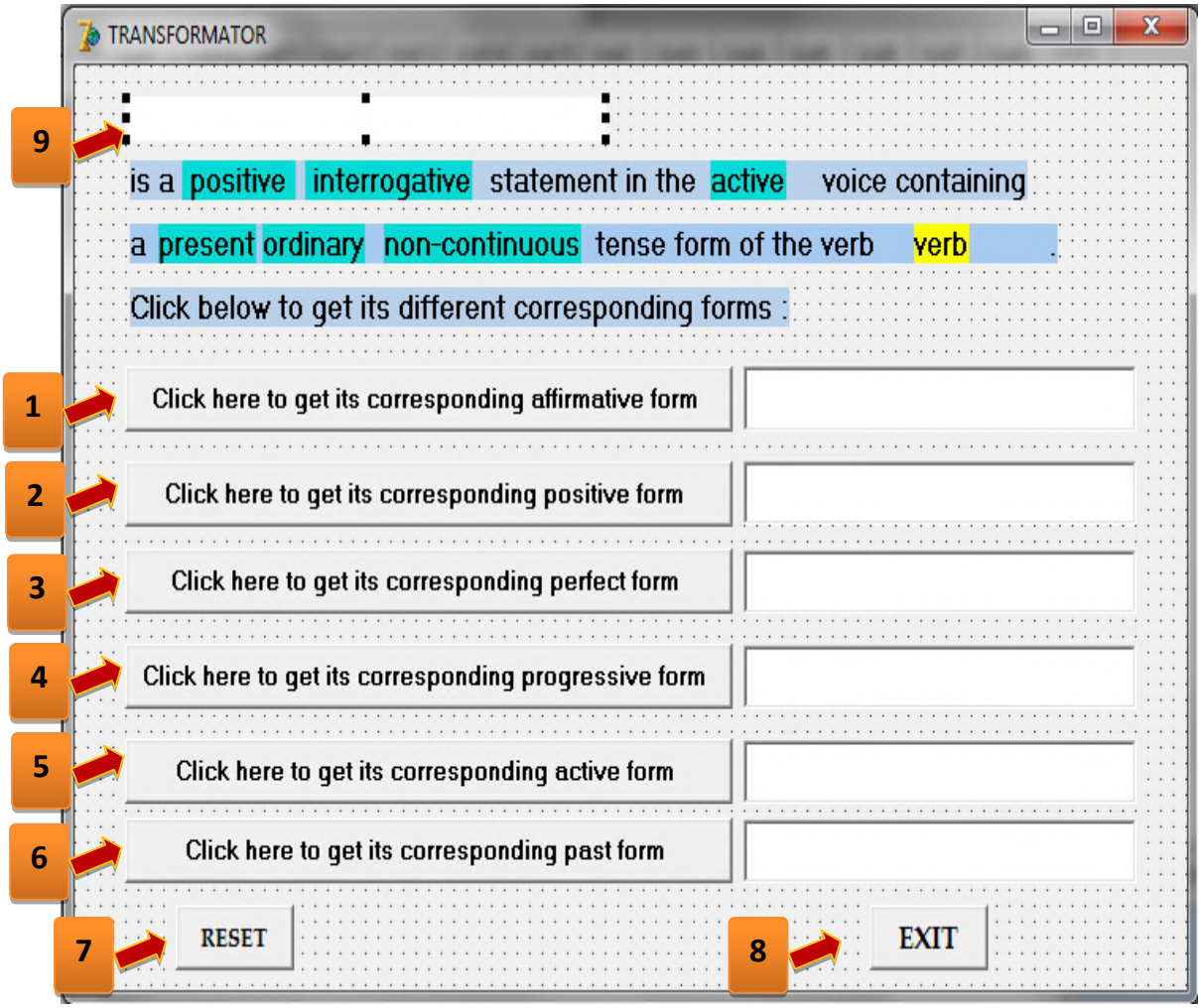


Figure 5.6: The displayed window on 'GET ALL ITS CORRESPONDING FORMS' button click

The produced window console allows, in addition to the analysis of the entered tense form, which is re-written automatically on the top of the form (9), through the mouse click on six buttons to get all its corresponding forms. If the entered tense form is affirmative, the learner/user can get the corresponding interrogative one, and vice-versa (1). If the entered tense form is positive, the learner/user can get the corresponding negative one, and vice-versa (2). If the entered tense form is ordinary, the learner/user can get the corresponding perfective one, and vice-versa (3). If the entered tense form is progressive, the

learner/user can get the corresponding non progressive one, and vice-versa (4). If the entered tense form is in the active voice, the learner/user can get the corresponding passive one, and vice-versa (5). If the entered tense form is in the present tense, the learner/user can get the corresponding past one, and vice-versa (6). Two other buttons are suggested: one to reset this form (7) and the other to exit the form (8). The module which allows such a transformation, and which we have labelled in our project the 'TRANFORMATOR', will be described in detail in the following sections (cf. pp. 215-216).

3- The click on the button labelled 'Practice' will display the following window:

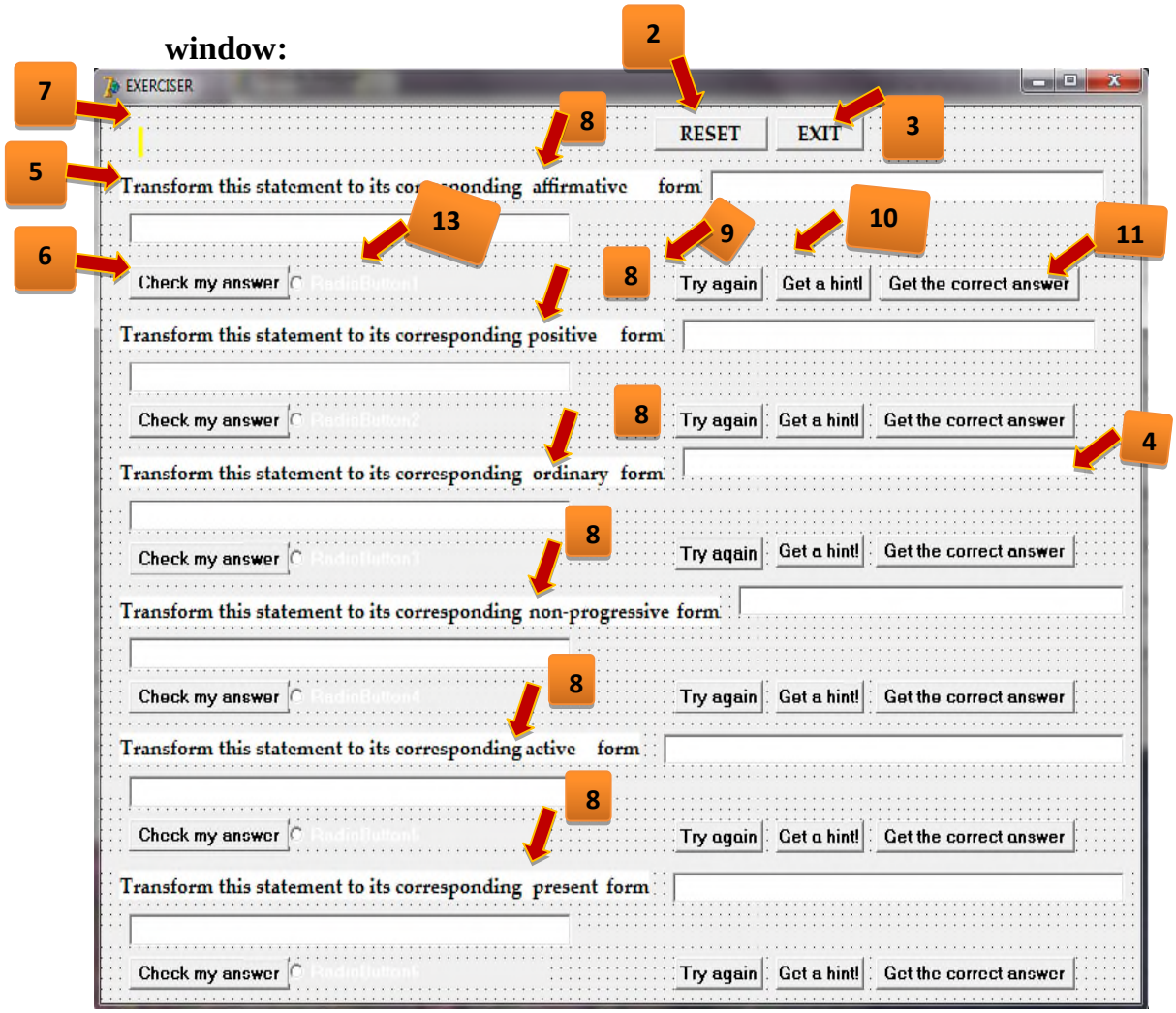


Figure 5.7: The displayed window on 'PRACTICE' button click

As we can see, the created graphic interface allows an easy manipulation of our application. The interface suggested to the learner/user allows him to practice his ability to transform the entered tense form into all its corresponding forms changing each time one of its characteristics. The learner/user is asked to transform (8) the tense form entered in the first console of the project and which is re-written automatically on the top of this console (7). A space is (5) provided to him so that he can enter his answer. A button appears to allow the learner/user to check his answer by a mouse click (6). If his answer is correct, a message (13) telling him "Your answer is correct" is highlighted in green, otherwise the message "Your answer is incorrect" is highlighted in red. In this second case, three buttons become visible:

1. **"TRY AGAIN" (9):**

   This button allows the learner/user to try again by erasing the answer he has introduced and thus enabling him to try again as many times as he wants.

2. **"GET A HINT" (10):**

   This button allows the learner/user to get some hints that can help him correcting his tense form by himself. The computer analyses the answer of the learner/user and indicates to him the correct parts of the tense form and the incorrect ones by writing the former ones in green and the latter ones in red (4).

3. **"GET THE CORRECT ANSWER" (11):**

   This button allows the learner/user to get directly the correct answer from the

machine (4) at any time he decides to click on it.

Two other buttons are suggested also in this form: one to reset this form (2) and the other to exit the form (3).

The module which allows such an analysis and which we have labelled in our project the '**EXERCISER'** will be described in detail in the following sections (cf. pp. 217-219).

We suggest now to examine the different modules of the application.

5.5. Description of the different modules of SCHEME TESTER

Before presenting in detail each module composing the system of SCHEME TESTER, we have to underline the fact that the algorithm which allows the processing of the entered data, in our case any English verb tense form of the primary pattern actualised with an overt subjective pronoun. We would like to note that the definition of the algorithm as being a step-by-step procedure which aims at solving a given problem through structured, sequenced and finite number of steps.

In fact, a direct implementation of the formal description of the different positions of the pattern suggested for the primary pattern English tense forms, allows to validate what we have advanced in page 201 of this chapter concerning the fact that the suggested linear representation of the pattern of the primary pattern tenses (cf. Figure 5.3, p. 198) leads us to a one hundred truthful predication from left to right of the type of the tense form that can be generated by this pattern and

also the type of the sentence containing it (i.e., whether interrogative or affirmative, negative or positive, in the active or the passive voice). We shall show that this algorithm is the core around which all of the three following SCHEME TESTER's modules are constructed.

5.5.1. The ANALYSER

In the ANALYSER, the structure of entered tense forms is captured by a hidden CONSOLE which analyses it in terms of the different positions of the pattern. Very roughly, this module can be described as a linguistic engine which is capable of analysing a sentence containing a tense form of the primary pattern actualised with overt subjective pronouns. It processes its different components using the algorithm of the system to decide what are the characteristic of the whole tense form from the grammatical point of view. Thus, it is question of natural language processing in a restrictive context which proceeds in a left-to-right incremental manner and is able to give exactly its grammatical description from the formal point of view.

The ANALYSER can perform operations on the entered form and analyse it (i.e., process the entered sentence) using an algorithm which implements the linguistic description of the English tense form based on the neo-khalilian theory through the following input/ output processing system:

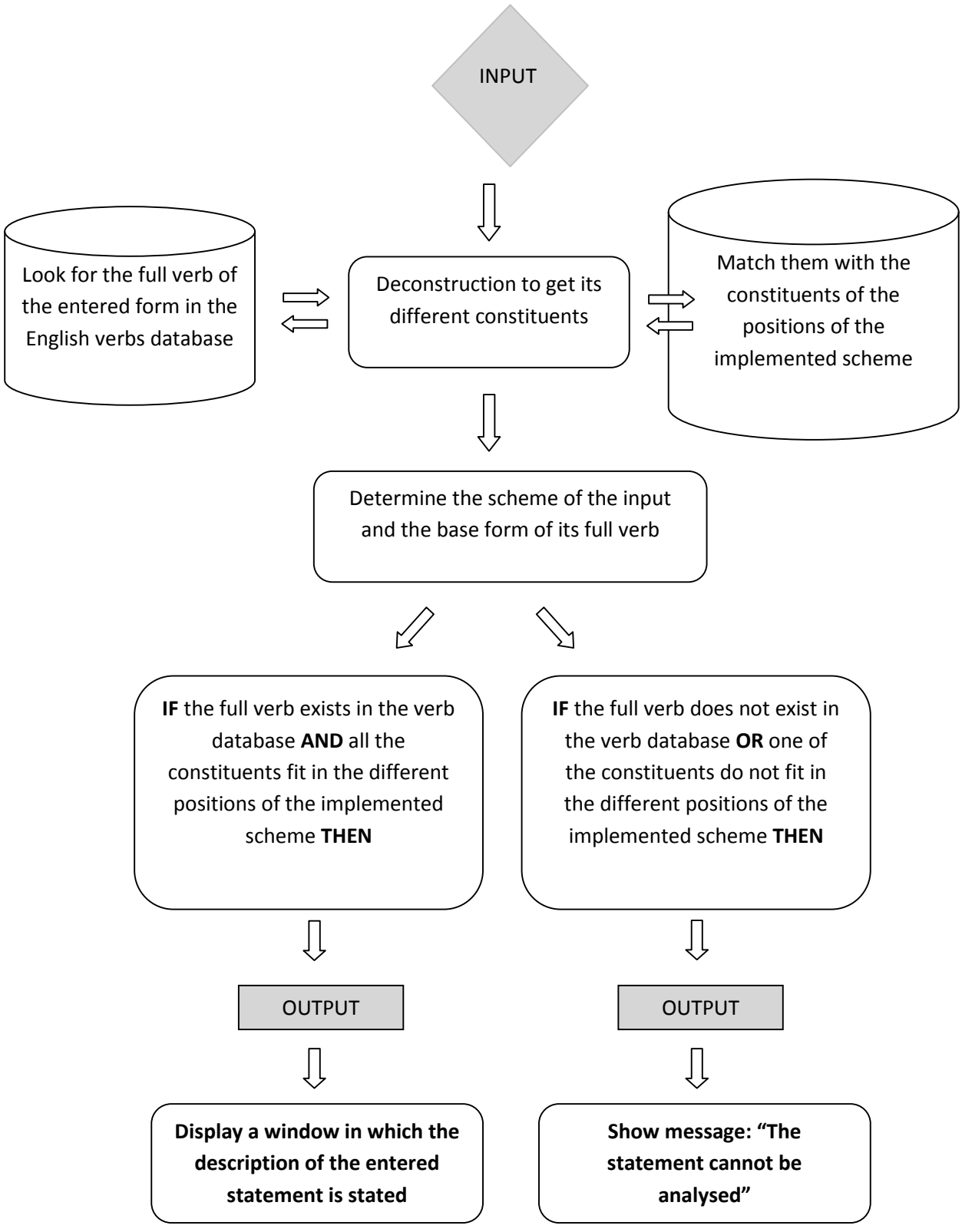


Figure 5.8: ANALYSER'S Input / Output Processing System

5.4.2. The TRANSFORMATOR

The TRANSFORMATOR intervenes after the processing made by the ANALYSER. Once the pattern of the entered tense form and its full verb are defined, the TRANSFORMATOR allows to determine the patterns of all the corresponding forms and the full verb is poured in them to get its corresponding tense forms as shown by the following input/output processing system:

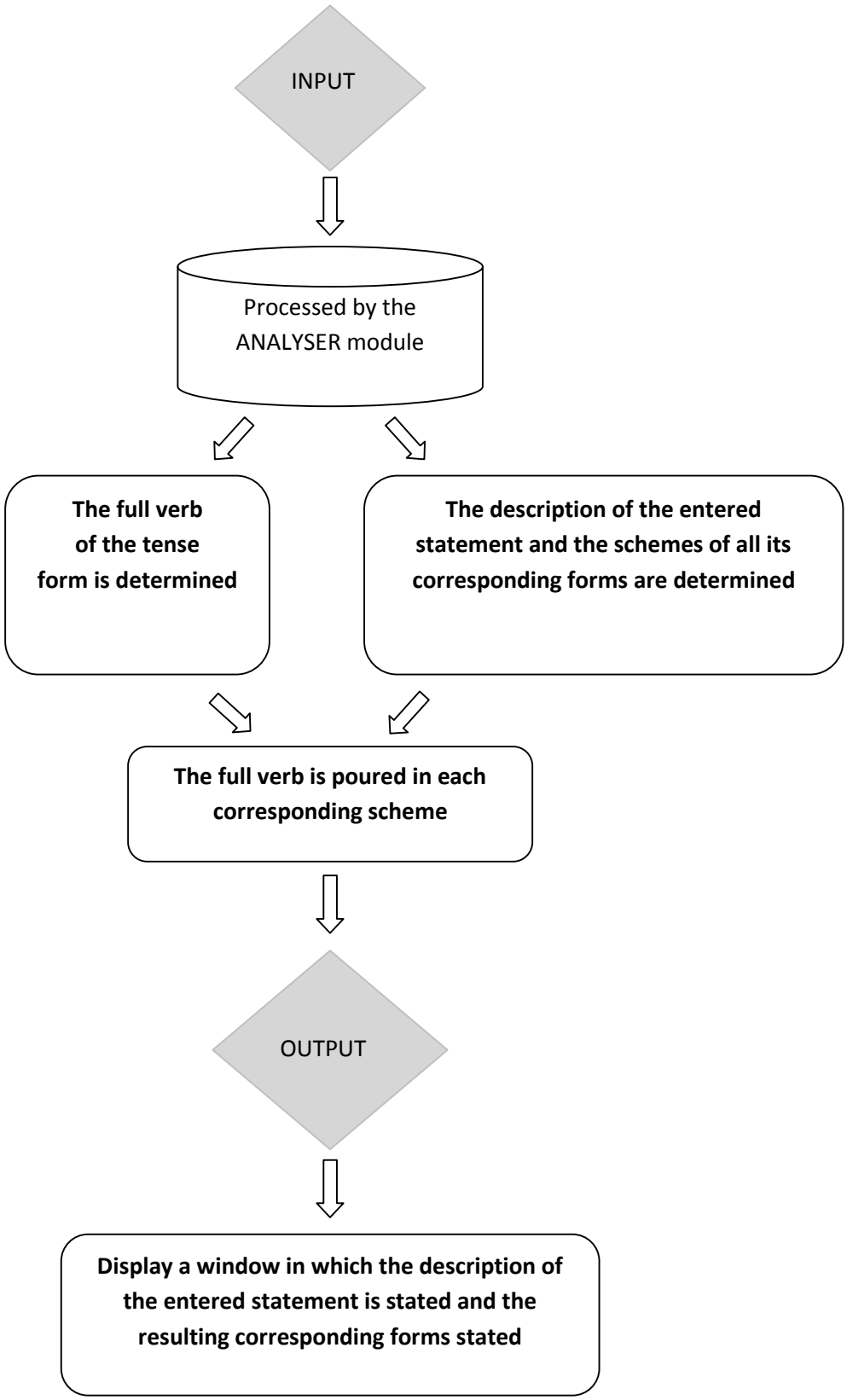


Figure 5.9: TRANSFORMATOR'S Input/Output Processing System

5.4.3. The EXERCISER

In the **EXERCISER**, the suggested interactive tool analyses immediately the grammatical well-formedness of the entered tense forms and the learner/user can be informed of the correctness of his tense form or is asked to try again. He can also get directly the correct answer or just get hints about the parts of his tense forms which are correct or not. This application is conceived as an exercise tool that can be used in the English classroom or at home. The learners/users train themselves by constructing transforming the entered tense form into its corresponding positive or negative, affirmative or interrogative, ordinary or perfect, active or passive, progressive or non progressive, present or past.

The application immediately treats the answer of the learner/user in a hidden console which decomposes it into its different components. Each one is put in a position and is compared to the content of the corresponding position of the pattern resulting from the analysis of the correct answer processed by another module in the application. This module can be designed as the 'expert module'[10] of the system.

'GET A HINT' allows the learner/user to be guided towards correcting his tense form by himself. It is question of an algorithm-based processing that captures

[10] The expert module being the part which :

> houses the language knowledge and, ideally, it is this part that can process any piece of text produced by a language learner. This is usually achieved by a parser. A parser produces a formal linguistic representation of natural language input by identifying the grammatical functions of the parts of a sentence. (Heift & Schulze 2007: 2)

the linguistic components of the tense form entered by the learner/user and assigns a position to each one of them. The content of these positions is then compared to the content of the corresponding position of the correct answer's pattern. The correct parts of his tense forms are coloured in green while the incorrect ones or those not appearing in their correct positions are coloured in red.

Let us examine with more details the properties of the **EXERCISER**, the user interface and its functionalities, noting that the most important module of the application with regard to our work is the sentence parser which uses the positions of the pattern to which resulted our linguistic analysis. It not only evaluates the correctness of the tense form entered by the learner/user and provides immediate feedback but also provides the correct answer.

The following input/output processing system explains how the system of our application functions:

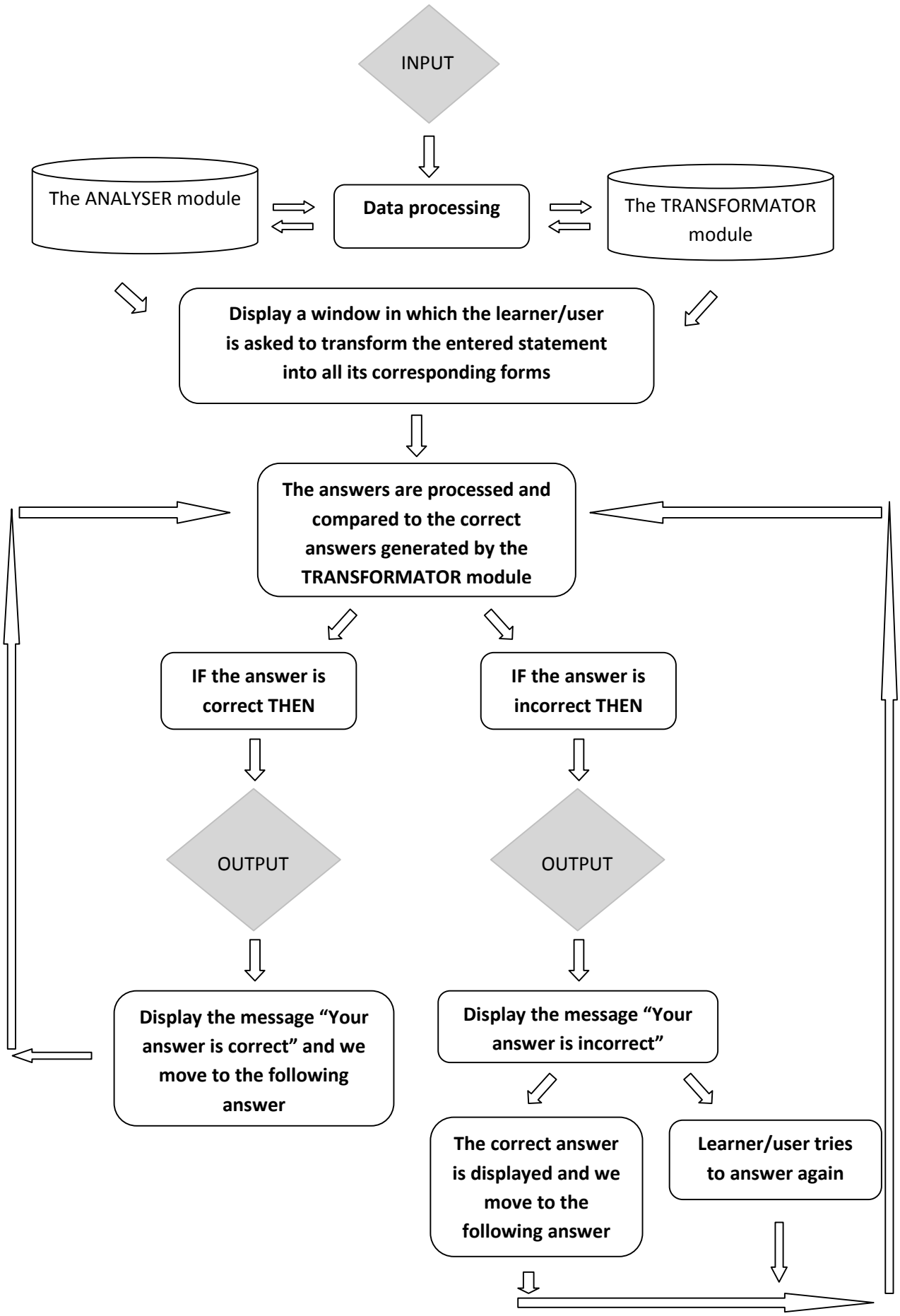


Figure 5.10: EXERCISER's Input/output Processing System

5.6. Description of displayed windows and messages through examples

The tense form "HE IS NOT GOING" is entered in the main screen:

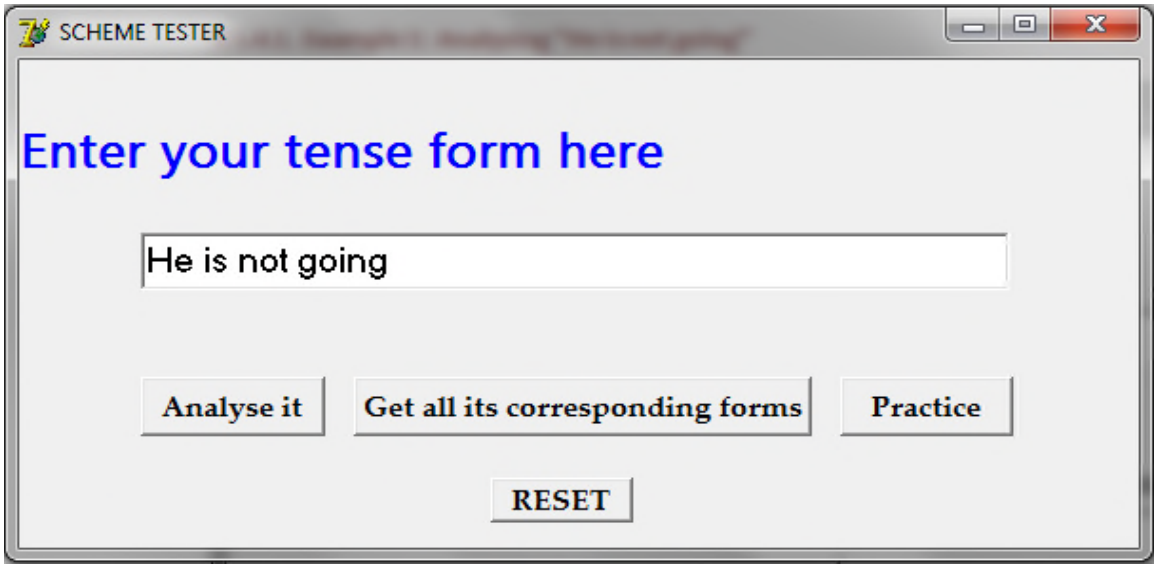


Figure 5.11

The button "ANALYSE IT" is clicked. The following window is displayed:

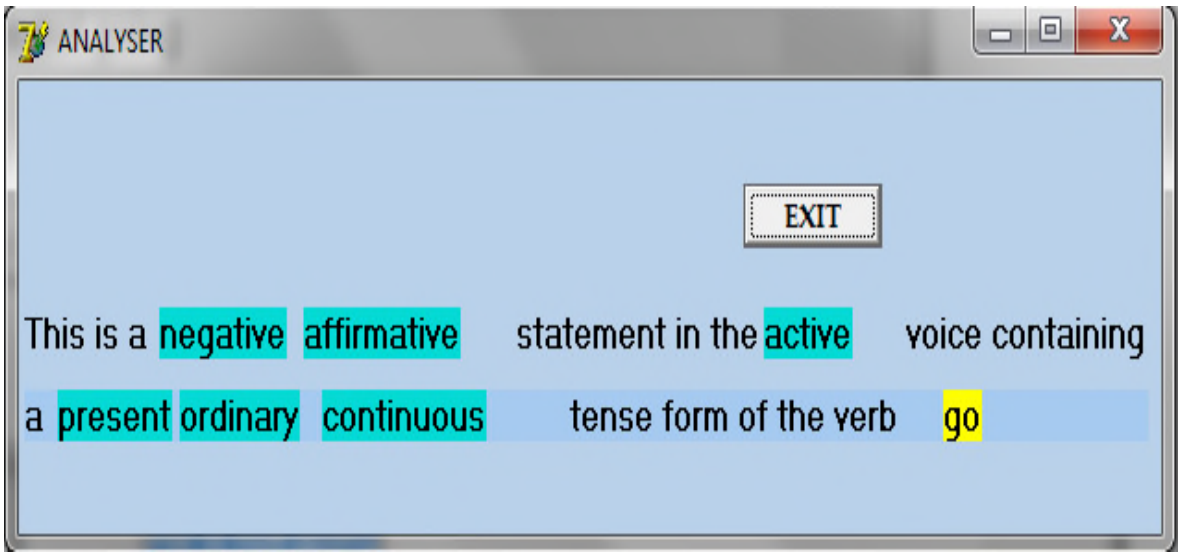


Figure 5.12

As we can see, the tense form is described as a negative affirmative tense form in the active voice containing a present ordinary continuous tense form of the verb GO. The button EXIT allows to go back to the main window of SCHEME TESTER.

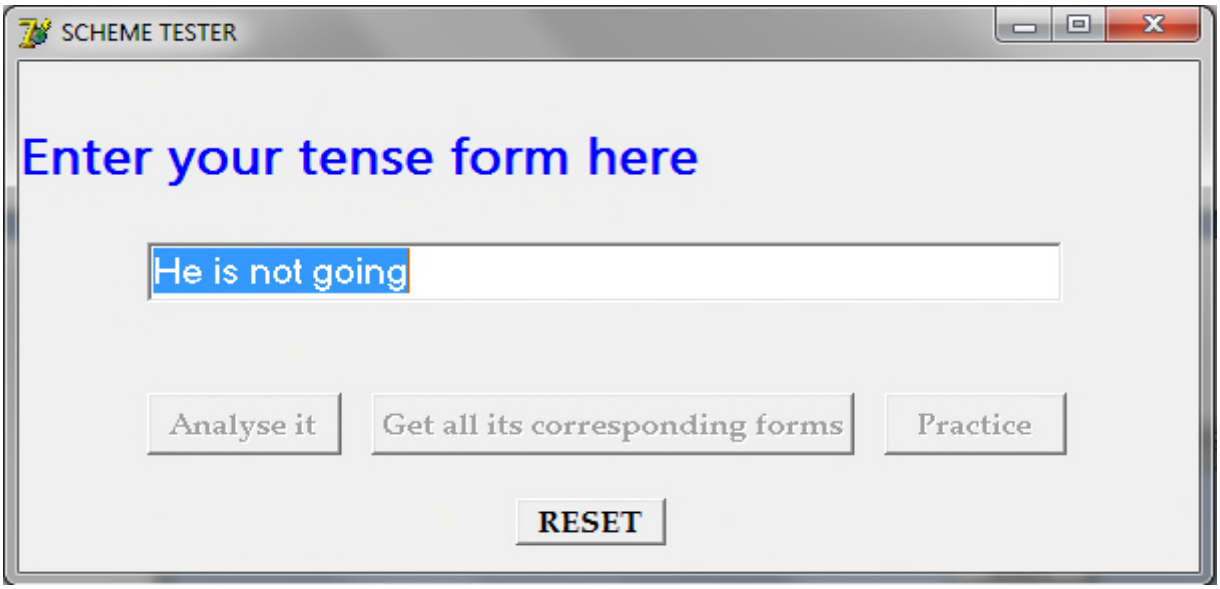


Figure 5.13

Once this form is displayed, the learner/user clicks on the button RESET to get the following window:

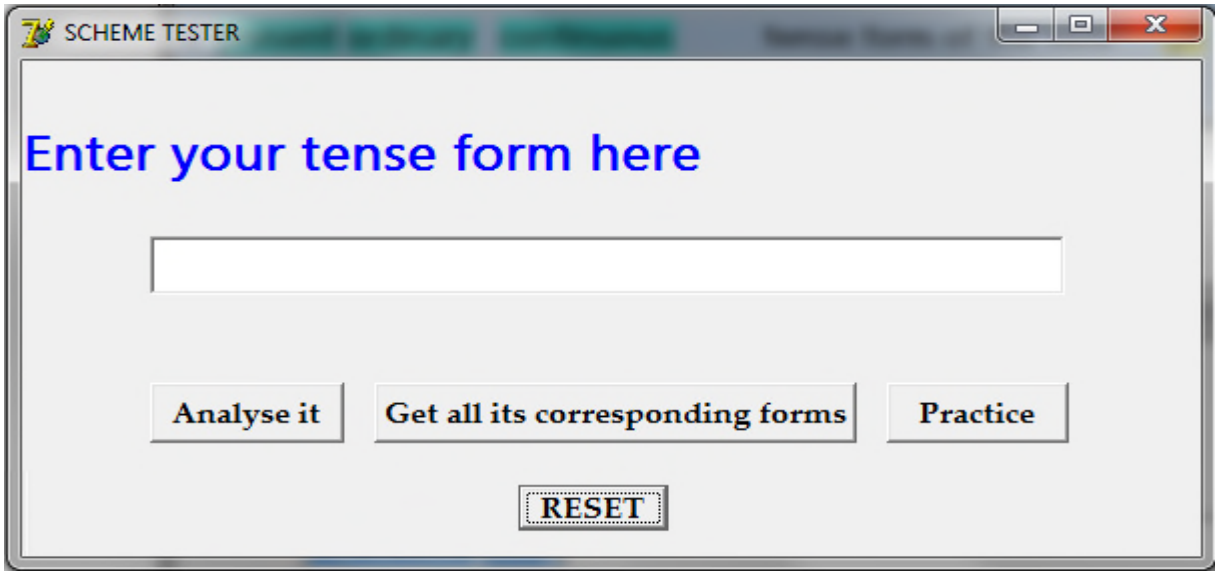


Figure 5.14

Here he can enter a new tense form. Let us see what happens in case the entered form is incorrect by composing in the provided space “he had been work”.

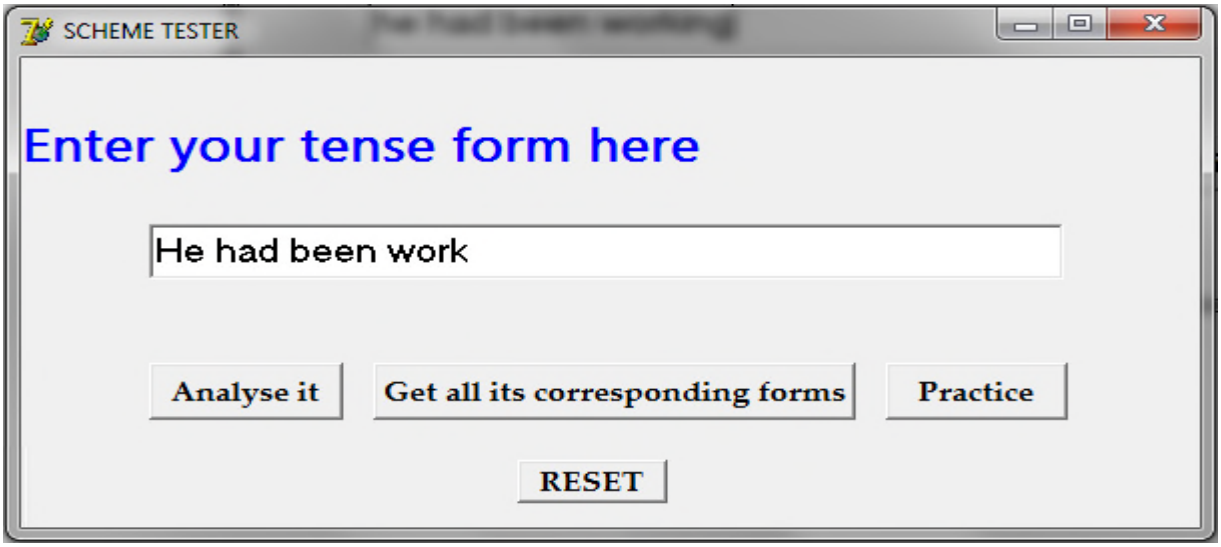


Figure 5.15

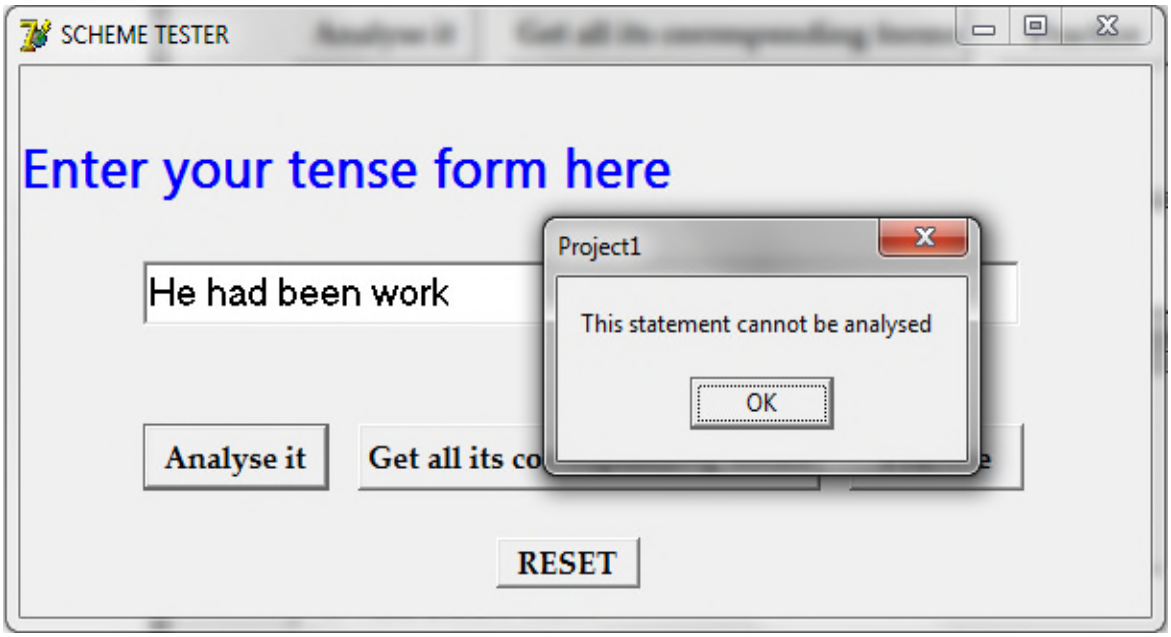


Figure 5.16

As we can notice, once the button "ANALYSE IT" is clicked, first a message box is displayed to indicate to the learner/user that "This tense form cannot be analysed" and then, if the learner/user clicks on the button OK, the tense form is coloured in red.

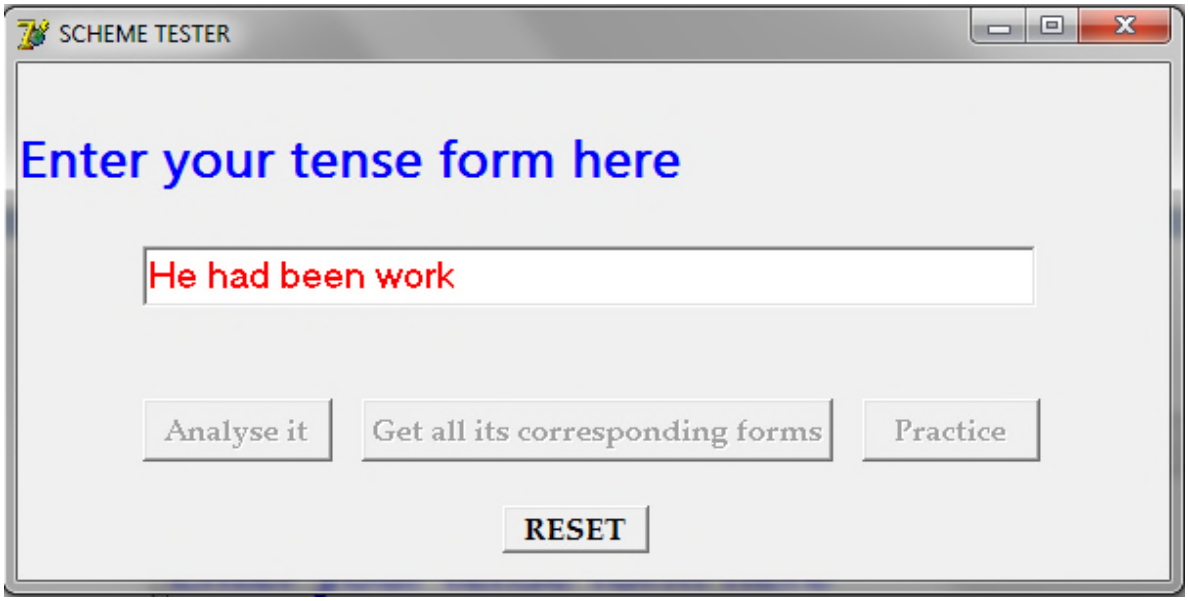


Figure 5.17

To get back to the former window, the learner/user has to close this message box and click the button RESET. The following window shows us the message box displayed by the application in case the learner/user clicks on any button before entering a tense form:

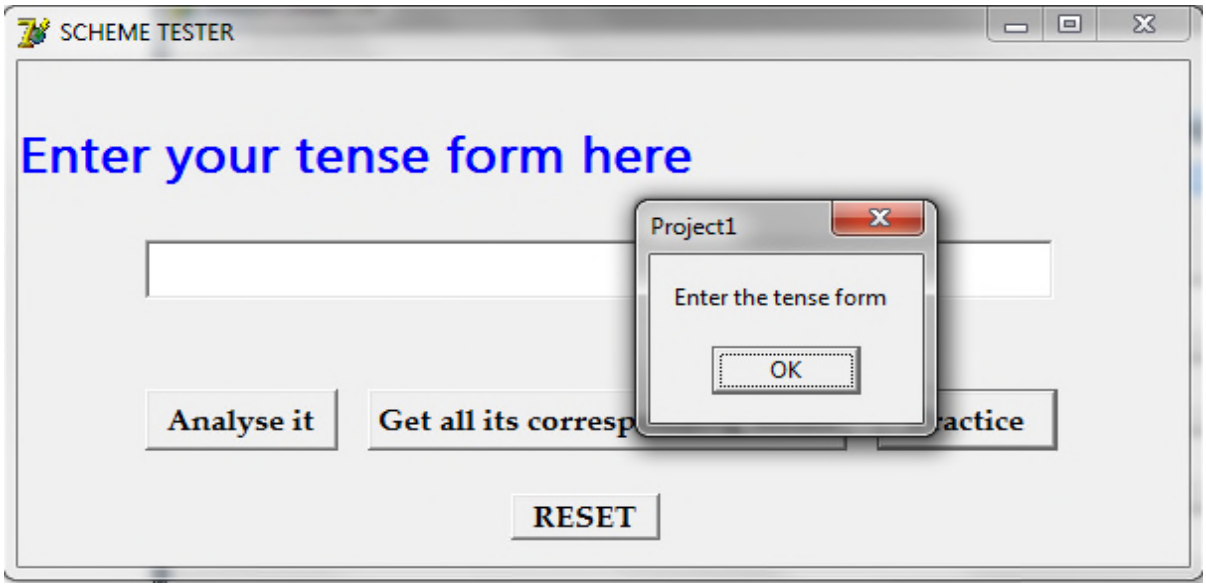


Figure 5.18

Let us now see an example for using the **TRANSFORMATOR** tool. For this the learner/user has to introduce a tense form in the same preceding way. In this example we have chosen the tense form "He had been working".

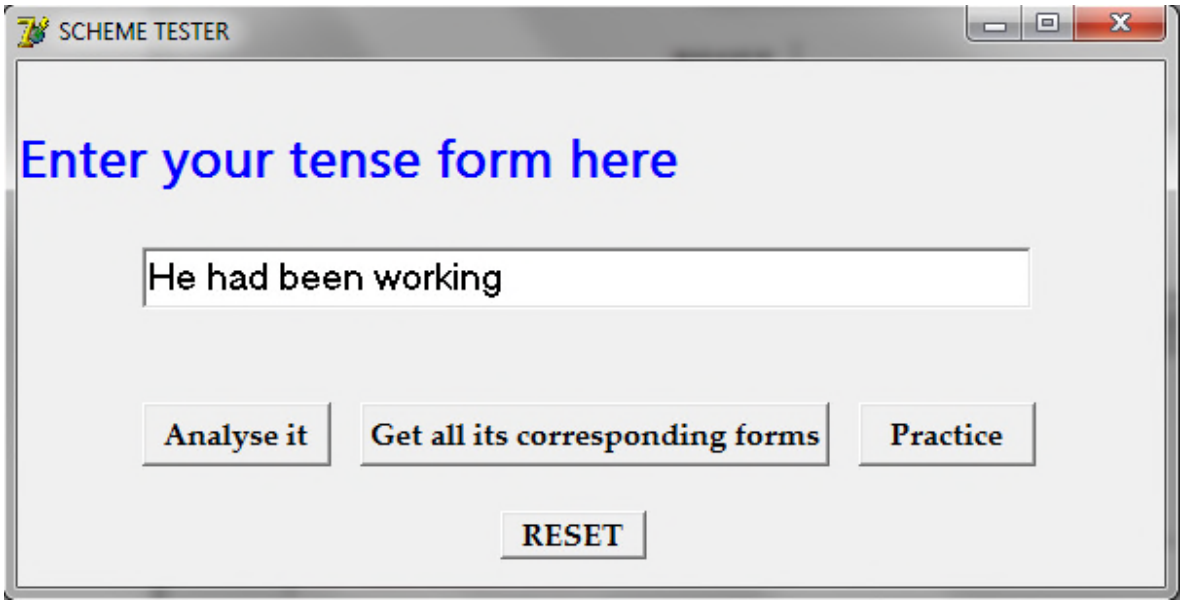


Figure 5.19

If the learner/user clicks on the button "GET ALL ITS CORRESPONDING FORMS", the following window is displayed:

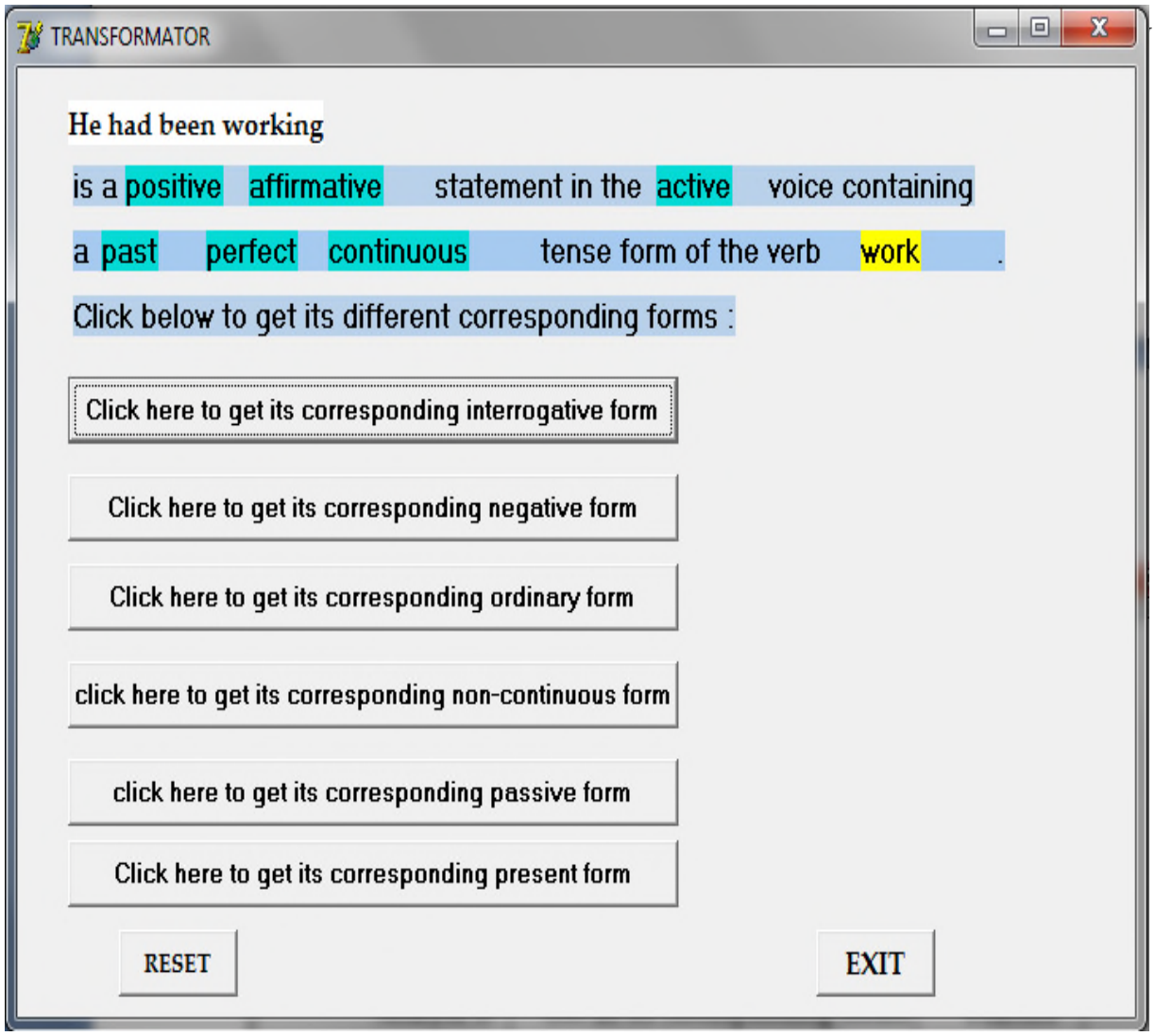


Figure 5.20

The displayed window indicates to the learner/user that the tense form he has introduced is a “positive affirmative tense form in the active voice containing a past perfect continuous tense form of the verb WORK”. Six buttons allows the learner/user to get its corresponding interrogative, negative, ordinary, non-continuous, passive and present forms as is shown below:

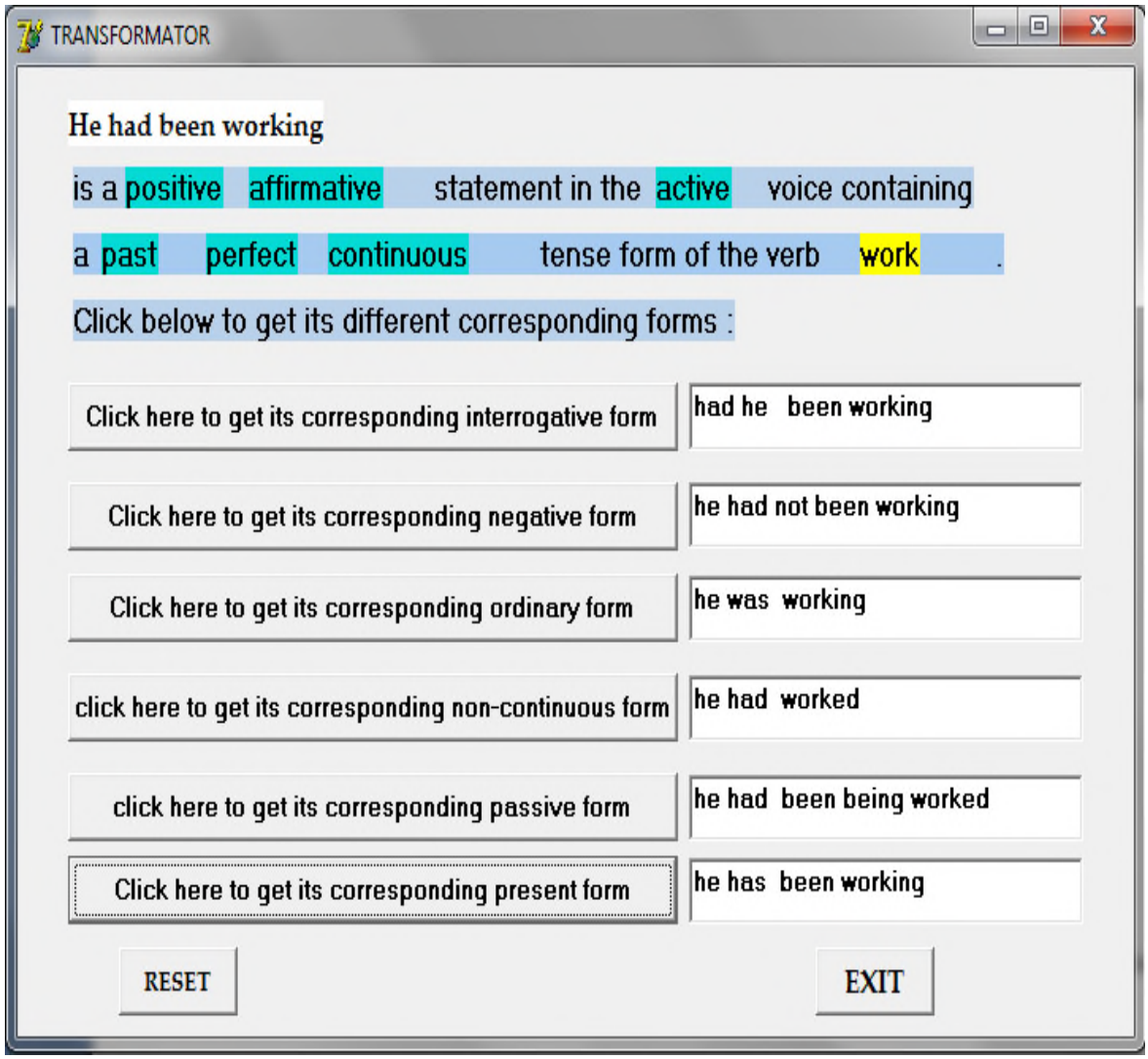


Figure 5.21

The button RESET allows to reset all the six buttons as follows:

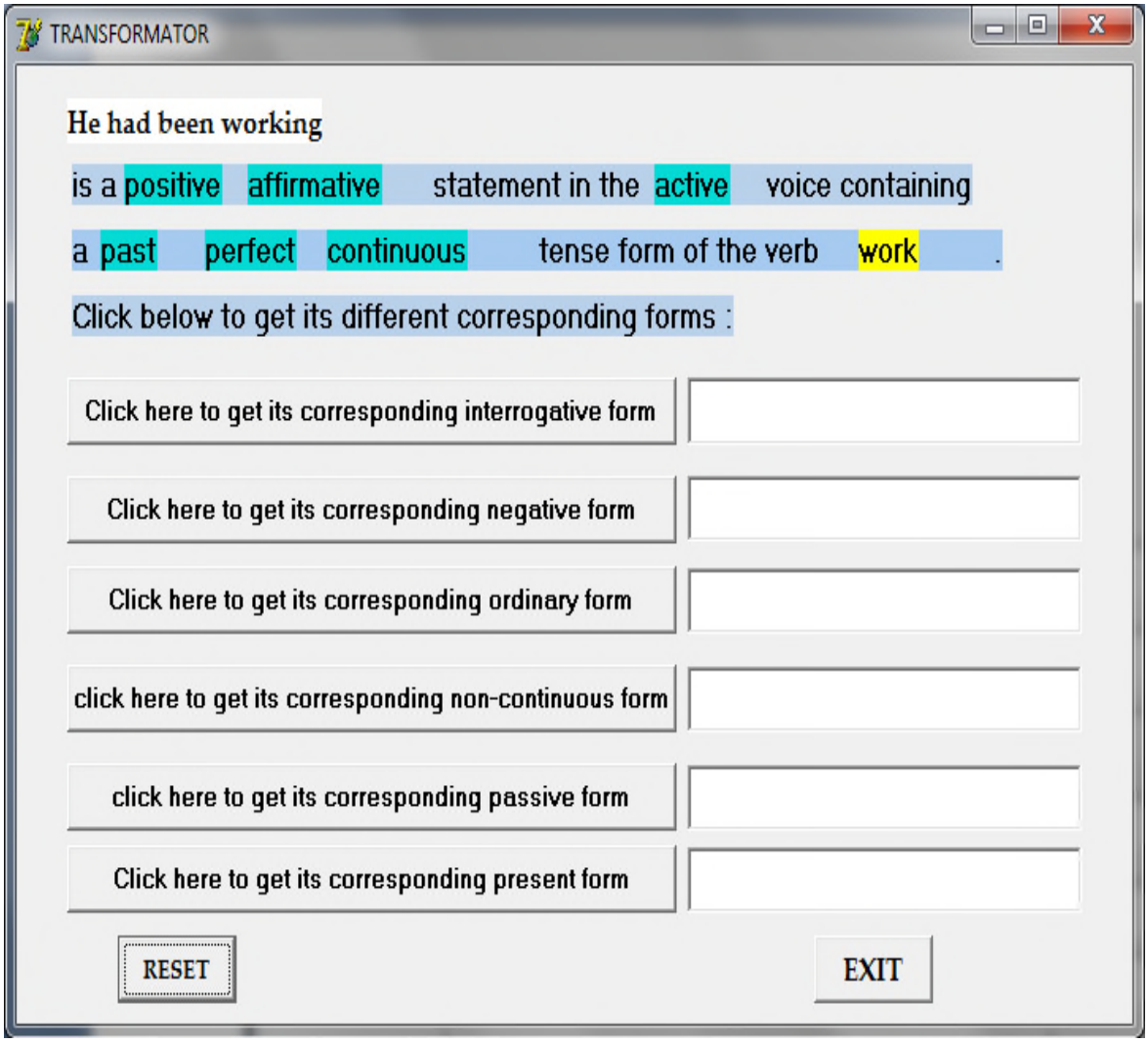


Figure 5.22

Then the learner/user can choose to click on any of the six buttons. He can then get them once again:

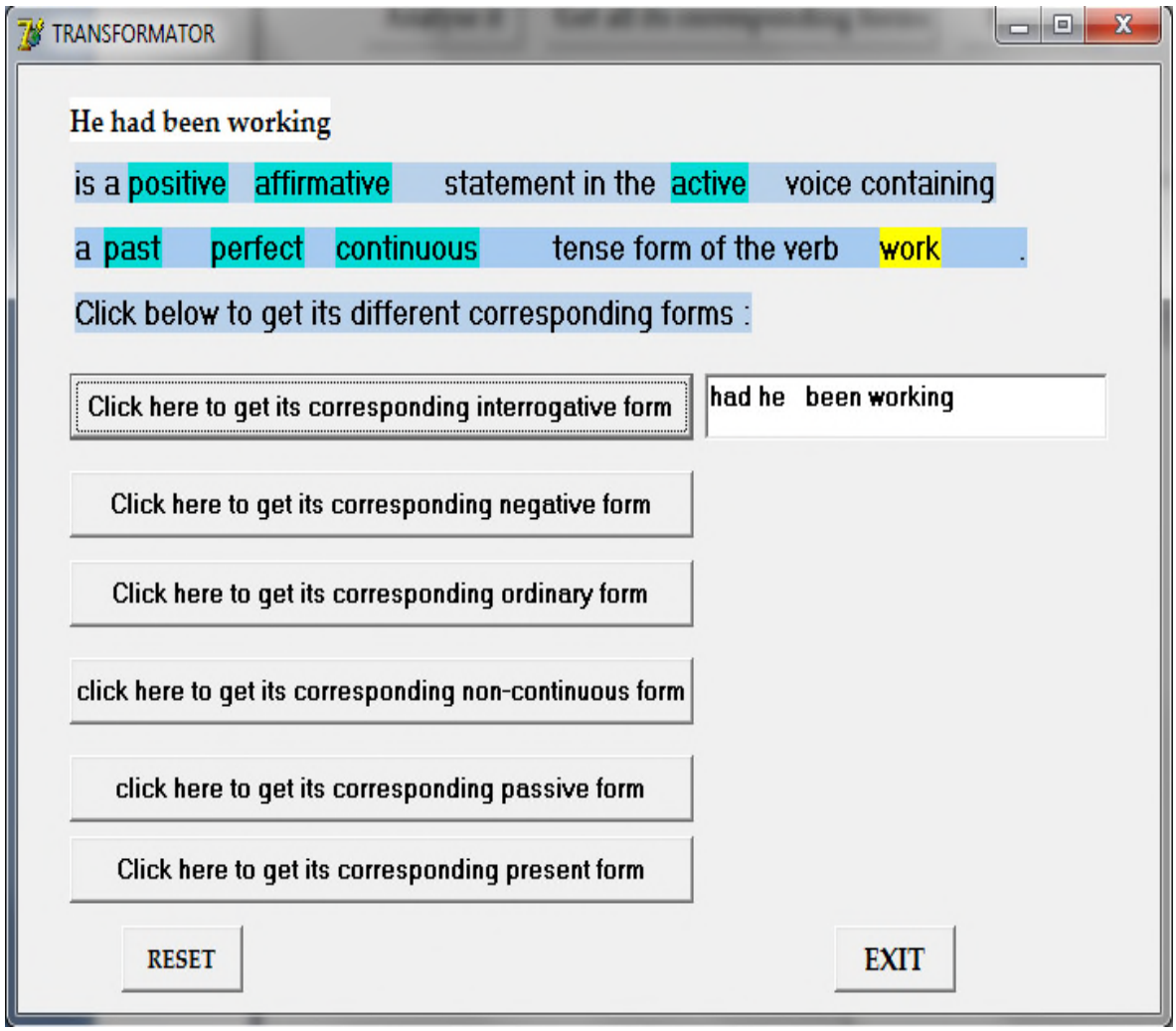


Figure 5.23

The button EXIT allows to go back to the main window of SCHEME TESTER.

We explore now the last tool proposed by SCHEME TESTER, namely the EXERCISER. For this, the learner/user starts by entering a tense form in the same preceding way and clicks on the button PRACTICE.

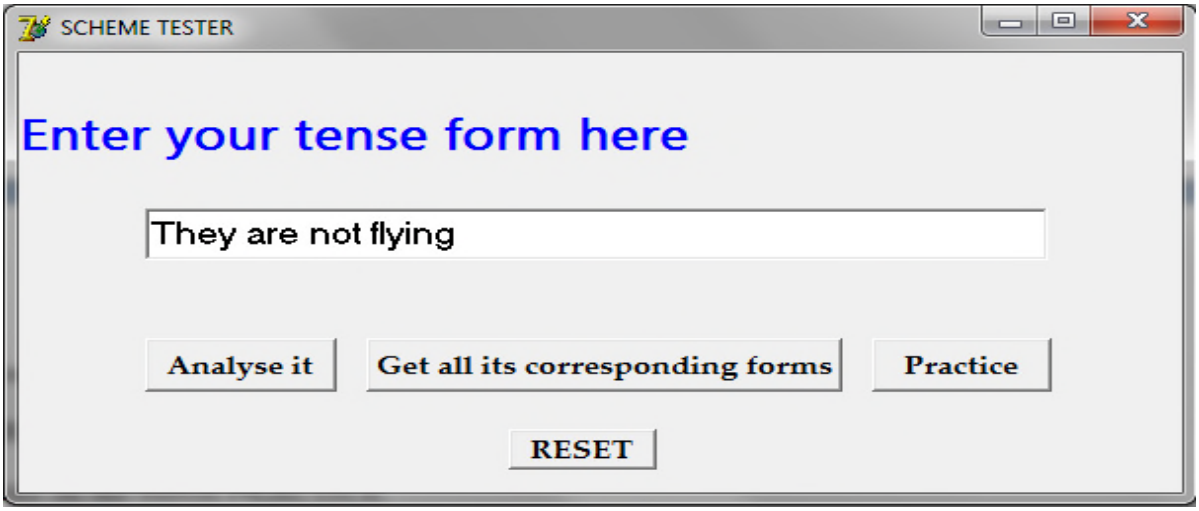


Figure 5.24

The following window appears on the computer screen:

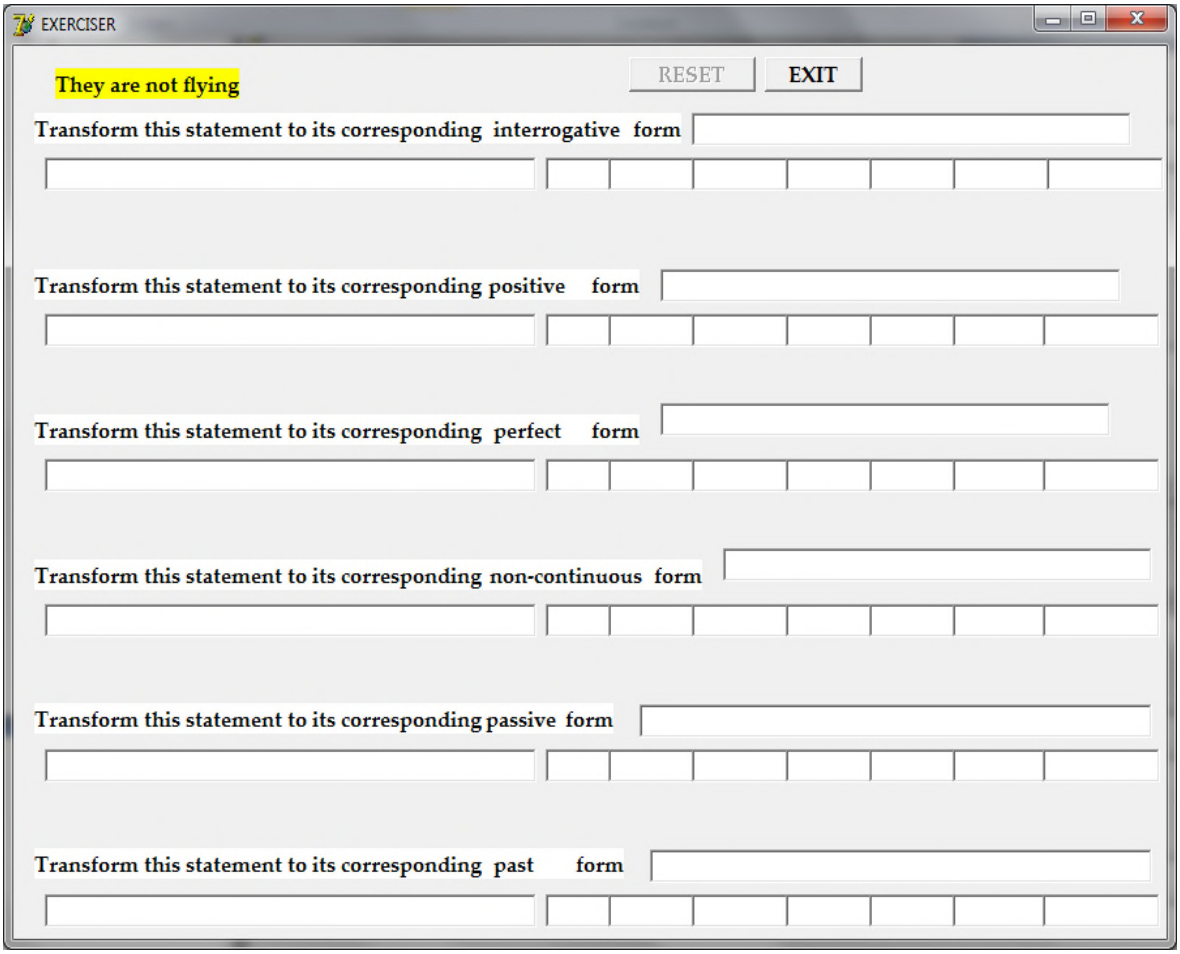


Figure 5.25

The displayed form indicates to the learner/user the tense form he has entered, namely "They are not flying", and he is asked to transform it into all its corresponding forms. In the following forms, we show to the reader the resulting windows for the simulated answers. For the first question: "Transform this tense form to its corresponding interrogative form", we enter the following answer: "Are they not flying":

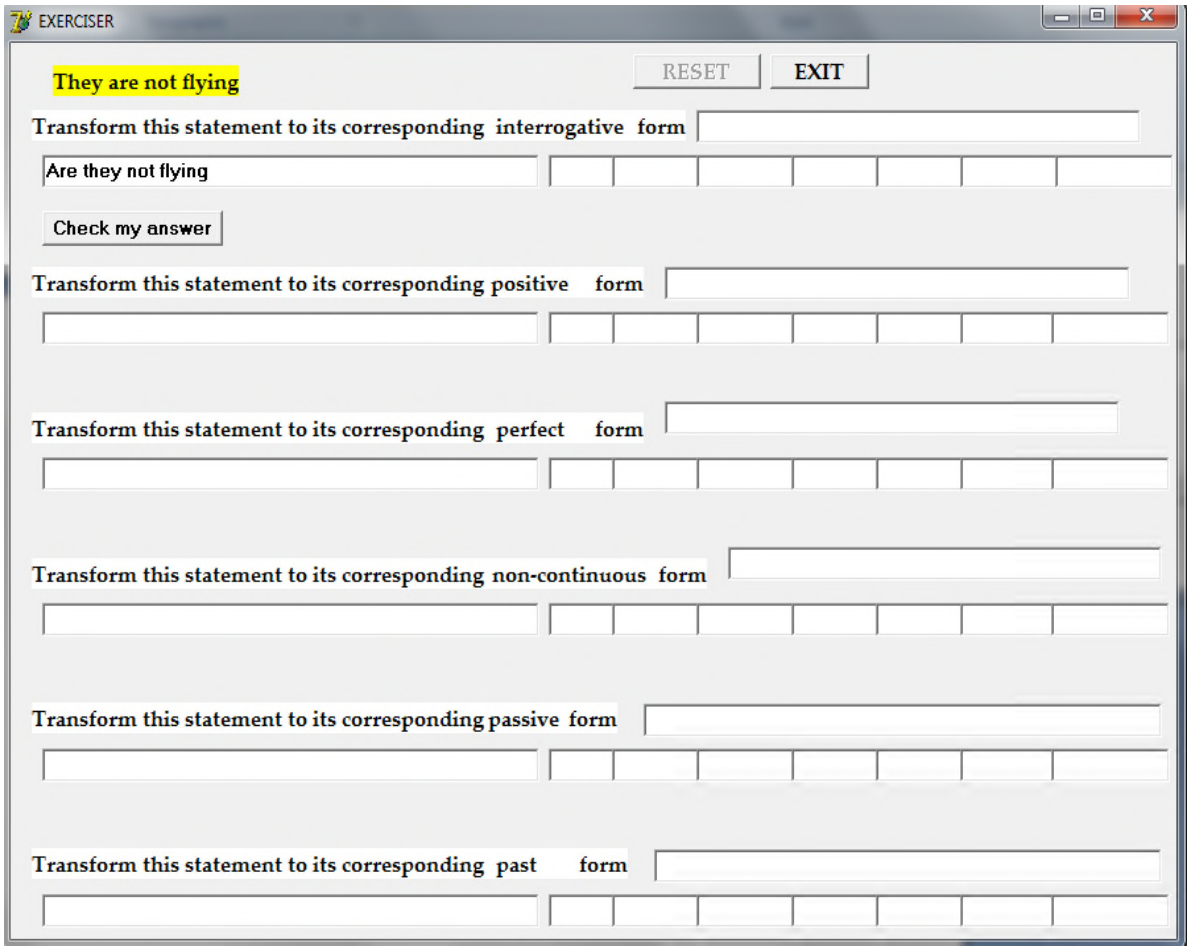


Figure 5.26

The button CHECK MY ANSWER appears. The learner/user click on it and gets "Your answer is correct" as shown below:

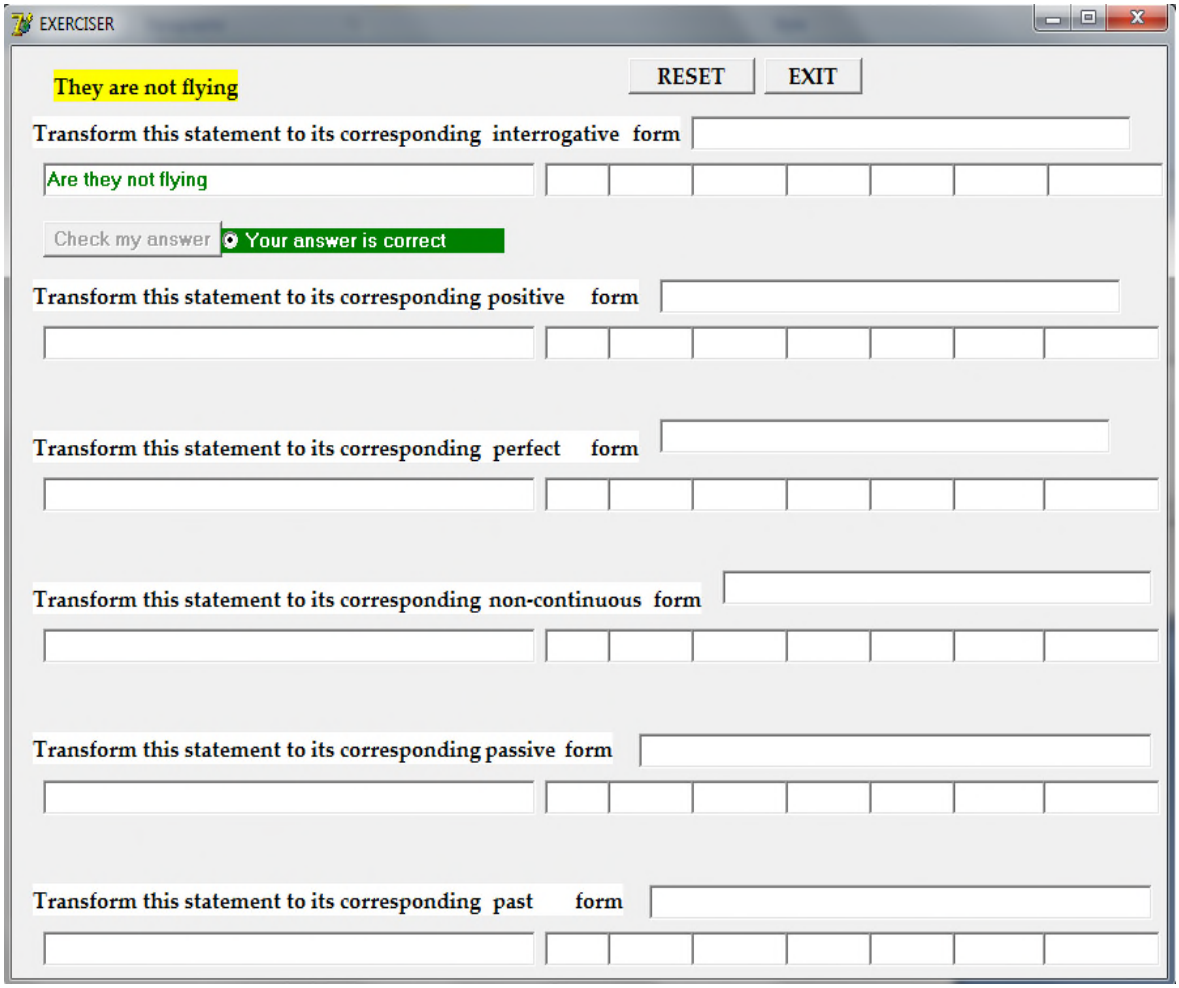


Figure 5.27

We move to the following question by which the learner/user is asked to "Transform this tense form to its corresponding positive form". We simulate the following answer: "They are flying".

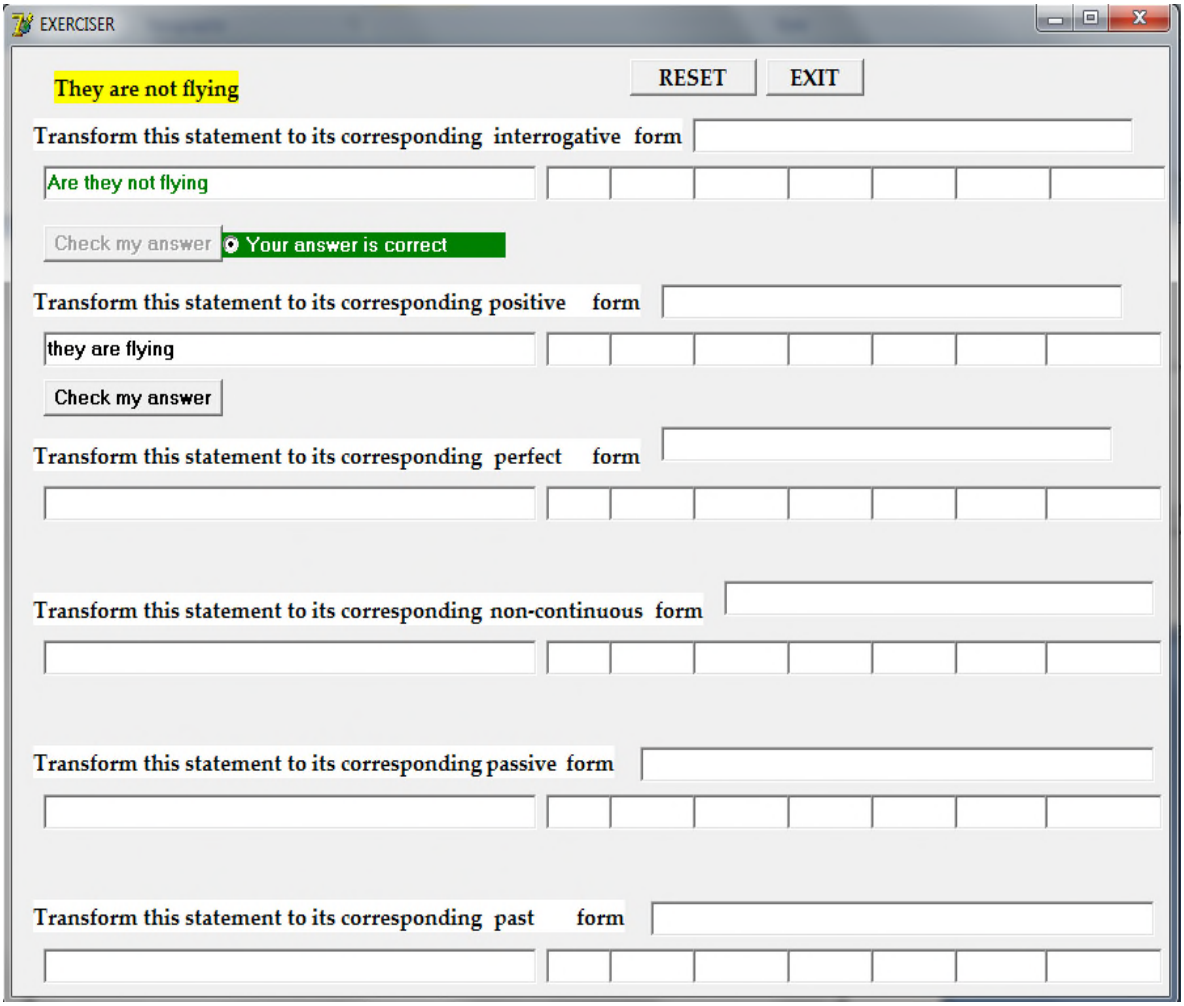


Figure 5.28

This time again, the click on the button CHECK MY ANSWER indicates that this answer is correct.

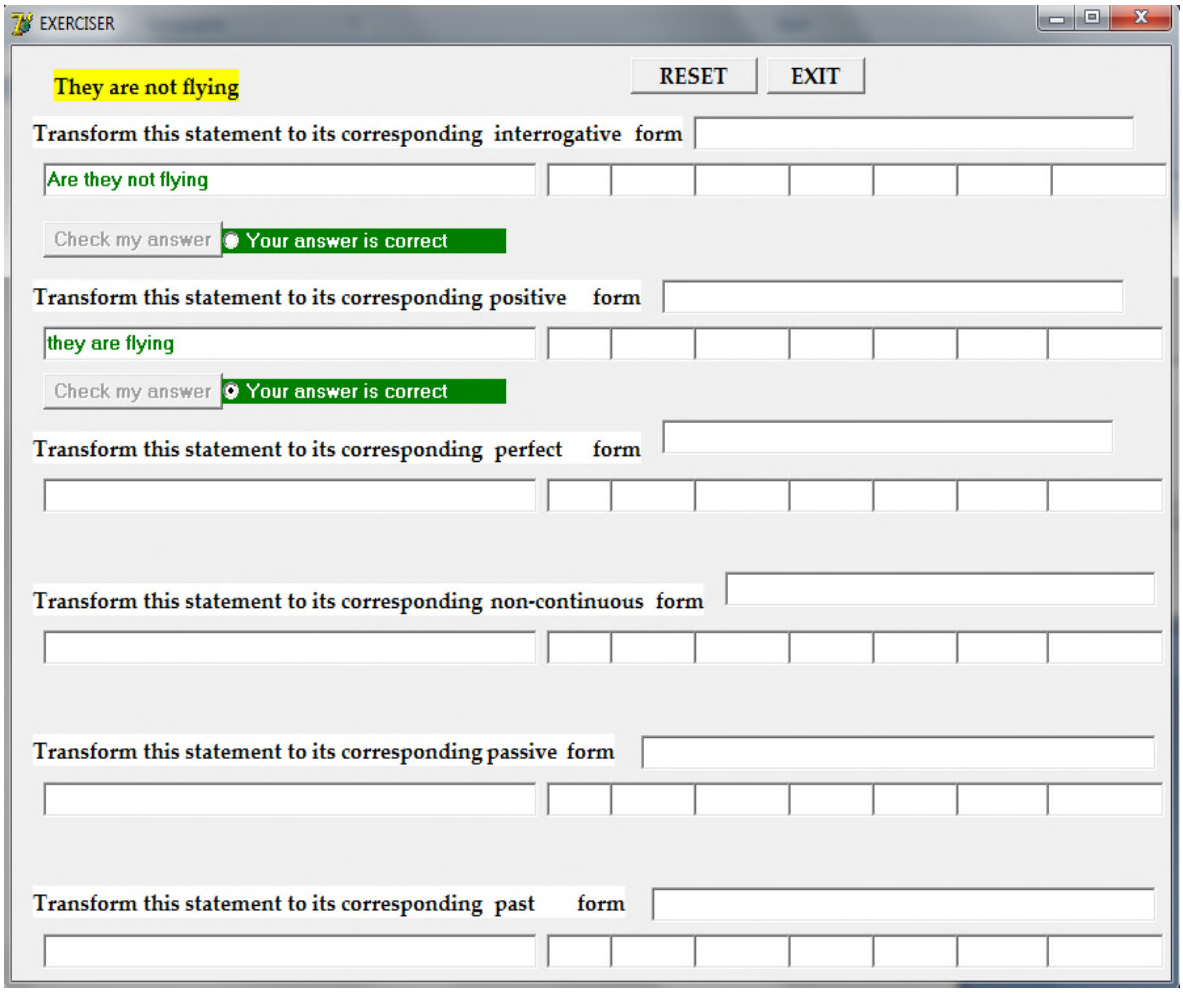


Figure 5.29

Let us move to the following question and answer “they have not flied” to the question “Transform this tense form to its corresponding perfect form”. On clicking on the button CHECK MY ANSWER, the learner/user gets the following answer from the EXERCISER tool:

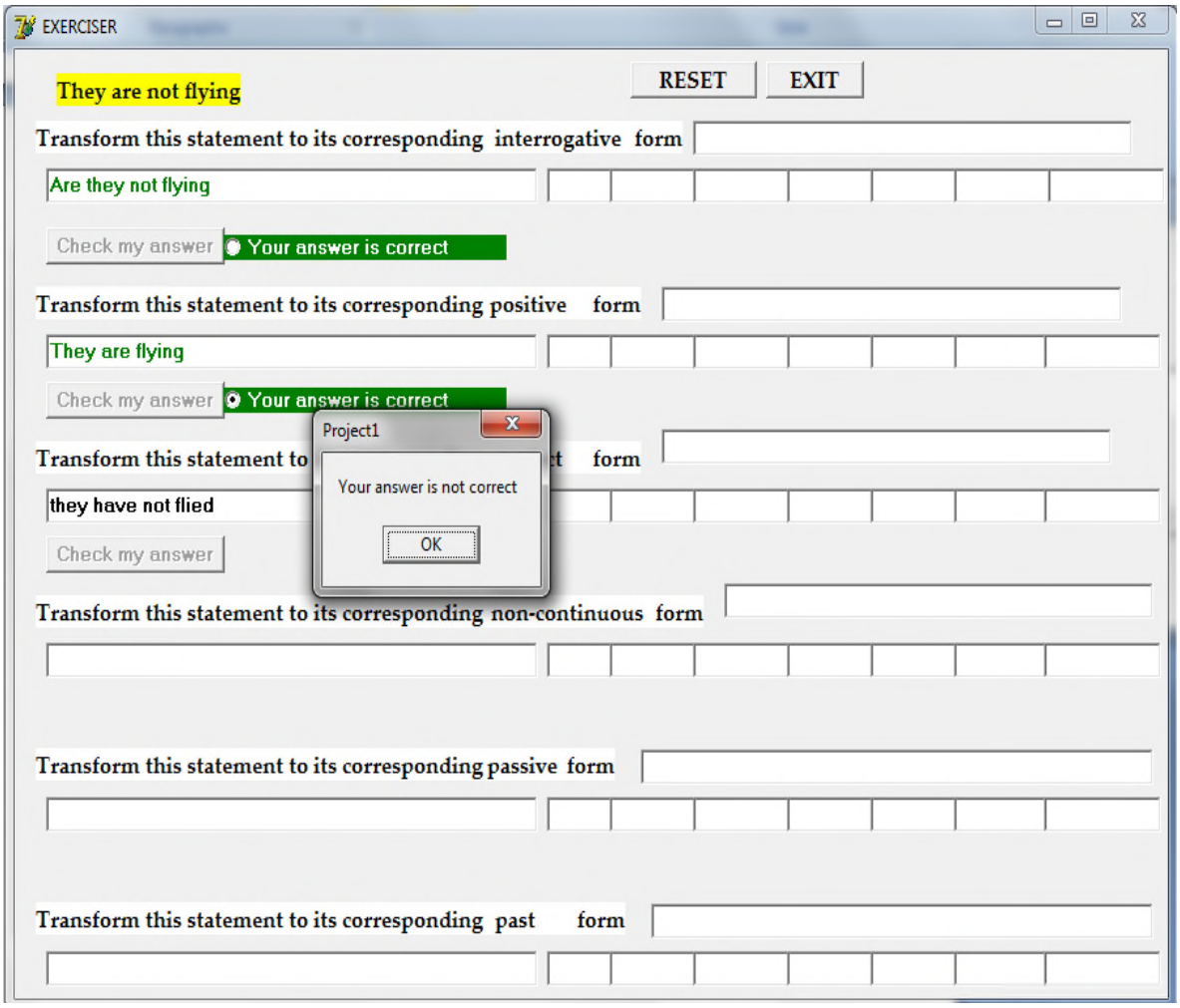


Figure 5.30

A message box indicates that the answer is not correct. Once the learner/user clicks on OK, the incorrect answer is coloured in red and "Your answer is incorrect" also appears in red:

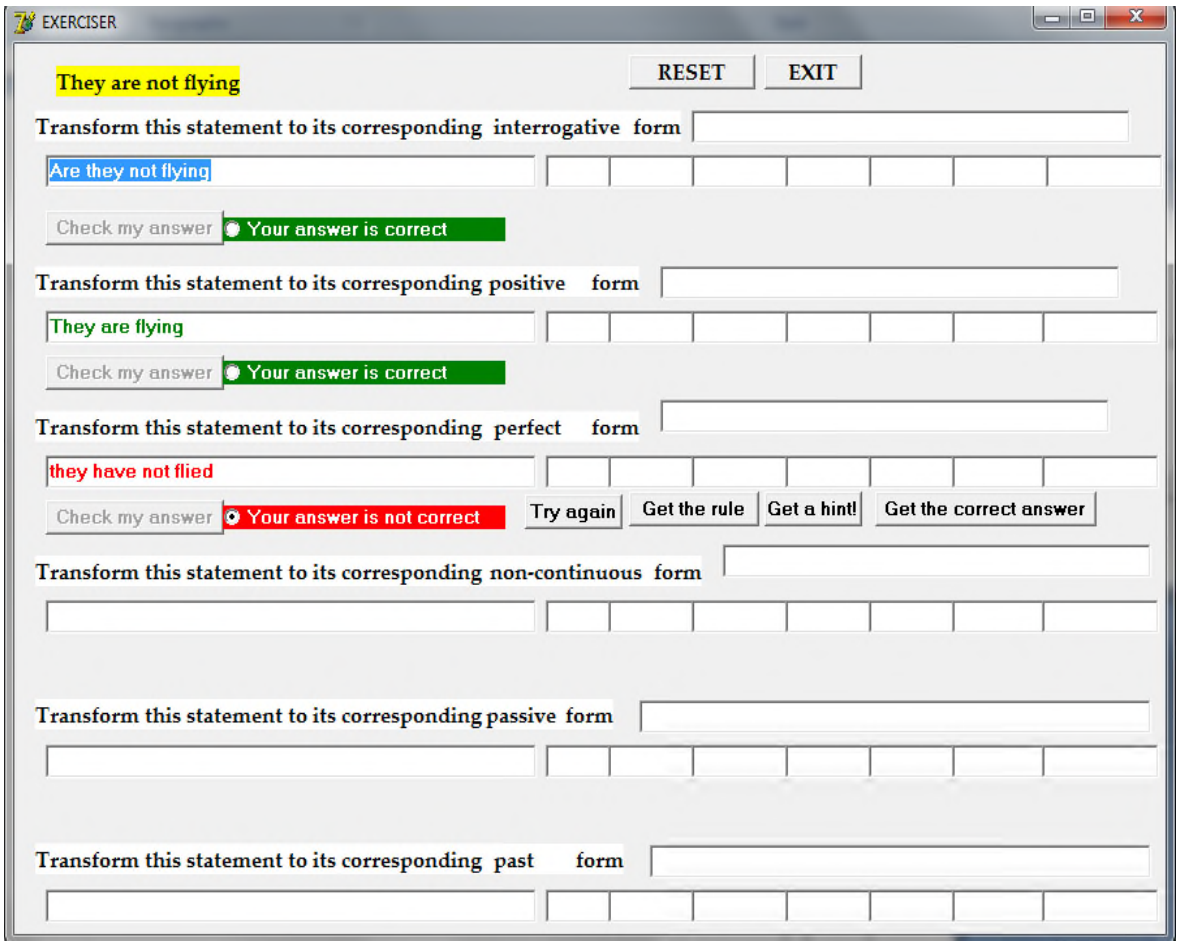


Figure 5.31

The learner/user has then the choice to click on three buttons: either to TRY AGAIN or GET A HINT or GET THE CORRECT ANSWER. We simulate a click on the button GET A HINT to get the following answer from the EXERCISER:

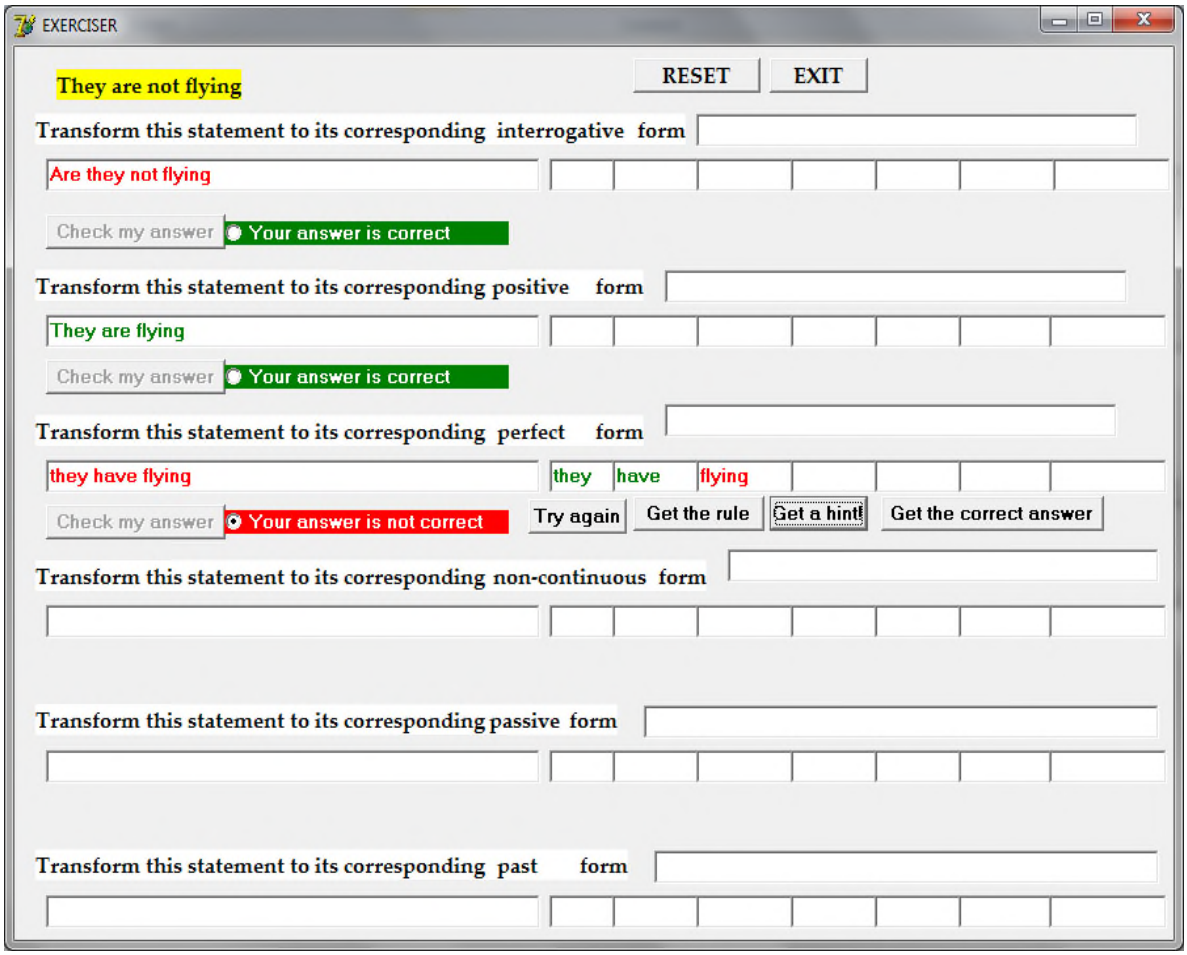


Figure 5.32

As we can see, the correct parts of the tense form occurring in their right positions are coloured in green, while the others are coloured in red. The learner/user chooses then either to try again or get the correct answer as the following screen shows:

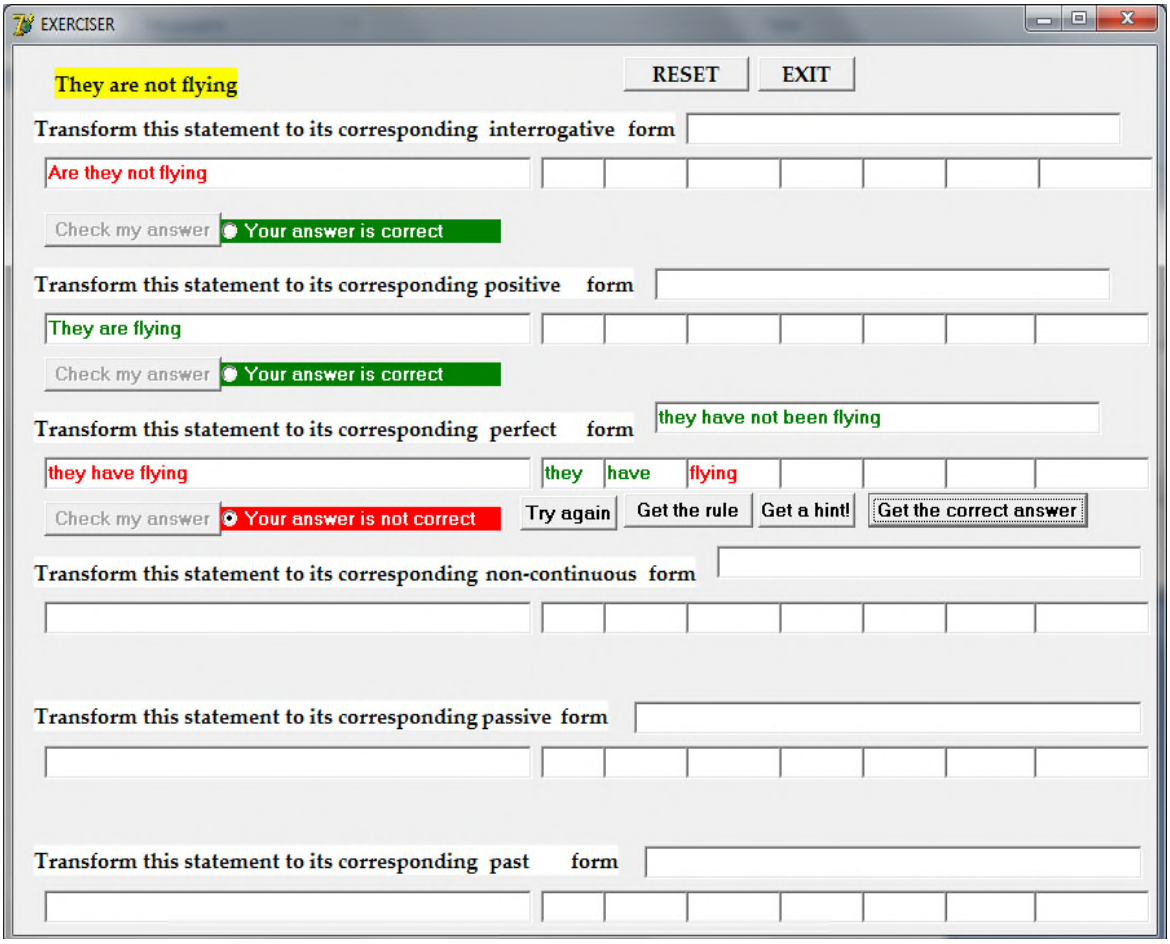


Figure 5.33

As we can see, the correct answer, namely “they have not been flying”, is written in green in the provided space. We move to the following question and answer “they have not flied” to the question “Transform this tense form to its corresponding interrogative form”. On clicking on the button CHECK MY ANSWER, the learner/user gets the following answer from the EXERCISER tool:

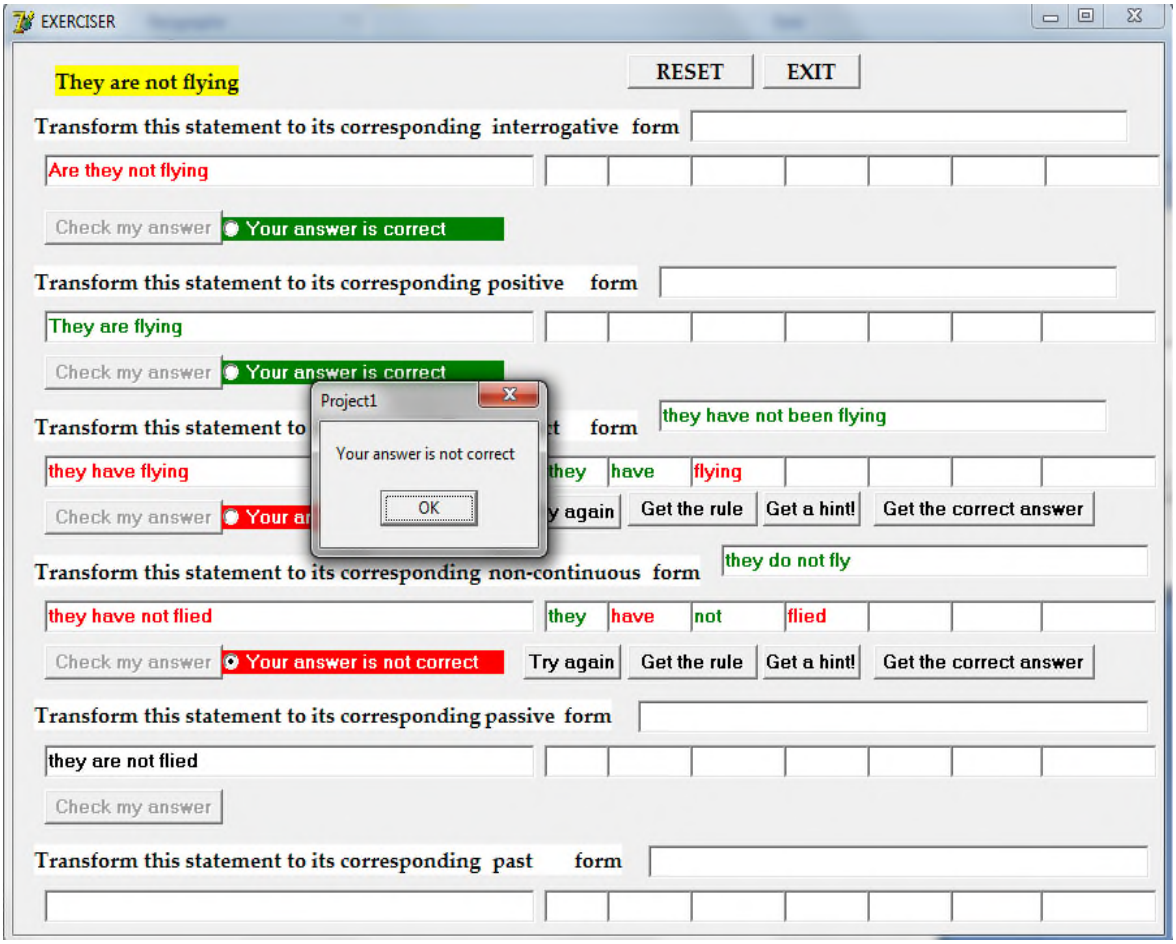


Figure 5.34

The EXERCISER indicates that the answer is not correct. If the learner/user chooses to GET A HINT, he clicks on the appropriate button and the EXERCISER provides some cues as shown in the following form as he can also click to get directly the right answer:

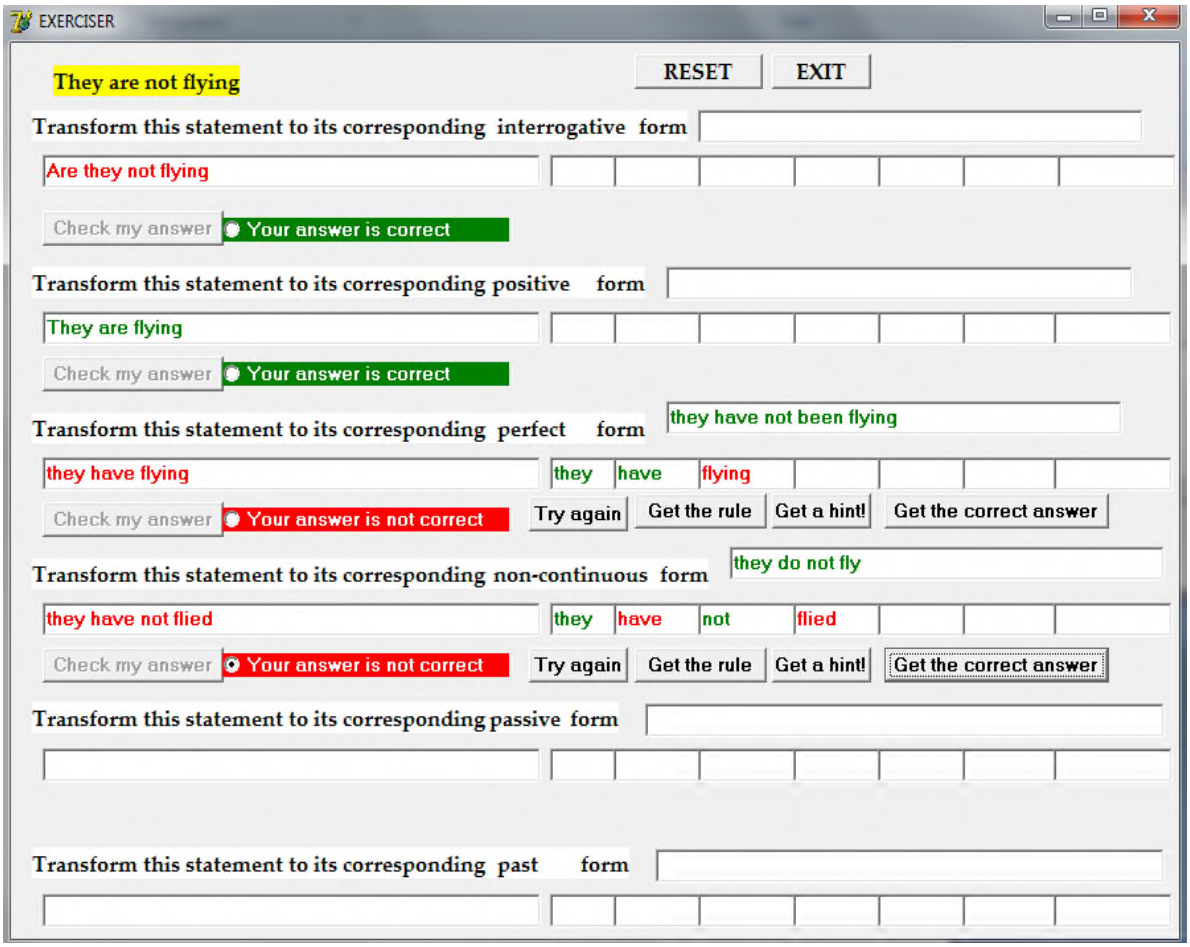


Figure 5.35

Let us now simulate the answer "they are not flied" to the question "Transform this tense form to its corresponding passive form". On clicking on the button CHECK MY ANSWER, the learner/user gets the following answer from the EXERCISER tool:

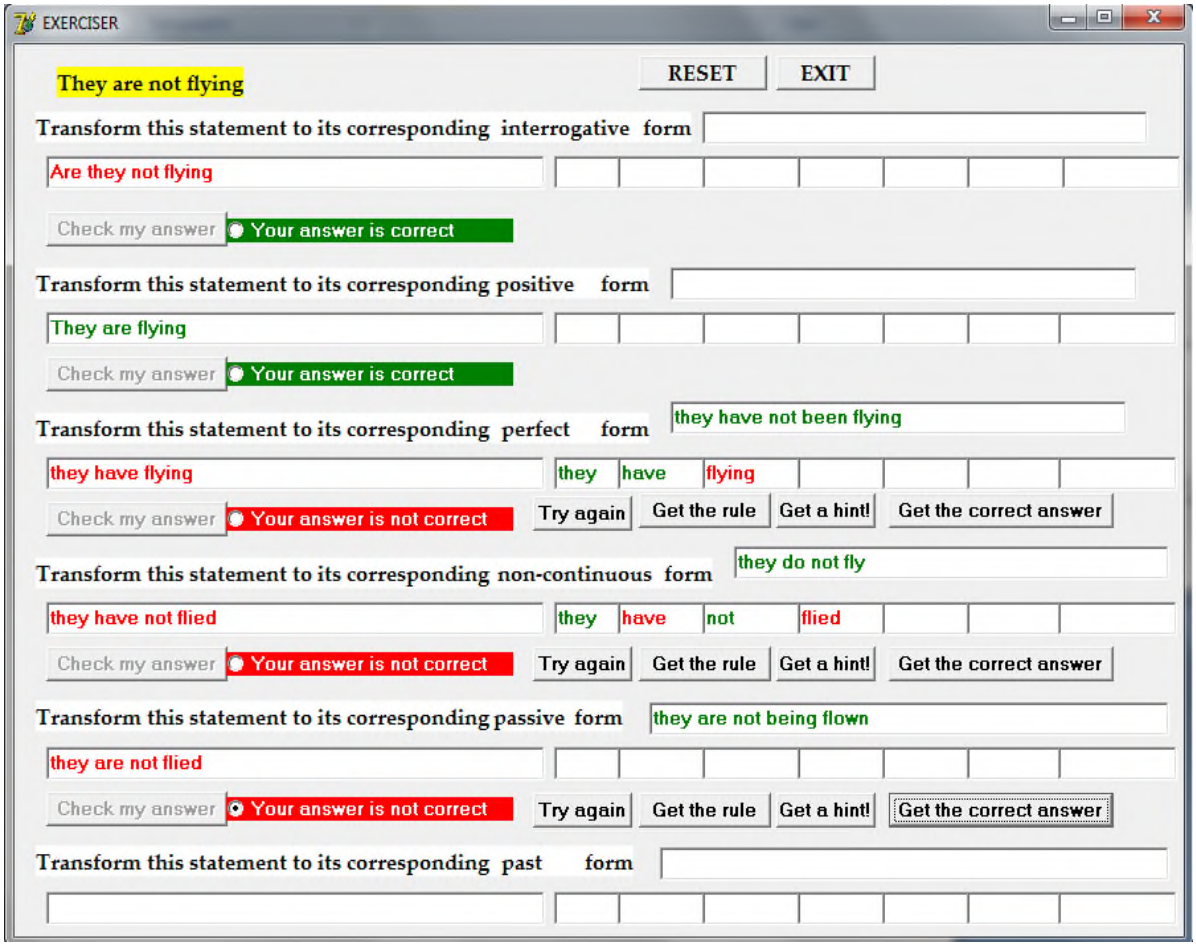


Figure 5.36

Let us now simulate the answer "they were not flied" to the question "Transform this tense form to its corresponding passive form". On clicking on the button CHECK MY ANSWER, the learner/user gets the following answer from the EXERCISER tool:

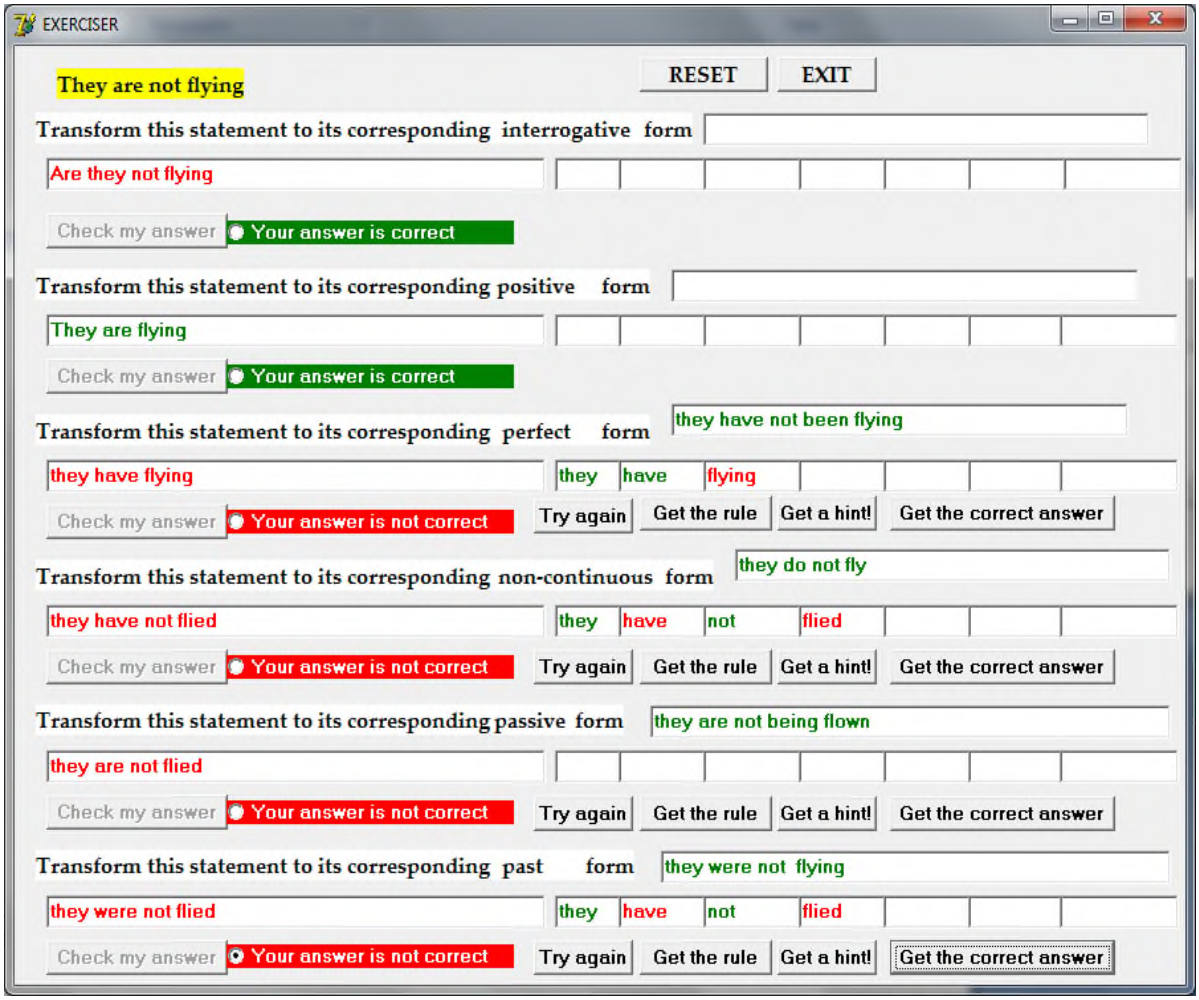


Figure 5.37

The learner/user can RESET to start from the beginning or EXIT from the EXERCISER to get back to the main menu of the SCHEME TESTER.

Conclusion

We end this chapter by saying that our application can only be used as an additional help that can be suggested to the learner and the teacher because it focuses only on the form and we know that language mastery lies beyond this single aspect. We are aware that we are far from the elaboration of software that can analyse Natural Language and tutor its learning with an automated feedback that can replace the teachers' intervention. In fact, we would like to underline, once

again, that our purpose is just to test the validity of our linguistic description by simulating the production and the analysis of a very restricted part or the English language, namely the English tense forms of the primary pattern actualized with overt subjective pronouns. Reaching an Intelligent Language Tutoring System (ILTS) not restricted to this aspect, goes far beyond the scope of this isolated and limited research.

We underline once again that our goal in this chapter was to emphasize the importance of coming out with a practical application to the suggested linguistic study. For us, exploring the implications this theoretical linguistic research can have on other fields of study, especially those linked to language learning and teaching is very important.

GENERAL CONCLUSION

The study presented in this dissertation enabled us to embrace an interesting number of phenomena of the English grammatical system, as a first step towards a more global application of the neo-khalilian theory to the study of English, and test the applicability of almost all the concepts of this theory. In this conclusion of the overall work, we propose to go through the main research contributions and present some recommendations for future research.

1. The research contributions

The main goal of this work was to investigate whether the concepts of the neo-khalilian theory could be used for the analysis of one aspect of English grammar; namely the English tense forms. As far as this point is concerned, our study enabled us to show the usefulness of the methodological tools used by the Arab grammarians for the study of English; namely the concepts of *qiyās*, the two notions of *aṣl* and *far'*, as well as the *ḥadd*, *naḍīr* and *bāb*. In fact, the results of this preliminary application allowed us to distinguish two levels of language: the *lexical* (i.e., the central level of analysis according to the neo-khalilian theory) and the supra-*lexical* level (i.e., the level that is immediately higher than the lexical level), and define formally the linguistic units occurring at each level. What is of paramount importance is that this analysis shows us the way the units at the *lexical* level are integrated in the structure of the units at the level that is immediately higher (cf. Chapter three, pp. 108-110) and thus it can form a basis for a gradual approach to the study of language going from smaller units to higher ones and vice versa.

This study allowed us to define formally the English verb and clarify how the auxiliaries differ from the other English verb: eight formal criteria are provided in Chapter Four concerning this point (cf. pp. 137-138). It justifies the distinction made between primary and secondary auxiliaries, and takes into consideration the defining characteristics of : *Do*, *Have* and *Be*. It also proposes formal criteria upon which we can distinguish finite and non finite forms.

The suggested pattern at the supra-*lexical* allows us to determine the relations between the different elements of the 'syntactic' English constructions. That is to say, between the subject, the verb, the object and the complements (Subject and object complements). We can say that the suggested analysis accounts rather satisfactorily for English syntactic structures as far as it generates grammatical sentences such as (a) sentences below, without generating ungrammatical sentences such as (b) sentences. (the examples are taken from Baker (1978: 220)):

1- (a). Are you working? (this construction is possible because *be* is the operator that is inverted with the subject)

(b). *Do you be working? (it is incorrect because it contains an auxiliary that can act as an operator; thus, it is this auxiliary that is inverted with the subject)

2- (a). Jack should be able to go (this construction is correct because it contains a modal auxiliary in the position of the operator and a verbal *lexie be able to go* as T1)

(b). *Jack should can go (our structure does not allow the repetition of the position of the operator where the modal auxiliaries appear)

The resulting analysis also allowed us to classify the verbs according to the structure of the *tectonies* (i.e., the linguistic unit at the supra-lexical level) in which they appear:

- Intensive verbs appear in structures of the kind: [R → T1 , T_2] where the verb occurs in T_1 (except the copular verb *Be* which occurs in the position of the operator) and T_2 contains a subject complement or an adverbial complement.
- Extensive intransitive verbs appear in structures of the kind: [(R → T1)] where the verb occurs in T_1.
- Extensive mono-transitive verbs appear in structures of the kind: [(R → T1)], T_2 where the verb occurs in T_1 and T_2 contains a direct object.
- Extensive di-transitive verbs appear in structures of the kind: [(R → T1), T_2, T_3] where the verb occurs in T_1 , and T_2 contains an indirect object, and T_3 contains either a direct object. T3 occurs outside the *binya*, i.e., it is under the effect of government, but it is not structurally integrated upon (R → T1).
- Complex transitive verbs appear in structures of the kind: [(R → T1), T_2] where the verb occurs in T_1, and T_2 contains an embedded structure [(R → T1), T_2], where the embedded R is the object of the main structure, T1 is

empty, and T2 is the complement or the adverbial complement of the embedded R.

Additionally, the proposed syntactic pattern enabled us to analyse also the complex verb phrase suggesting a classification of the catenatives. Formal criteria are determined to distinguish it from the simple verb phrase.

Another contribution of the research is the suggestion made to exploit the linguistic patterns resulting from the application of the neo-khalilian theory to the analysis of the English tense forms of the primary pattern as a basis to design a computer tool. The algorithm of this computer application allowed to validate these linguistic patterns and to propose a tool for the teaching of English tense forms. This computer tool, labelled SCHEME TESTER, is meant to support the learners/users in analyzing tense forms actualized with overt subjective pronouns containing English tense forms of the primary patterns, determining the infinitive form of its main tense form, and its characteristics. It also allows the learners to practice on English tense forms by transforming them to all their corresponding forms; i.e., affirmative or interrogative, active or passive, positive or negative, present or past, ordinary or perfective, progressive or non progressive.

Finally, the major contribution of the research is its potential to lead to further research, not only in linguistics but also in Computer Assisted Language Learning as we will see in detail in the following section.

2. Recommendations for future research

As pointed out throughout the research, this study was restricted to the domain of the English verb. It showed that the applicability of the concepts of the neo-*khalilian* theory to the analysis of the English verbal system is quite possible. We hope that the present study will lead to further detailed analysis of the other units of language, the noun for instance, in order to come out with a global application of this theory.

Future work could also investigate the comparison between the two grammatical systems of Arabic and English on the basis of the concepts of the Neo-khalilian theory. A preliminary comparison can be roughly drawn through the following points:

- In Arabic, the governing element can be made up of only one *kalima* (Ø, a non-verbal exponent, or a verb), except in case of embedding; that is to say, in case there is an embedded syntactic construction in the position of the governor. In all the constructions containing a verb, the subject is structurally integrated on the verb. It is the verb which governs the subject and the object is structurally integrated upon the unit made up of the verb and the subject. This could be explained by the fact that Arabic is a VSO language.
- English on the other hand, is an SVO language. We suggested that the governing elements are made of a subject, inflectional elements (tense and concord), and operator. The operator is an auxiliary verb which has the specificity of being able to precede the subject.

- The relation which exists between the constitutive elements of this unit of governing elements (subject + inflection + operator) is not that of government but a formal relation that makes possible the inversion of the order (subject + inflection + operator) to (inflection + operator + subject) in case of interrogatives.
- In Arabic, for example, the effect of government can be *a-r-rafʿ* (**الرفع** i.e., the case of the subject, for example, which is in the nominative case), or *a-n-naṣb* (**النصب** i.e., the case of the object, for example, which is in the accusative case) when it is an object (**مفعول به** *mafʿūl bihi*), or *al-ǧarr* (**الجرّ** the case of the genetive case (*al-iḍāfa* **الإضافة**)).

  In English, case inflection resulting from the government of the unit made up of the subject, the inflectional elements for tense and concord with the subject, and the operator is best shown by the pronouns appearing as objects. For example, in a sentence like: *Mary gave the letter to Florancia.* The corresponding pronouns for *Mary* and *Florancia* are respectively *she* and *her*. Thus, the correct corresponding sentence is *She gave the letter to her* and not **She gave the letter to she. Her* is an inflicted form of the personal pronoun *she* when this one occurs in the position of an object, i.e., when it is under the effect of a governor.
- The order R, T_1 in both languages cannot be inverted. In English, for example, *Takes* in *He takes* never precede the subject as opposed to the auxiliaries which appear in the position of the operator. In Arabic, this

determines the linguistic units which are in the nominative case (*régit au rafʿ)* since they cannot precede their governors. The pronouns in the subjective case also cannot come after the full verb: **pay he.* Instead of the subjective pronouns, as we saw above, there are corresponding pronouns in the objective case that are inflicted forms of the pronouns in the subjective case: *pay him.* The same phenomenon is observed also in Arabic: the pronouns are affixed and are inflicted forms of the subjective pronouns because they are governed by the verb. Instead of **ḍaraba huwa hum* (* ضرب هو هم i.e., *he hit they) or **ḍaraba anā anta* (*ضرب أنا أنت i.e., I hit you) we have *ḍarabahum* (ضربهم) and *ḍarabtuka* (ضربتك).

- The first governed term is the first linguistic unit which is under the effect of the governor. In both languages, it is the term that cannot be omitted in any case, because the governor must have an effect on at least one element, the only exception to this in English, are the short answers, though they are context dependent.
- In both languages, there is no *binā'* (i.e., structural integration) between the governor and the first governed term. There is between these two elements a formal relation and it is the other remaining governed elements of the *tectonie* (if any) that are structurally integrated on the unit ($R \rightarrow T_1$) called the pivot. There is a kind of complementation between R and T_1 and

subordination of a governed term to a governor, i.e., T_1 is subordinated to R in both languages.

- In both languages there are optional units at the level of the *tectonie* which are peripheral to the main unit.

Another domain that can benefit from this study is, as we saw in the last chapter of the work, Computer Assisted Language Learning. As we saw, we designed an application which is meant primarily to validate our linguistic description of English and seek ways to make it useful for language learning and teaching. Thus, our application needs to be extended to analyse the secondary pattern tense forms, complex verb phrases and even noun phrases appearing in the different positions at all the levels.

APPENDIX ONE

- **THE ARABIC VERBAL LEXIE**

1. Pattern I: pattern of al- māḍi (The accomplished aspect)

This pattern generates all that is constructed according to the sequential pattern fa‘ala (i.e., *‘alā ṣīġat fa‘ala* **على صيغة فعل**). This sequential pattern denotes an action that is past and finished (ḥadaṯun munqaṭi‘un wa munqaḍī **حدث منقطع ومنقضي**) at any time: past, current or future.

In fact, Fa‘ala (**فعل**) is defined in grammar books as a *binā’* (**بناء**) which:

> expresses an action which is finished and accomplished before the time of enunciation (…), even if its effect is still present: thus, the *sīġa* denotes the accomplishment of the action, while its tense -outside the context from the morphological point of view-, is related to the past or stands upon it, while the aspect of the action is absolute and not limited if no other governors act upon it to change the denotation of time from that meaning or determines how far is the action from the speaker (…).[1]

If we have to define in a formal way *al-fi‘l al-māḍi*, we can reproduce the following pattern whose description is mainly based on (Hadj-Salah 1979: II, 174-176):

[1] “hāḍa al-binā’u (…) yu‘abiru ‘an al-ḥadaṯi al-laḍī tamma wa-ntahā qabla waqti al-ḥadīṯi ‘anhu, wa in kāna aṯaruhu lammā yazal qā’iman; wa ‘alā ḏālika fa’inna aṣ-ṣīġatu tušīru ilā tamāmi al-ḥadaṯI, wa ’amma zamānuhu -ḥāriǧi as-siyāqi mina an-nāḥiyati aṣ-ṣarfiyyati- fa’innahu yarbiṭu bi-l-māḍī aw yaqifu ’izā’ahu ammā ǧihatu al-ḥadaṯI fa’innahā muṭlaqatun ġayru muḥaddadatun in lam tatadaḫal ‘awāmila uḫrā taṣrifu dalālalta az-zamāni ‘an ḏālika al-ma‘nā aw tuḥaddidu bu‘da al-ḥadaṯi mina al-mutakallimi ka’an yakūna ba‘īdan aw qarīban … ; wa hāḍihi al-qarā’in qad takūnu lafḍiyyatan aw mu‘ǧamiyyatan aw ḥaliyatan wa ḏālika amrun manūṭun bi-siyāqi”. (Al-Rayhani 1998: 22)

"هذا البناء (…) يعبر عن الحدث الذي تم وانتهى قبل وقت الحديث عنه، وان كان أثره لما يزل قائما؛ وعلى ذلك فإن الصيغة تشير إلى تمام الحدث، وأما زمانه –خارج السياق من الناحية الصرفية– فإنه يرتبط بالماضي أو يقف إزاءه أما جهة الحدث فإنها مطلقة غير محددة إن لم تتدخل عوامل أخرى تصرف دلالة الزمان عن ذلك المعنى أو تحدد بعد الحدث من المتكلم كأن يكون بعيدا أو قريبا … إلخ؛ وهذه القرائن قد تكون لفظية أو معجمية أو حالية وذلك أمر منوط بالسياق واللفظ."

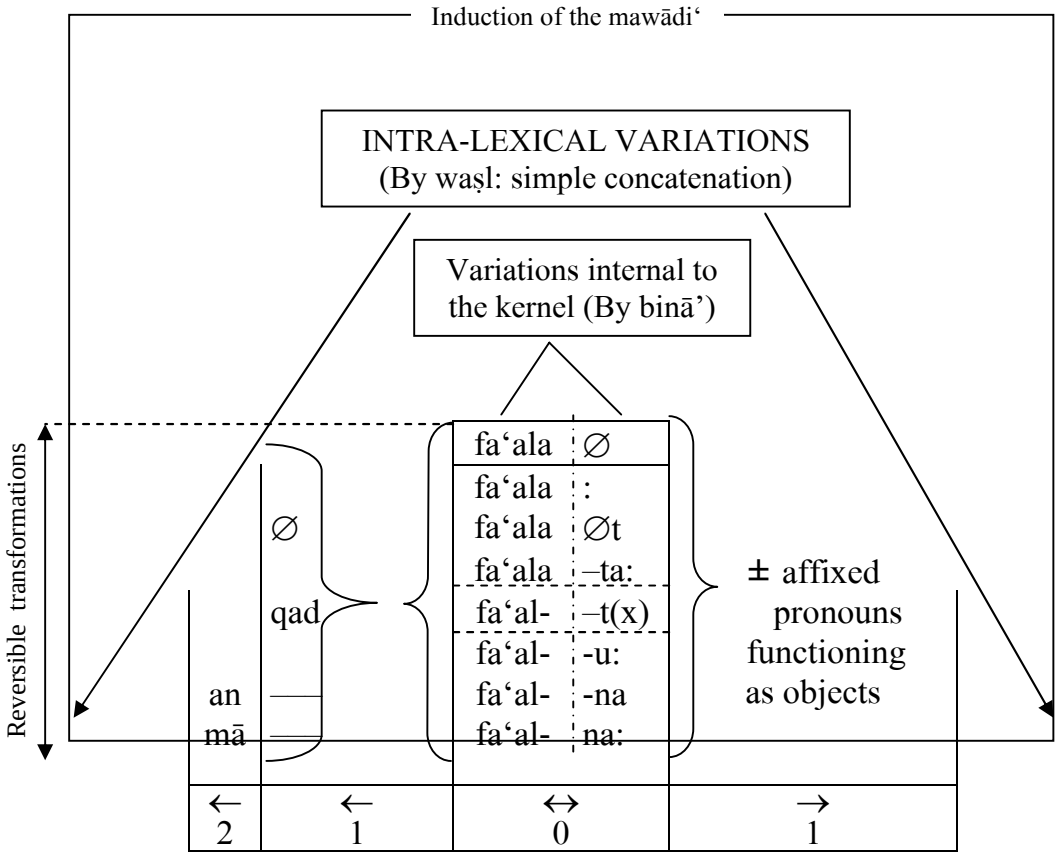


Figure 7. 1 (Cf. Hadj-Salah 1979: II, 175)

As we can see, the pattern is composed of four positions: a central one $\overleftrightarrow{0}$, one right position ($\overrightarrow{1}$) and two left positions ($\overleftarrow{1}$ and $\overleftarrow{2}$). The position $\overleftrightarrow{0}$ is the position of the kernel which is made up of two components: the verb and the subject.

- From the list of sequences which can appear in the position of the kernel, one sequence is considered to be the primitive kernel from which derive the other sequences: it is that of the third person singular masculine [fa‘ala x ø] (فَعَلَ , i.e., He did). All the other sequential patterns derive from it by replacing the personal pronoun ø by one of this list: {:, ø t, -ta:, -t(x), -u:, -na, na:}[2].
- The *aṣl fa‘ala* accepts only one determiner which alternates with its absence and which is: *qad fa‘ala* / ø *fa‘ala* (قد فعل/ ø فعل, i.e., He has done / He did). Both ø and

[2] (:) is used for the long vowel and (x) for the variations of the singular first personal pronouns: -t(u): fa‘alatu (فعلتُ , i.e., I did), -t(i): fa‘alti (فعلتِ, i.e., You did), -t(nā): fa‘alnā (فعلنا, i.e., We did), etc.

qad denote that the action has happened in the past. *Qad* reinforces the meaning of accomplished action which is denoted by the sequential pattern *fa'ala*. *Qad* (قد) can also denote a near past (qad tuqarribu al-māḍī mina-l-ḥāl قد تقرّب الماضي من الحال)[3] since "the past verb can possibly denote any part of the past and if it occurs with *qad* the action becomes nearer the present"[4]. This is what the following example given by Blachère & Gaudefroy-Demombynes (1975: 248) shows: Qad aǧabtuka 'anna… (قد أجبتك أنّ ..., i.e., I have just answered you by…).

- The two items appearing in the second right position $\overleftarrow{2}$, i.e., *an* (أن) and *mā* (ما), are not considered to be determiners but rather as Hadj-Salah calls them 'des convertisseurs' (i.e., converters). When these appear, the position $\overleftarrow{1}$ is necessarily empty (this emptiness is shown by the symbol '-'. These two kalim are in fact found in grammar books as: *an* and *mā* al-maṣdariyatān (أن وما المصدريتان). They are called like that because when they are added to the kernel, the resulting sequence is substitutable to a noun:

'ātānī ba'da	**'an waqa'a**	al-'amr	أتاني بعد	أن وقع	الأمر

i.e., He came to me after the event happened (e.g. 7. 1)

'ātānī ba'da	**wuqū'i**	al-'amr	أتاني بعد	وقوع	الأمر

i.e., He came to me after the happening of the event (e.g. 7. 2)

Figure 7.2

'arāka ba'da	**'an yaṣila**	Omar	أراك بعد	أن يصل	عمر

i.e., I see you after Omar arrives (e.g. 7. 3)

'arāka ba'da	**wuṣūli**	Omar	أراك بعد	وصول	عمر

i.e., I see you after the arrival of Omar (e.g. 7. 4)

Figure 7.3

[3] For more details Cf. Al-Rayhani 1998, p. 43.

[4] "al-fi'l al-māḍī yaḥtamilu kullu ǧuz'in min aǧzā'i al-māḍī, wa iḍā daḫalat 'alayhi (qad) qarrabthu mina al-ḥāl, wa-intafā 'anhu ḍālika al-iḥtimāl" (Al-Kindi 1982 in (Touama 1994: 83)). "الفعل الماضي يحتمل كل جزء من أجزاء الماضي، وإذا دخلت عليه (قد) قرّبته من الحال، وانتفى عنه ذلك الاحتمال"

- The position $\vec{1}$ is the position where appear the affixed personal pronouns which function as objects of the verb like –hu (ـه , i.e., him) in ḍarabtu**hu**. These pronouns are preceded by the symbol (±) which means that they can be added and omitted. They are different from the affixed pronouns appearing in the kernel from two points of view:
    - They are objective, while the former are subjective;
    - They can be deleted without destroying the kernel, while the former can only be replaced by their sisters.

Thus, the object (المفعول , i.e., *al-maf'ūl*) is considered to be an addition that can be added or deleted at the level of the lexie because the kernel is not affected. For example, we can say: # *ḍarabtu* # (ضربت , i.e., I hit) or # *ḍarabtuhu* # (ضربته , i.e., I hit him), but not # **ḍarab-* # (ضربْ *, i.e., *hit).

b.2. Pattern II: pattern of *al-mudāri'* (The unaccomplished aspect)

This pattern generates *al-af'āl al-muḍāri'a* (الأفعال المضارعة) which, as we have mentioned in chapter one of the study, are not opposed to *al-af'āl al-māḍiya* (الأفعال الماضية) upon the criteria of tense, but rather upon the criteria of aspect (accomplished or unaccomplished action) according to the marks which accompany it, in addition to the sequential pattern which generates it of course.

Al-muḍāri' (المضارع) is used when the action is not accomplished whether in the past, the present or the future. The time when the action happens is determined by the linguistic units that occur with the kernel and which appear within this pattern (like *sa-* (سـ, i.e., will) or *lan* (لن , i.e., will not) or outside it like the adverb of time *al-bāriḥa* (البارحة , i.e., yesterday) or ġadan (غدا, i.e., tomorrow). The *muḍāri'* denotes an action which is *muttaṣil ġayr munqaṭi'* (متصل غير منقطع , i.e., continuous) in the past, the present or the future.

Hadj-Salah proposes one pattern for this type of verbs which in fact has three modalities[5] (also called modal endings (cf. Versteegh 2006: 435)) each one having a different case ending (cf. Blachère & Gaudefroy-Demombynes 1975: pp. 36-37):

- The *marfūʿ*[6] (**المرفوع**): like the case of the subject. As in: Qad yafʿalu ḏālika (e.g. 7. 5) (**قد يفعل ذلك**, i.e., he may do that). Example: yaktub**u**.
- The *manṣūb*[7] (**المنصوب**): like the case of the object. As in: lan tafʿala ḏālika (e.g. 7. 6) (**لن تفعل ذلك**, i.e., you will not do that). Example: yaktub**a**.
- The *maǧzūm*[8] (**المجزوم**): like in: limāḏa lam taktub ad-darsa? (e.g. 7. 7) (**لماذا لم تكتب الدرس**, i.e., *why have you not written the lesson?*). Example: yaktub**ø**.
- These three cases are comparable to the cases of the noun which vary according to its function in the utterance. We can mention here the example of *al-kitāb* (**الكتاب**, i.e: the book) (cf. Aad 2001: 88) in each of the following examples:
  - Al-kitāb**u** ǧadīd**un.** (e.g. 7. 8) (**الكتابُ جديدٌ**, i.e., The book (is) new).
  - ʾištaraytu (a)l-kitāb**a.** (e.g. 7. 9) (**اشتريتُ الكتابَ**, i.e., I bought he book).
  - Fi-l-kitāb**i** rusūm**.** (e.g. 7. 10) (**في الكتابِ رسوم**, i.e., In the book (there are) drawings).

We can represent the pattern which generates *al-fiʿl al-mudāriʿ* as follows[9]:

[5] From this point of view, the form of the *muḍāriʿ* is opposed to that of the *māḍī* for it can have three cases for conjugation. (Cf. Aad 2001: 87).
[6] The nominative (indicative).
[7] The accusative (subjunctive).
[8] The apocope, "which is a special case ending called 'jussive' in Western grammar" (Versteegh 2006: 435).
[9] This description is mainly based on the one given by Hadj-Salah (1979: II, 176-179)

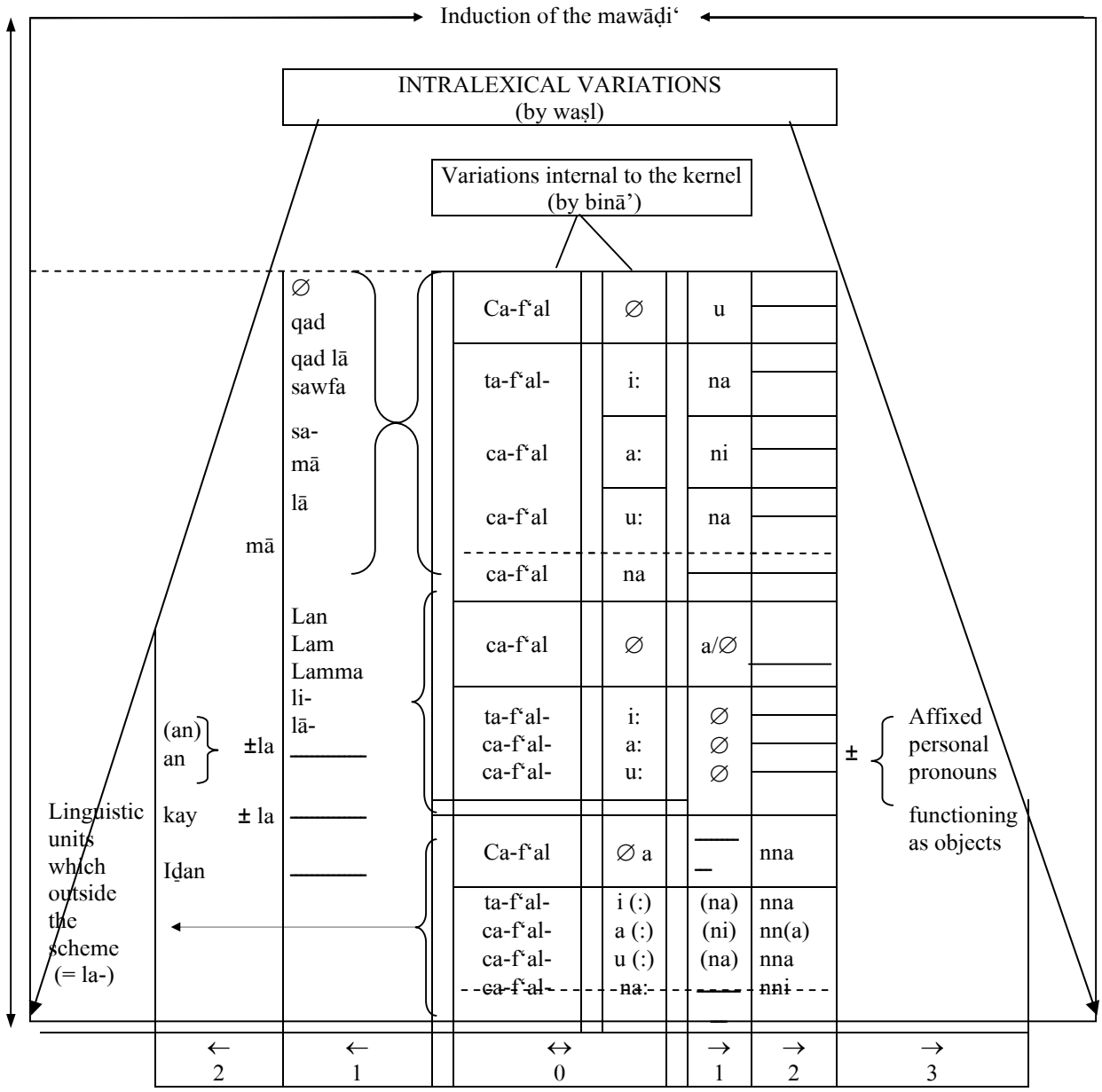


Figure 7.4

- The position of the kernel is $\overleftrightarrow{0}$. The *aṣl* of this kind of verbal *lexies* is [*Ca-f‘alxø*][10] instead of [*fa‘alaxø*] for the *māḍī*.
- The position $\overrightarrow{1}$ is the position where appear the case endings of the verb. As we have mentioned, the *fi‘l al-muḍāri‘* (الفعل المضارع) is specific because it has three cases for inflection. (cf. p. 257 above).

[10] C replaces: ’- for the first person singular, n- for the first person plural, y- for the third person masculine, t- for the second and the third person feminine dual or plural. Little c is user to replace only: t- and y-.

- The position $\overrightarrow{2}$ contains *nūn at-tawkīd* (نون التوكيد) *–nna* (نّ) which denotes an energic assertion. The presence of this mark in this position means necessarily the presence of the segment *la-* (ل) in a position that is situated outside the pattern. This is an example of the resulting sequences: *La-'af'alanna ḏālika* (لأفعلن ذلك , i.e., I shall do it).
- In the position $\overrightarrow{3}$ appear the affixed pronouns which function as objects, while the position $\overleftarrow{1}$ contains a list of *kalim* (كلم) which "add a precision to the value of the unaccomplished aspect which is initially not determined"[11].

These *kalim* are (Cf. Mekki 2002: 119):

1- Ø: when preceded by ø, the verb denotes that the action is not finished and only the context or some adverbs can give precision about the time when the action happens like *ġadan* (غدا, i.e., tomorrow), *al-'ān* (الآن, i.e., now), *kāna* (كان, i.e., Be in the past).

2- *Qad* (قد): denotes probability and prevision of the happening of an action in the future and has the meaning of "perhaps".

3- *Qad lā* (قد لا): denotes negation in addition to probability and prevision of the happening of an action in the future and has the meaning of "perhaps not".

4- *Sawfa* (سوف): determines the use of the *muḍāri'* for the future: the far future. *Sawfa aḏhabu ġadan* (e.g. 7. 11) (سوف أذهب غدا, i.e., I will go tomorrow).

5- *Sa-* (سـ): determines the use of the *muḍāri'* for the future: the near future. *Sa-aḏhabu ḥālan* (e.g. 7. 12) (سأذهب حالا, i.e., I will go immediately).

6- *Mā-* (ما): negates the verb to denote that the action happens now: *nafyun fi-l-ḥāl* (نفي في الحال). *Mā fa'altu ḏālik* (e.g. 7. 13) (ما فعلت ذلك, i.e., I have not done that).

[11] Our translation of : "les exposants qui doivent ajouter une précision à la valeur initialement indéterminée de l'inaccompli" (Hadj-Salah 1979: II, 178).

7- *Lā-* (لا): negates the verb to denote that the action happens in the future: *nafyun fi-l-mustaqbal* (نفي في المستقبل). *Lā yufīdu al-kaḍib* (e.g. 7. 14) (لا يفيد الكذب).

8- *Lan-* (لن): negates the verb to denote that the action happens in the future and it changes the case of the verb form from the *raf*ʿ (الرفع) to the *naṣb* (النصب). *Lan yufīda al-kaḍib* (e.g. 7. 15) (لا يفيد الكذب).

9- *Lam* (لم): is a negative particle used to transfer the meaning denoted by the verb to the past and it changes the case of the verb from the *raf*ʿ (الرفع) to the *ǧazm* (الجزم). *Lam 'uwāfiq 'alā ṭalabihi* (e.g. 7. 16) (لم أوافق على طلبه).

10- *Lammā* (لما): is a negative particle and it changes the case of the verb from the *raf*ʿ (الرفع) to the *ǧazm* (الجزم) and the verb with it denotes that the action happens in the near past (near to the current moment).

11- *Li-* (ل): it is also called *lām al-'amr* (لام الأمر), i.e., the *lām* used for the commands, when used for the *fi'l al-muḍāri'* (الفعل المضارع) it denotes command with a verb that is transferred to the future: *li-naḍhab 'ilā al-madrassa* (e.g. 7. 17) (لنذهب على المدرسة).

12- *Lā-* (لا): it is called *lā- an-nāhiya* (لا الناهية). It is used for negation also and it transfers the action to the future in addition to the change of the case of the verb from the *raf*ʿ (الرفع) to the *ǧazm* (الجزم). *Lā-taqul ḏālik* (e.g. 7. 18) (لا تقل ذلك).

We can divide these kalim according to the following dichotomies:

Positive	**Negation**
ø / Qad Sawfa / Sa- Li-	Qad lā Mā- / Lā- / Lan- / Lam / Lammā / Lā-

Figure 7.5

We can summarize the denotations of the kalim appearing in this position in the following table:

Without time precision	**Temporal precision**			
	Past	**Current (al-ḥāl) present of the speaker**	**Future**	
	(certitude + negation + ǧazm)	(certitude + negation + ǧazm)	(probability)	(certitude)
ø (accomplished)	**Lam** = absolute and finished past ("al-māḍī al-munqaṭi' al-ba'īd" (Rayhani 1998: 92))	**Mā-**	**Qad**	**Sawfa** (near future)
				Sa- (far future)
				Lā- (negation)
				Lan- (negation + naṣb)
	Lammā = near past to the speaker or renewing past which is linked to the ḥāl (al-māḍī al-muttaṣil bi-l-ḥāl (Rayhani 1998: 93))		**Qad lā** (negation)	**Li-** (command or invitation + negation)
				Lā- = future or habitual present (non temporal) (command + negation + ǧazm)

Figure 7.6

13- In the position $\overleftarrow{2}$ appear what Hadj-Salah (1979, II: 76) calls *les convertisseurs*, which are *kalim* "which give the verbal *lexie* which contains them the syntactic status of a nominal *lexie* (and to this latter the value of *maṣdar* (المصدر))." (Ibid.) **Example:** أن **تصوموا** خير لكم ↔ **صيامكم** خير لكم

'an taṣūmū *ẖayrun lakum* (e.g. 7. 19) ↔ ***ṣiyāmukum*** *ẖayrun lakum* (e.g. 7. 20)

14- These kalim, apart from *mā al-maṣdariyya* (ما المصدرية), change the case of the verb from the *naṣb* (النصب) to the *raf'* (الرفع). These also can not be added to a verbal lexie introduced by one of the items appearing in the position $\overrightarrow{1}$. They specify the *fi'l al-muḍāri'* (الفعل المضارع) for the future and they change its case to the *naṣb* (النصب). This case denotes that the action has not happened yet.

b.3. Pattern III: that of the fi'l al-amr (The imperative)

The imperative is used to denote an order and command the addressee for an action which will happen after the time of speaking[12]. For Sībawayh, the imperative is constructed for an action which has not happened yet (Cf Sībawayh: I, 40).

[12] "(…) fi'lu al-amri fī binā'i (if'al) sayadẖulu min hāḏa al-qabīli 'alā annahu ṭalabu ẖudūṭi šay'in fī waqti al-ḥāli al-muẖbari 'anhu lam yaḥduṯ, wa liḏālika fa'innahu min ǧahati at-tamāmi aw

The Arab grammarians derive the pattern of the *fi'l al-amr* (**الفعل الأمر**) from that of the *fi'l al-muḍāri'* (**الفعل المضارع**) and oppose constructions of the type *if'al* (**افعل**, i.e., Do) to constructions of the type: *li-taf'al* (**لتفعل**, i.e., that you do). This means that "the imperative covers, in addition to the position of the kernel, that of the *kalim* appearing in $\overleftarrow{1}$ in *al-mudāri'* : this is the main reason of its flexional invariability"[13] and explains why the pattern of the *fi'l al-amr* does not contain left positions.

li	taf'al
_(i)f'al	
$\overleftarrow{1}$	$\overleftrightarrow{0}$

Figure 7.7 (Cf. Hadj-Salah 1979: 181)

The double segment occupying the two positions ($\overleftarrow{1}$ + $\overleftrightarrow{0}$) design the kernel of the verbal *lexie* of the imperative: the most primitive sequence in the paradigm (position) of the kernel is: *if'alø* (**افعل**, i.e., Do). The position $\overleftarrow{1}$ which is specific to the case of the verb (**علامة الاعراب**) is necessarily empty because the *fi'l al-amr* (**الفعل الأمر**) is not *mu'rab* (**مُعْرَبْ**). This is also the case of the *fi'l al-māḍī* (**الفعل الماضي**).

- The position $\overrightarrow{2}$ contains the "nūn at-tawkīd" (**نون التوكيد**). This position is the same as that of the pattern of the fi'l al-muḍāri'.
- The position $\overrightarrow{3}$ contains the affixed pronouns functioning as objects of the verb. As in the preceding patterns, they are preceded by the symbol (±) which means that they can be deleted without any damage to the kernel of the verbal lexie.

'adamihi ; nāqiṣu at-tamāmi fī waqti al-iḫbāri, ammā min ḥayṯu al-qismu az-zamānī fa'innahu bilā šakkin limā yakūnu wa lam yaqa' " (Rayhani: 133).

"(…) فعل الأمر في بناء (افعل) سيدخل من هذا القبيل على أنه طلب حدوث شيء في وقت الحال المخبر عنه لم يحدث، ولذلك فإنه من جهة التمام أو عدمه؛ ناقص التمام في وقت الاخبار، أما من حيث القسم الزماني فإنه بلا شك لما يكون ولم يقع."

[13] " (…) l'impératif *couvre* en plus de son *mawḍi',* celui des exposants apparaissant en 1 dans le *muḍāri':* c'est là la raison essentielle de son invariabilité flexionnelle." (Hadj-Salah 1979: II, 181)

APPENDIX TWO

- **THE ENGLISH AUXILIARIES**

Subject	**Auxiliary**	**Tense**	**Concord**	**Resulting form**
I	Be	Ø	C1	I am
		ed		I was
You, we you, they		Ø	C2	(You, we, you, they) are
		ed		(You, we, you, they) were
He, she, it		Ø	C3	(He, she, it) is
		ed		(He, she, it) was
I	Do	Ø	C1	I do
		ed		I did
You, we you, they		Ø	C2	(You, we, you, they) do
		ed		(You, we, you, they) did
He, she, it		Ø	C3	(He, she, it) does
		Ed		(He, she, it) did
I	have	Ø	C1	I have
		ed		I had
You, we you, they		Ø	C2	(You, we, you, they) has
		ed		(You, we, you, they) had
He, she, it		Ø	C3	(He, she, it) has
		ed		(He, she, it) had
I, you, he, she, it, we you, they.	Will	Ø	There is no concord with the subject for these auxiliaries	(I, You, He, she, it, we you, they) will
		ed		(I, You, He, she, it, we you, they) would
	shall	Ø		(I, You, He, she, it, we you, they) shall
		ed		(I, You, He, she, it, we you, they) should
	can	Ø		(I, You, He, she, it, we you, they) can
		ed		(I, You, He, she, it, we you, they) could
	may	Ø		(I, You, He, she, it, we you, they) may
		ed		(I, You, He, she, it, we you, they)might
	must	Ø		(I, You, He, she, it, we you, they) must
	dare	Ø		(I, You, He, she, it, we you, they) dare
	need	Ø		(I, You, He, she, it, we you, they) need
	Use to	ed		(I, You, He, she, it, we you, they) used to

Table 8.1

GLOSSARY

GLOSSARY

A

Acceptability "A sentence may be grammatically correct, according to the rules of the grammar of a language, but none the less unacceptable, for a variety of other reasons. For example, owing to the repeated application of a rule, the internal structure of a sentence may become too complex, exceeding the processing abilities of the speaker: these performance limitations are illustrated in such cases of multiple embedding as *This is the malt that the cat killed ate,* which is much less acceptable than *This is the malt that the rat ate*, despite the fact that the same grammatical operations have been used." (Crystal 2008: 5).

Accusative : It is "one of the three cases in Arabic noun and adjective declensions; it typically marks the object of a transitive verb but also serves to mark a wide range of adverbial functions" (Ryding 2005: 685)

Active voice : It is the voice by which the grammatical subject is not acted upon. It is opposed to the passive voice.

- For us, a statement is in the active voice, if it contains a verbal *lexie* whose eight position is empty (cf. fig. 3.10, p. 111).

Additions : The elements that appear in the different positions of the pattern of a given linguistic unit; they can be added thanks to a simple concatenation or omitted (*tadḫul wa taḫruǧ*) at every level of language.

Adjective : "a word that describes (qualifies) a noun or pronoun" (Dykes 2007: 202)

Adverb : "A word which modifies a verb, an adjective or another adverb." (Kerstens & al. 1996). It can be optional or non-optional.

- In our study, we have treated the adverbs at the supra-*lexical* level since they appear in one of the positions of the *tectonie*. They are optional and alternate with the zero element *Ø* when they appear in the position of the peripheral elements *D*. When they appear in the obligatory positions of the pattern (R, Ti), they are not omissible this is the case of *today* in *Today is the day*.

Adverbial : It is "an element of clause structure which functions like an adverb. It may be a single adverb (soon), an adverbial phrase (very soon, in the morning), or an adverbial clause (when it was dark,…)" (Crystal 2001: 7)

Affirmative statement : In our study, it is the statement which is generated by the pattern whose order of the positions of the governing unit (i.e., subject - inflection - operator) is not inverted.

Affix : It is "an inflexional or derivational feature added to a word stem" (Ryding 2005: 686)

Affix-hopping : In Western linguistics, it is the transformation thanks to which an affix which is found to the left of a verb is moved to its left.

- This transformational rule exists in our analysis. It is applied only once for each *tectonie* (in case there is no embedding in this tectonie) since the elements causing inflection occur horizontally before the elements it inflicts. The two elements of tense and concord are affixed to the first verbal element that comes just after it (i.e., the operator) or, in case the position of this one is empty, the full verb appearing in the central position of the verbal *lexie* contained in T_1. Thus, a sequence like: *He* (C_3 + Ø) + (*have* + *tried*) is rewritten as: *He has tried.*

Agreement : "Two elements a and b agree if they have at least one feature in common. A traditional term for agreement is concord. Example: the subject and the finite verb in (i) are in an agreement relation: they must have the same features for person and number.

(i) *John[3p,s] is[3p,s] reading*

Recently, it has been proposed that agreement is the relation between a specific head AGR and its specifier. Subject-verb agreement is then reduced to agreement between AGR and the element (the subject) in the specifier." (Kerstens & al. 1996)

- In our study, agreement is represented by the elements contained in the position labelled concord of inflection. The elements that can appear in this position are the following: C_1, C_2, C_3 (which are also gathered under one symbol C_x) to refer to the concord of the verb respectively with the first person singular pronoun *I*, the second person singular pronoun *You* and the three person plural pronouns: *We*, *You* and *They*, and the third person singular pronouns: *He*, *She*, *It.*

'Alāma : Mark, designence.

'Alāmāt al-'i'rāb : Casual designence like *-a* in *Zaydan* or *-u* in *Zaydun.*

Al-Khalil : "Al-Khalīl is 'abdu al-Rah- mān al-khalīl ibn aḥmad al-Farāhīdī, known simply as Al-Khalīl (100–175H/719–791 A.D.)." (Versteegh 2006: 168). He is one of the students of *Abu 'Amr Ibn al-'alā'* and the teacher of *Sībawayh.* An eminent Arab grammarian who undertook a number of surveys in different fields of study, among which a description of the Arabic language.

Al-Kitāb : A book written by *Sībawayh* in which he referred to nearly all that has been done by the first generations of the Arab grammarians and most essentially grammar.

'Amal : Government.

Ambiguous : It is "descriptive of a word or sentence which expresses more than one meaning. Ambiguity within the word (lexical ambiguity) is seen in *chip*, which can be the product of a computer or a potato. Ambiguity of sentence structure (grammatical or structural ambiguity, also called constructional homonymity) is seen in Visiting uncles can be boring –which can mean both 'When we visit uncles …' and 'When uncles visit us… 'To show the alternative meanings in a sentence is to disambiguate it." (Crystal 2001: 14)

'Āmil : Governing element. It is the element that determines the casual designence of the elements contained in the positions of the structure of the syntactic *binā'*. It can be explicit or non explicit (zero mark).

Analogy "analogies help us see how seemingly dissimilar things are similar (...) [and] are probably the most complex format of identifying similarities and differences in that they deal with 'relationships between relationships'" (Marzano & al. 2005: 26)

Arabic linguistics : It appeared around the 8th century of the Christian era (at the end of the 1st century of the Hegira) as a result of the Arab's need to know, describe and conserve the language of the Koran (cf. Hadj-Salah 1979).

'Arabiyya : It is " a linguistic system whose natural, spontaneous and daily use had been observed (…) among speaking subjects who lived in the Arabian peninsula, from at least the end of the second century before the Hegira" (Hadj-Salah 1979: II, 433).

Aṣl : It is the starting sequence of a transformation. It is opposed to the *far'*. It is defined as a basic element (or class of elements); a basic characteristic or behaviour that is considered to be first compared to other elements that are derived from it. At the lexical level, for example, it is the smallest free sequence that can be expanded (cf. Hadj-Salah 1979).

Aspect : It "concerns the manner in which the verbal action is experienced or regarded (for example as completed or in progress)" (Quirk & Greenbaum 1988: 40). It is also defined as "the use of *be –ing* (progressive aspect) or *have –en* (perfective aspect) in a verb phrase: *I am going* and *He has left"* (Wardhaugh 2002: 268)

Aspectual properties : "Not all verbs have the same aspectual properties and so may belong to different aspectual classes. Example: the opposition between the perfect (*I have gone*), the imperfect (I went) and the progressive aspect (*I am going*) in English." (Kerstens & al. 1996)

- In our study, we have seen that the aspectual properties are shown at both the *lexical* and the supra-*lexical* levels.

Auxiliary : It is the "verb which 'helps' the main verb in expressing certain moods, aspects, tenses or voices; all the verbs beside the main verb are auxiliary verbs. Example: *was* is the passive auxiliary in *Greg was defeated*, *has* is the perfect auxiliary in *Miguel has defeated Greg*, and *should*, *have* and *been* are the modal, perfect and passive auxiliaries respectively in *Erik should have been present*" (Kerstens & al. 1996)

- The auxiliaries are distinguished, in our study, from the other English verbs, thanks to the specific positions where they can occur. *Have, be* and *Do* are the only English auxiliaries that appear both at the *lexical* and supra-*lexical* levels. They appear in the fourth position of the verbal *lexie*. *Be* is the only auxiliary that can appear in the seventh and eighth positions. The modal auxiliaries appear only at the supra- *lexical* level in the position of the operator. *Be, have* and *Do* can also appear in this position.

B

Base form : It is also called *stem* or *bare infinitive.* It is the infinitive form of the verb without the particle '*to*'.

- In our study, all the verbs and auxiliaries are presented in the patterns in their base

form. If they appear in the seventh, eighth or ninth position, then they have a special morphology according to the position in which they appear (past participle, progressive). If they appear in the position of the operator or the fourth or sixth position, then the inflectional elements can be affix-hopped to them, otherwise they keep their base form.

Bāb : A structured group of equivalent elements having a common structure or a characterising specificity. Cf. *naḍā'ir*

Binā' : - Structural integration opposed to the *waṣl.* In the *binā'*, when we suppress an element, all the structure is destroyed according to the level to which it belongs: there is no alternation with zero.
- Production and generation of items or utterances thanks to a composition and a structuration of primitive elements on an abstract pattern.
- We speak of the theory of the *binā'* established by *al-Khalīl* and *Sībawayh.* (cf. Hadj-Salah 1979).

Breaker : *Fāṣil* with regard to the government. The elements that follow them are not under the effect of the elements that precede them. *Sībawayh* calls them *al-ḥurūf al-mubtada'a.* We find them in recent linguistic studies under the name of 'barrier'.

- In our study, '*that*' is presented as an example of these linguistic units.

C

Case : It is "a form of word-final inflection on nouns and adjectives that shows their relationship to other words in a sentence" (Ryding 2005: 686)

Catenatives : They are "full verbs that are followed by other verbal forms with regular rules of co-occurrence" (Palmer 1968: 15).
- For us, the catenatives are full verbs that can occur in a *tectonic* which accept embedded structures with empty governors at the level of the second governed term.

Commands : They are "sentences which normally have no overt grammatical subject, and whose verb is in the imperative: *Speak to the boss today"* (Quirk & Greenbaum 1988:191)

Communicative competence : It is the "knowledge of how to use a language appropriately as well as the ability actually to do so" (Davis 2007: 161)

Comparing : It is "the process of identifying similarities and differences between or among things or ideas (...). Technically, the term comparing refers to the process of identifying similarities, and the term contrasting refers to the process of identifying differences. Most educators, however, use the term comparing to refer to both" (Marzano & al. 2005: 17).

Competence : It is "the unconscious or implicit knowledge of language that the native speaker has, and which it is the object of linguistics to systematize" (Davis 2007: 161)

Complex phrase
- The complex phrase results from a structure that has an embedded tectonic in

T_2 (i.e., the second governed term).

Concord : Cf. Agreement.

Constitutive elements : The elements that enter in the construction of a given linguistic unit. At the *lexical* level, these elements occupy the different positions of the generating pattern of the verbal *lexie*; at the supra-*lexical* level, these appear in the different positions of the *tectonie*.

Copula : It is a verb that links the subject to a substantive without indicating any action. Crystal defines it as "a verb with little or n independent meaning, whose primary function is to link elements of clause structure, typically the subject and the complement, to show that they are semantically equivalent; also called linking verb. In English, the main copula verb is *be*, in its various forms, as used in such sentences as She is a doctor, They are happy. This somewhat unusual term derives from a Latin root meaning 'bond' or 'join'" (Crystal 2001: 73).

Corpus : It is "a collection of texts containing language, written or spoken, which may be used as a source of information about the language." (Odlin 1994: 319)

Correctness : It is "an absolute standard of language use deriving from the rules of institution (such as language academies) or respected publications (grammars, dictionaries, manuals of pronunciation and style). When applied to aspects of language where there is no usage variation among educated users, the notion is uncontroversial: the spelling form *langauge is incorrect, as is the word order *Hardly he had left. The notion becomes controversial only when it is used to condemn usages which are common within the whole or part of the speech community, such as the use of the infinitive (to really know) or regional dialect forms (It do no harm)." (Crystal 2001: 74)

D

Dalāla : It is the semiological function (or denotation) of a *dalīl* (*i.e.,* linguistic sign):

- *Dalālat al-lafḍ* or the semantic function of the contextual mark
- *Dalālat al-ḥāl (al-qarīna)* or the contextual mark (like the implication)
- *Dalālat al-ma'nā:* connotation
- *Al-dalāla al-waḍ'iyya:* the first function
- *Al-dalāla al-'aqliyya* (perceived thanks to the *'aql* or intelligence) (cf. Hadj-Salah 1979).

Ḍamīr : Pronoun

Dawāḫil : Grammatical elements or other linguistic items functioning as additions. Cf. Additions.

Deletion : We speak of "erasing (at least) the phonological features of an element in a representation. Example: complementizer deletion (*I know [that] he comes*)" (Kerstens & al. 1996)

- In our study, deletion is the transformation thanks to which the elements added to arrive to the derived structure are deleted to return to the source structure.

Denotation : We speak of "the denotation of an expression (a word, phrase or sentence) is the thing to which that expression refers." (Kerstens & al. 1996). Cf. *Dalāla*

Derived sequence
- It is the sequence that results from the application of transformations on the kernel sequence.

Description, linguistic : It is "the results of a categorizing language units and relating them" ((Besse & Porquier 1996: 16) cited in (Germain & Seguin: 32)).

Di-transitive verb : It is the verb that occurs in the environment «____ NP1+NP2 #» *John gave Mary the book* and not «*____ #» **the dog bit* (Cf. Brown & Miller 1980: 50).
- For us, a di-transitive verb occurs in the *tectonic*s generated by the structure: ((R→T1,T2, T3) ± D); where T2 is an element whose function is a direct object and T3 is an element whose function is an indirect object.

Do support : It is te introduction of "*do* to carry an isolated tense so as to allow affix hopping to occur: *he pres n't know* becomes *he pres do n't know"* (Wardhaugh 2002: 270)

E

Embedding : "The components of phrases may themselves be phrases or clauses, and the components of clauses may themselves be clauses. This feature of hierarchical approach is known as embedding (or sometimes nesting). For example the prepositional phrase 'at the bottom of the garden' has the prepositional phrase 'of the garden' embedded within it" (Hewings 2005: 6)

F

Far' : The linguistic unit that derives from the *aṣl* thanks to a transformation and which can be a shift, an inversion, or just an addition or an omission.

Fā'il : It is the "subject of a verbal sentence; agent; doer of the action" (Ryding 2005: 682)

Fi'l : Verb. One of the three kinds of *kalim*. From the semantic point of view, the *fi'l* denotes the process; from the semiological point of view, it is the lexie that can receive some elements like the affixed pronouns, the pre-verbs: *-sa, -lam, -lan,* etc in Arabic.

Finite forms : A finite verb or phrase is defined as being : "a form that can occur on its own in an independent sentence (or main clause); it permits formal contrasts in tense and mood. Non-finite forms of the verb, on the other hand, occur on their own only in dependent clauses, and lack tense and mood contrasts. All forms except the infinitives and the participles (*-ing* and *-en* forms) are finite, eg. *is walking, have walked, walks*. Clauses which contain finite verbs are finite clauses (these in English always contain a subject, except in the case of commands); otherwise, they are non-finite clauses (e.g. *walking down the street, to kick the ball*)." (Crystal 2008: 190).
- In our study, the finite verb forms are the verbal *lexies* whose full verbs appear

in the sixth position.

Finite verb : It is "a verb form marked for either present or past tense: *I go, I went*" (Wardhaugh 2002: 271)

Fixed order positions : Positions whose order can never be distorted like the different positions of the pattern of the lexie, and *R* and *T1* at the supra-lexical level.

Free order positions : Positions whose order can be changed like the positions of the peripheral elements *D* at the supra-lexical level.

Full verbs : They do not occur with negation (with *not* because they can occur with adverbs denoting the negation like never): *I never play football*; *I play football*; **I play not football* (cf. Palmer 1968: 15)

- The full verbs are distinguished from the auxiliaries, in our study, thanks to the specific positions in which they can appear. This is the case of the sixth and the ninth positions of the verbal *lexie*; while they never appear in the fourth position at the *lexical* level and the position of the operator at the supra-*lexical* level.

G

Generate

- For us, every pattern of both the *lexical* and supra-*lexical* levels has the power to generate an infinite number of linguistic units: that is to say respectively, *lexies* and *tectonies*.

Gerund : It is "a verb with the *–ing* inflection used in a syntactic position characteristic of a noun: *swimming* in *Swimming is good for you*" (Wardhaugh 2002: 272)

They are "deverbal nouns which inherit the sub-categorization properties of the corresponding verbs. Moreover, gerunds appear in syntactic positions typical for nouns, although their behaviour is strictly speaking verbal in nature." (Kerstens & al. 1996)

- As far as our study is concerned, we have handled this category of linguistic items mainly at the supra-lexical level when it is question of the structure whose immediate governing elements are empty and, therefore, which appear as an embedded structure in one of the positions of the *tectonic*..

Governed term : Governee. An element that is under the effect of a governor.

- In our study, we have mentioned the first (T_1), second (T_2) and third (T_3) governed terms.

Government : It is "a syntactic principle wherein certain words ('governors') cause others to inflect in particular ways" (Ryding 2005: 688). It is a "structural relation between a governor […] and a governee. Government is usually considered to be a necessary condition for case marking and for proper government." (Kerstens & al. 1996)

Governor : It is the "element that has the capacity to govern." (Kerstens & al. 1996)

- In our study, we arrived at the characterization of the unit made up of: the subject, inflectional elements of tense and concord, and the operator as being the governing unit at the lexical and supra-*lexical* level.

Grammatical subject : The element that appears in the position of the subject regardless of the fact if it is really the actor of the action denoted by the verb or not.

H

Ḥadd : - Structure that allows the linguist to define, characterise and generate the linguistic units of language (cf. Hadj-Salah 1979).
- Operative definition that is assigned to an item according to the constraints of the system (ibid.).

Ḥarf : Minimal phonetic segment of speech that is non significant. It is most of the time opposed to the *kalima,* which is a minimal significant segment. Thus, when it is significant, it is synonymous to *kalima.*

Ḥarf al-ma'nā : Grammatical morpheme (exponent element) that can be a noun or a verb. It has no meaning in itself, but it adds a meaning to the element with which it co-occurs.

Ḥudūd : Plural of *ḥadd*

Ḥurūf : Plural of *ḥarf*

I

'Ibtidā' : It is "the beginning of one sequence and thus a breach with all that can precede it"("l'attaque d'une séquence et par conséquent coupure avec tout ce qui peut précéder" (Hadj-Salah 1979: II, 657))
- It designates the zero syntactic governing elements and their positions.
- Status of syntactic non dependence (with regard to an explicit syntactic governing element)

'Ilm al-'arabiyya : The theory of the *'Arabiyya.* It was the work of the first generations of linguists and "is present nearly entirely - for what concerns essentially the grammar and the phonology - in the imposing and remarkable book of a grammarian of the 2nd century namely the *Kitab*" (Hadj-Salah 1979: I, 18)

Imperative : It is "a mood of the verb expressing command" (Ryding 2005: 688). It is the "sentence type expressing an order, or request: (i) *Tell me about it.*" (Kerstens & al. 1996)

Imperfect : It denotes when applied to a verb an incomplete action or refers "in a general way to incomplete, ongoing actions or states" (Ryding 2005: 688)

Imperfective Cf. imperfect

Infiṣāl : Characterises what is separable (cf. Hadj-Salah 1979: II, 657)

Infirad : Characteristic of what is isolable. Cf. isolable

Inflection : The English verb can be Inflected for tense, voice, mood, number, and aspect (no one for gender in English). After a modal, the verb is always uninflected. In transformational grammars inflection is introduced under the symbol *Tns*, *ing*, *en* but preceding the verbal element concerned by this inflection.

-*Ing* form : It is the verbal form conveying the progressive aspect. It is the form of any verbal element (full verb or auxiliary) that appears in the eighth position of the *verbal lexie*

Internalization : It consists in generative linguistics of "the acquiring of knowledge about the structure of a language, primarily in the context of child language acquisition. A child who learns a grammatical rule, such as the addition of –s to make a plural in English, is said to have 'internalized' that rule" (Crystal 2001: 166)

Intransitive verb : It "describes verbs whose action or process involves only the doer" (Ryding 2005: 688)

It occurs in the environment "_____ # *the women wept* / *the children cried*" (Cf. Brown & Miller 1980: 50)

In our study these verbs occur in the *tectonic*s of the type $(R \rightarrow T_1) \pm D$

Inversion : The only case of inversion treated in our study is the case of interrogatives. It occurs at the lexical and supra-lexical levels within the positions of the governing elements. To generate an interrogative statement, the two positions of inflection and the operator are inverted with that of the subject to appear horizontally before it.

Isolable : Independent and separable

'Isti'māl : Usage opposed to *qiyās* that is a structural system of equivalencies.

- It "is the implementation of the actual use of the language in utterances. A principle maintained by the Arab linguists in this connection is that not everything allowed by the *qiyās* or system of the language is necessarily found in actual speech" (Hadj-Salah 1979: I, 5)

'Istimrār : Regularity of occurrence

'Iṯāla : It is the kind of recursion that is characterised by the extension of the linguistic unit that occupies a given position without going beyond this position. Cf. Recursion.

K

Kalām : Discourse act; speech act; verbal communication.

Kalim : Plural of *kalima*. Cf. *kalima*

Kalima : Minimal significant segment (from the global and not segmental point of view). It is the linguistic unit that appears in the different positions of the lexical generating pattern. There are *kalim* that do not appear at the *lexical* level, this is why we prefer *Sībawayh*'s definition: the *kalima* is a verb or a noun or a *ḥarf* that denotes a meaning and which is neither a noun nor a verb. To this definition, we add the fact that the *kalim* can be added, omitted or replaced without altering the linguistic unit at a given level.

Khalilian school The school that formed around *al-Khalil.*

ℒ

Lafḍā : *Lexie*: unit or part of the *lafḍ;*

- It is the significant minimal separable sequence that can or cannot receive additions by simple concatenation without loosing its characteristic of 'isolability'. It has three characteristics: (i) *'infirād* (*i.e.,* it can be independent in speech), (ii) *'infiṣāl* (*i.e.,* it can be separated from what precedes and follows it in the speech chain), and (iii) *'ibtidā'* (*i.e.,* it can receive additions on its left and/or right.). These criteria enable the lexie to be independent in meaning and form, since it can convey a message that cannot be conveyed by smaller linguistic units. It is independent for it has a double boundary: it can be separated from what precedes and what follows. This independence enables it of being expanded by receiving additions (not any way, but thanks to transformations that go from the kernel to the different positions of the pattern where new elements are introduced.)

Lexeme : It is "the smallest distinctive unit in the lexicon of a language; also called a lexical item. The term was introduced to avoid the ambiguity in the term 'word', when discussing vocabulary. A lexeme might consist of a single word (e.g. table) or more than one word (e.g. phrasal verbs, such as *switch off*). Also a lexeme is an abstract notion, subsuming a range of variant forms (each of which is a word): *go*, for example, subsumes *gone*, went, going, and goes." (Crystal 2001: 196)

Lexical level : Central level in the analysis of the Arab grammarians from which they depart to reach higher and lower level.

Lexie : Basic linguistic unit of the *lexical* level. Cf. *Lafḍā.*

Linguistic competence : It is "the system of rules and principles that we assume have, in some manner, been internally represented by the person who knows a language and that enables the speaker, in principle to understand an arbitrary sentence and to produce a sentence expressing his thought" (Chomsky 1980: 201).

Linguistic grammar : It "describes or simulates this competence in order to describe it scientifically and most exhaustively, without a practical aim" (German & Séguin 1998: 54).

Linguistic performance : It is "the actual use of language in concrete situations" (Chomsky 1965: 4).

Linguistic unit : The basic units at every level of language. The *tectonie* at the supra-*lexical* level, the *lexie* at the lexical level and the *kalima* at the *intra-lexical* level.

Linking verbs : Cf. copula verbs.

Logical subject : The actor of the action of the verb. It does not always occur in the position of the grammatical subject.

ℳ

Maʿānī : Plural of *Maʿnā*

Maʿnā : Meaning.

Mabnī : Integrated element and in a structural integration: (Cf. *binā'*).

Mabnī 'alayh : The *mabnī 'alayh* is the integrating element that depends syntactically on (R → T_1) : (Cf. *binā'*).

Mawḍi' : Real or virtual position of a class or category of elements in a given structure or a speech chain.

Mawāḍi' : Plural of *Mawḍi'*.

Mawqi' : Place of occurrence of an element in an utterance or in the discourse in general.

Metalanguage : It is "the language used to speak about language. It is question then of a specialised vocabulary of the domain of grammar: verb, noun, subject, subordinate, sentence, ..." (Nadeau & Fisher 2006: 27).

Meta-theory : A theory elaborated at the basis of another theory

Miṯāl : Pattern: structure that gathers a set of forms of the same class of items

Modal auxiliary : The verbal element that occurs exclusively at the supra-*lexical* level in the position of the operator. These auxiliaries do not appear at the *lexical* level which explains why such forms as: *to may* or **maying* do not exist.

Modality : It is "the meaning expressed by a modal verb" (Wardhaugh 2002: 274)

Monotransitive verb : It is "a transitive verb that takes a single object: *eat* in *He ate the cake"* (Wardhaugh 2002: 274)

Mood "of a verb, showing its form according to the kind of sentence, e.g. imperative, subjunctive" (Dykes 2007: 205)

Morpheme : It is "a basic unit of meaning in a language: *unhappiness* contains three morphemes *un-*, *happi (happy)*, and *–ness"* (Wardhaugh 2002: 274)

Movement : It is "the process which plays a role in deriving Surface structure from Deep structure and Logical Form (LF) from Surface structure by the reordering of constituents." (Kerstens & al. 1996)

- In our study, movement is invoked at the *lexical* level concerning the kernel of the verbal *lexie* that moves within the different positions of the pattern.

Muṯul : Plural of *miṯāl.*

Muḍmar : Implicit. It is opposed to the *muḍhar*: explicit.

Musta'mal : Existent in the usage of language.

Mutamakkin : Characteristic of a linguistic unit that can be extended thanks to the additions that can appear within the different positions of its generating pattern.

Muwafāqa li-l-qiyās : Grammaticality

ن

Naḍīr : Equivalent element or homologous behaviour. Cf. *naḍā'ir.*

Naḍā'ir: *:* Plural of *naḍīr.* These are equivalent sequences: they all derive from the kernel and are its *furū'.* A structured set that gathers the *naḍā'ir* is called a *bāb* and the operation that allows us to find these *naḍā'ir* thanks to intensive and extensive comparisons is the *qiyās.*

Naḥw : Theory of the *'Arabiyya* which appeared with *Abu-l-Aswad* and his students and developed with *Ibn Abū Isḥāq* et *Abu Amr Ibn al-'alā* and arrived at its culminating point with *al-Ḫalīl* and *Sibawayh. ('lm) al-naḥw, or* grammar is the branch concerned with grammar in its large meaning since it includes even the study of the phonological system.

Negation : It consists in "the introduction of a negative, particularly *not*, *n't*, or *un-*, into a construction: *He can't go* and *It's unlikely"* (Wardhaugh 2002: 274)

Negative particle : It "is the particle that is used to negate the action denoted by the verb in a given statement." (Quirk & Greenbaum 1988: 185-186)

Negative scope : It is "the entity that is actually negated: *kind* in *unkind*, *is happy* in *He isn't happy*, and *he'll be successful* in *I don't think he'll be successful"* (Wardhaugh 2002: 274)

Neo-Khalilian theory : A theory whose concepts are based on those put forward by *al-Khalīl* and some other grammarians, who have contributed to the scientific study of language, starting from *abū 'amrū ibn al-'alā'* till *Ibn Ǧinnī* in the fourth century who had a number brilliant students after that period like *al-Suḥaili* and *al-Raḍī al-istrabādi.*

Nominative : It is "one of the three cases in Arabic noun and adjective declensions; it typically marks the subject of a sentence" (Ryding 2005: 688)

Non *mutamakkin* : Non variable

Non-continuous : Vs continuous verbal form. In our study, it is the verbal unit generated by the pattern of the verbal *lexie* whose eight position is empty.

Non-finite clause : It is "a clause containing a tenseless verb: *to go* in *I want to go, trying* in *They kept on trying*, and *her to succeed* in *I expected her to succeed"* (Wardhaugh 2002: 274)

Non-finite forms : "These forms occur only with finite forms in independent clauses, though some of them may occur alone in dependent clauses" (Palmer 1968: 12). The non-finite forms of the verb are the infinitive ((*to*) *call*), the *ing* participle (*calling*), and the *-ed* participle (*called*). Non-finite verb phrases consist of one or more such items. Compare:

Finite verb phrases	Non-finite verb phrases
He smokes heavily	To smoke like that must be dangerous

He is working I found him working
He had been offended before Having been offended before, he was sensitive" (cf. Quirk & Greenbaum 1988: 38)

- For us, the finite verb forms are the verbal *lexies* whose full verbs does not appear in the sixth position of the pattern.

Non-finite verb phrase : It is "a verb form not marked for tense, i.e.,, a participle of an infinitive: *dancing* in *They were dancing* and *to go* in *He wants to go"* (Wardhaugh 2002: 274). The non-finite verb phrase is the one whose immediate governing elements are empty.

Noun phrase : It is "a construction with a noun as its head: *John*, *the man*, and *the old man* are all noun phrases with *John* and *man* as their heads." (Wardhaugh 2002: 274)

Ø

Object case : It is "the form of the personal pronoun that occurs in object position: *me* and *him* in *She hugged me* and *Give it to me"* (Wardhaugh 2002: 274)

Object complement : It is "the noun phrase or adjective phrase that follows an object in certain constructions: *president* and *very happy* in *They elected him president* and *It made him very happy"* (Wardhaugh 2002: 274)

Objective case pronouns : Objective case pronouns: *me*, *us*, *him*, *her*, *them*, *who(m)* (Cf. Quirk & Greenbaum 1988: 102)

- In our study, these pronouns occur in the position of *T2* or *T3.*

Obligatory elements : They are non-optional elements. This is the case of the adverb in *The girl is at a large university*, **The girl is.* (Cf. Quirk & Greenbaum 1988)

Obligatory positions : Vs peripheral positions.

Omissibility : Ability to omit elements. A given element is omissible, if it alternates with the zero element.

Omission : Suppression. It is the transformation that allows omitting an element of a linguistic unit. When this latter is a derived structure, the suppression allows us to bring it back to its *'aṣl.*

Open-class items : "Items belong to a class in that they have the same grammatical properties and structural possibilities as other members of the class (that is, as other nouns or verbs or adjectives or adverbs respectively), but the class is 'open' in the sense that it is indefinitely extendable." (Quirk & Greenbaum 1988: 19)

Optional elements : They are the elements that alternate with the zero element: Ø

Ordinary continuous tense form : It is the verbal unit generated by the pattern of the verbal *lexie* whose fourth position contains *be* and seventh position is necessarily full.

Ordinary non- : It is the verbal unit generated by the pattern of the verbal *lexie* whose fourth

continuous tense form position contains *be* and eight and seventh positions are necessarily empty.

Ordinary tense form : Vs. perfect verbal form. It is the verbal unit generated by the pattern of the verbal *lexie* whose seventh position is necessarily empty.

P

Parse "to separate a sentence into its individual components, usually by naming them according to their function" (Dykes 2007: 205)

Parts of speech "one of the eight categories of words, nominated according to their function in a sentence" (Dykes 2007: 205)

Passive, Passive voice construction "of voice, describing a verb, the subject of which suffers the action of the verb" (Dykes 2007: 205)

- It is a "construction in which the logical object shows up as the grammatical subject, while the logical subject is not expressed at all or shows up in an adjunct by-phrase. Example: (ii) is the passive counterpart of active (i).
(i) *Civil servants should avoid passive constructions*
(ii) *Passive constructions should be avoided (by civil servants)*" (Kerstens & al. 1996)
  - In our study, it is the verbal *lexie* whose ninth position is necessarily full.

Passivize : This term is used to mean: to get the passive voice of a statement

Past tense It is "a tense form which refers to a time of an action prior to the moment of utterance. Languages make different distinctions within this period, such as whether the reference is recent or distant, or whether the action is complete or not. French, for example, recognizes imperfect, past historic, perfect, pluperfect, and past anterior tenses, as well as future and conditional perfect forms. English also traditionally recognizes a range of past tense forms, following the influence of Latin grammar, though only a single past tense form is represented inflectionally *(I walked)*" (Crystal 2001: 253)

Past participle form : Form of the verbal element contained in the seventh and ninth positions of the verbal *lexie*.

Pattern : *Scheme, ḥadd. It is a structure whose positions derive from the intersection of the syntagmatic and paradigmatic axes.*

Perfect "of tense, relating to an action completed in the past" (Dykes 2007: 20)

Perfect continuous verbal forms : It is the verbal unit generated by the pattern of the verbal *lexie* and whose seventh and eight positions are necessarily full.

Perfect non-continuous verbal form : It is the verbal unit generated by the pattern of the verbal *lexie* and whose seventh position is necessarily full, while the eight position is necessarily empty.

Peripheral elements : The elements which alternate with the zero element *Ø.* They can be omitted without thereby destroying the structure of the *tectonic* which is not the case when it is question of the obligatory elements.

Pivot : The supra-*lexical* unit made up of the governor and the first governed term: (R → T_1)

Practice : It is "the activity through which language skills and knowledge are consolidated and thoroughly mastered." (Ur 2002: 20).

Primary auxiliary verbs : Be, Have and Do. They "occur in the 'primary' pattern of the verb and with the exception of *Do* are not followed by the infinitive..." (Cf. Palmer 1968: 15)

Primary pattern : It is the pattern containing the verbal units that are characterised by the appearance of only the primary auxiliaries: *Be*, *Have* and *Do.*

Pronouns : "Personal pronouns function as replacements for co-referential noun phrases in neighbouring (usually preceding) clauses: John told Mary that she would wait for him. The personal pronouns have two sets of case-forms." (Quirk & Greenbaum 1988: 103) Cf. subjective and objective case pronouns.

Q

Qiyās : Structural equivalence, *i.e.,* structural analogy or system of structural equivalencies. It is an important theoretical tool used by the Arab grammarians in their analysis of language. It is "an inductive device for extracting for extracting general principles from the data and as the means by which speakers create new utterances by extrapolating from speech patterns already known" (Strazny 2005: 78).

R

Recursion : It is a "process or result of elements recurring in a structure. Recursion allows structure to become of unbounded length. Example: compounding in English is recursive as is shown by the Examples in (i): the concatenation of nouns can go on forever.

(i) film society
> student film society
> student film society committee
> student film society committee scandal
> student film society committee scandal inquiry > etc." (Kerstens & al. 1996).

Cf. also Recursivity.

- The Arab grammarians have mentioned two types of recursion: the linear recursion: Cf. *tikrār*, and the embedded recursion: Cf. *'itāla.*

Recursivity : It is "a property of any generative rule that allows for an infinite number of phrase structures of the same type (e.g., prepositional phrases). Although such rules lead to more complexity in sentence structure than what *descriptive* grammars or *prescriptive* grammars often admit, they have proven useful in developing theories of the creativity of human language" (Odlin 1994: 329)

Rewrite rules : In our study, these rules are used to rewrite the units generated by our patterns: sequences as (*He ed C3 be happy*) is rewritten as (*he was happy*)

S

Sībawayh : He is the pupil of *Al-Khalīl.* He "not only assimilated in an admirable manner the work of his teacher, but he also enriched it considerably and went even beyond in some of his aspects." (Hadj-Salah 1979: I, 29). He is the author of *al-Kitāb.*

Scheme : Pattern or *ḥadd.*

Secondary pattern : Is "an extension of the primary. In the place of each pair of present and past tense finite (word) forms in the primary pattern, there is an infinitive preceded by one of the secondary (modal) auxiliaries." (Palmer 1968: 105)

Sentence : "a group of words including a finite verb and expressing a complete idea ; it begins with a capital letter and ends with a full stop, question mark or exclamation mark" (Dykes 2007: 207)

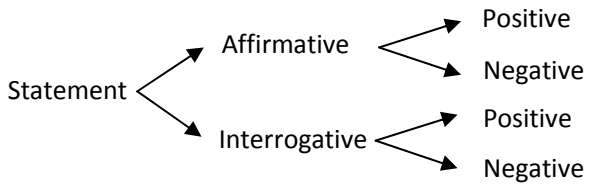
Sequencing : It consists in "ordering a set of teaching materials so that they follow some logical order" (Davis 2007: 167)

Simple phrase : In our study, the simple phrase results from a structure that contains only one governing unit.

Simulation, linguistic **:** It is "the abstract and hypothetic construction by which we try to reproduce, simulate, the generating mechanism of well formed sentences which we postulate in a given interiorized grammar" (Germain & Seguin: 32).

Source sequence : It is the kernel sequence. It is the sequence on which no transformations have been applied.

Statement types



Stem : Cf. base form

Subject complement : It is "the noun phrase or adjective phrase that follows a linking verb: *a baker* and *very wise* in *He is a baker* and *She is very wise.*" (Wardhaugh 2002: 278)

Subjective case pronouns : Subjective case pronouns: *I*, *we*, *he*, *she*, *they*, *who.* Cf: table 4-1 (Quirk & Greenbaum 1988: 102). "The subjective forms are used as subject complement: He hoped the passenger would be Mary and indeed it was she." (Ibid.: 103)

Subject-verb agreement : It is "the inflectional marking required by a finite verb because of its subject: *I go* but *he goes*, and *John sings* but *The boys sing"* (Wardhaugh 2002: 278)

Suppression : Alternation with zero

Surface structure : It is "the actual structure of a sentence, which may be derived transformationally from an abstract or d(eep) structure." (Wardhaugh 2002: 278)

T

Ta'aqub : Exclusive alternance

Tamṯīl : It is a simulation of a structure thanks to a *miṯāl:* a pattern (cf. Hadj-Salah 1979).

Tamakkun : The capacity that has a single minimum free sequence of being expanded by receiving additions.

Tark al 'alāma : Zero mark

Tectonie : In our study, it is defined as the enlarged verbal construction generated at the supra-*lexical* by the structure (R → T1, T2, T3 ± D) in English

Tense : It is the "grammatical feature or category expressing a temporal relation between the event described by the verb and the moment of utterance. Tense has been analyzed either as a morpho-syntactic feature of INFL, or as a category T in its own right. Traditional tense features are past, present and future." (Kerstens & al. 1996)

Tikrār : It is the possibility of repeating the same position more than once. In our study, we saw that this recursion is possible thanks to the position of the second governed term. Cf. Recursion.

Time : "Time is a universal, non-linguistic concept with three divisions: past, present, and future…" (Quirk & Greenbaum 1988: 40)

Transformation : Addition (or insertion), deletion, movement and affix-hopping are instances of transformational rules.
"'Transformational rules' are intended to show the relationship between sentences with the same meaning but a different grammatical form. A rule to show the link between the active and passive sentence can be represented as follows (Crystal 1987: 97): NP1 + V + NP2 → NP2 + Ven + by + NP1" (Hewings 2005: 48). It is "one of the processes involved in changing a d(eep) structure into a s(urface) structure." (Wardhaugh 2002: 278).

- In our study, a transformation is the operation through which we go from the aṣl to the far' and vice versa.

Transformational rule : cf. Transformation

Transitive verb : It is "a verb that can take a direct object and be passivized: *steal* in *He stole the money* and *the money was stolen"* (Wardhaugh 2002: 278)

- It occurs in the environment «_____ NP # *the dog bit the man* / *the children thrashed the dog*» and not «*_____ #» **the dog bit*» (Cf. Brown & Miller 1980: 50)
- In our study this verb occurs in the *tectonie*s of the type (R→T_1, T_2) ± D

U

Ungrammatical : It is "a form or arrangement that the language does not allow: */parzt/ and **He*

not can't go." (Wardhaugh 2002: 278)

Universal grammar : It is "the hypothesized set of principles that underlie the grammars of all human languages. Although the term does not necessarily imply analyses developed within the framework of Government/Binding theory, UG is often discussed in terms of such analyses" (Odlin 1994: 331)

V

Verb : "part of speech expressing doing, being, or having" (Dykes 2007: 207)

For us, it is the linguistic unit that is generated by the pattern of the verbal lexie.

Verbal form : "Many English verbs have five forms: the base [e.g. *call*, *take*], the -s form [e.g. *calls*, *takes*], the past [e.g. called, talked], the -*ing* participle [e.g. *calling*, *taking*], and the -*ed* participle [e.g. *called*, *taken*]." (Quirk & Greenbaum 1988: 26)

Verbal *lexie* pattern : Structure that generates verbal *lexies*

Voice : We speak of the voice "of a verb, indicating active or passive" (Dykes 2007: 207)

W

Waṣl : Concatenation. An element is simply added, *i.e., mawṣūl*, if it does not provoke any change in the element to which it is added. It is opposed to the *binā'*.

Z

Zawā'id : Cf. additions

Zero morpheme : Null morpheme. Cf. *tark al-'alāma.*

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تحليل لساني للّغة الإنجليزية وفق النظرية الخليلية الحديثة واستخلاص ما يمكن استغلاله في الميدان التعليمي
– مستويي اللفظة والتركيب نموذجا –

دراسة مقدّمة ضمن متطلبات الحصول على شهادة دكتوراه العلوم –تخصص لسانيات–

جامعة الجزائر 2 من قبل الطالبة: فتيحة خلوت

تحت إشراف الأستاذ: كمال خالدي

يهدف هذا البحث إلى عرض المفاهيم الأساسية التي ترتكز عليها النظرية الخليلية الحديثة والنظر في كيفية تطبيقها في دراسة وتحليل اللّغة الإنجليزية. والوصول إلى اقتراح حدود إجرائية على أساس العمليات التحويلية التي تسمح بتفريع التراكيب الفعلية من بعضها البعض، وكذا تحديد التراكيب الفعلية البسيطة والمركبة في اللغة الإنجليزية تحديدا صوريا وتمييز الأفعال المساعدة عن باقي الأفعال التامة. وبناء على هذا الأساس قمنا بإنجاز برمجية تتألف من ثلاثة أقسام: المحلّل الذي يقوم على الدراسة اللّسانية المقترحة بغرض تقييم القدرة الإنتاجية للحدود اللسانية للفعل الإنجليزي، والمحوّل والممرّن. وتهدف هذه البرمجية إلى تحديد كل خصائص التراكيب الفعلية التي يقوم المتعلم/المستخدم بإدخالها بوساطة لوحة المفاتيح، والتمرّن بتحويل صيغ هذه التراكيب إلى ما يقابلها في حالات: الإثبات والنفي، الاستفهام، الصيغ التامة والمستمرة، الصيغ المبنية للمعلوم والصيغ المبنية للمجهول، وأخيرا تحويل صيغ الفعل إلى الماضي والمضارع.

قسّمنا بحثنا إلى 6 فصول متكاملة تسبقها مقدمة عامة وتتلوها خاتمة في الأخير. تحوي مقدمة البحث طرح الإشكال، والأسباب التي دفعتنا إلى اختيار الإطار النظري للنموذج الخليلي الحديث مرجعاً لاستخلاص أهم مبادئ التحليل اللغوي عند علماء العرب، وكذا دواعي توجيه العمل نحو كيفية الاستفادة منه في مجال تعليم اللغة الإنجليزية وتعلّمها.

الفصل الأول : ويضمّ عرض للنظرية الخليلية الحديثة من خلال شرح أهم المبادئ التي اعتمد عليها علماء العرب في تحليل اللغة، ثمّ تحديد المستويات اللغوية التي يستند إليها التحليل في هذه النظرية.

الفصل الثاني : وفيه نصف المنهجية المتّبعة في استغلال مبادئ النظرية الخليلية الحديثة لدراسة اللّغة الإنجليزية دراسة لسانية مدعّمة ببعض النماذج التطبيقية المستخلصة من الدراسة المنجزة سابقا في إطار الماجستير، والوصول في الأخير إلى عرض أهمّ

النتائج المحصّل عليها فيما يخص التراكيب الفعلية البسيطة التي يكون فيها الفاعل عبارة عن ضمائر منفصلة.

الفصل الثالث : وفيه عرضنا الأسباب التي أدّت بنا إلى مراجعة الحدّ التفريعي للفظة الفعلية في اللغة الإنجليزية المقترح في رسالة الماجستير، ثمّ حددنا مستوى اللفظة ومستوى ما فوق اللفظة وعرّفنا الوحدات اللغويّة في كلّ منهما.

الفصل الرابع: قمنا في هذا الفصل بتعميق الدراسة اللسانية ؛ وذلك من خلال تحليل التراكيب الفعلية التي تحوي أفعالا مركّبة The catenatives.

الفصل الخامس: وهو الفصل الأخير للبحث اقترحنا فيه تطبيقا تعليميا بناء على الدراسة اللسانية المقدّمة، وذلك باستغلال البرمجية الحاسوبية المنجزة لتحليل وتحويل التراكيب الفعليّة البسيطة.

وفي الختام نشير إلى أن هذه الدراسة تبقى أولية رغم النتائج المحصّل عليها فهي تحتاج إلى تعميم التحليل على اللغة الإنجليزيّة بأكملها؛ لأن دراسة باقي أنواع الوحدات اللغويّة مثل الاسم قد يؤدي إلى تعديل الحدود المقترحة للفظة الفعليّة. وأهمّ نتيجة استخلصناها من الدراستين[1] اللتين قمنا بانجازهما هي ما تفتحه من آفاق للبحوث المستقبلية التي ستنجز في اللسانيات الإنجليزية والدراسات التقابليّة بين اللغتين العربية والإنجليزية. هذا وقد يفتح الاقتراح المقدّم في القسم الأخير من العمل الباب لآفاق بحثيّة هامة في ميادين تطبيقية مثل التعليم باستخدام الحاسوب والمساعدة على الترجمة الآليّة[2].

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[1] الدراسة الأولى بعنوان: "تطبيق النظرية الخليلية الحديثة لدراسة الفعل في اللغة الإنجليزية في مستويي اللفظة والتركيب" والتي ناقشناها في إطار الماجسير والثانية بعنوان: " تحليل لساني للّغة الإنجليزية وفق النظرية الخليلية الحديثة واستخلاص ما يمكن استغلاله في الميدان التعليمي: مستويي اللفظة والتركيب نموذجا "

[2] "تتمثل الترجمة الآلية في استعمال الحاسوب لترجمة النصوص من لغة هي المنطلق، إلى لغة الهدف. ويميّز الباحثون بين الترجمة الآلية التامة، وهي التي تجري دون تدخل الإنسان، وترجمة بمساعدة الحاسوب تقتضي تدخل المترجم البشري للتدقيق والمراجعة." صابر الجمعاوي. الترجمة الآلية من الإنجليزية إلى العربية: قراءة في تجربة المسبار. التعريب. العدد 37. ديسمبر 2009. ص: 115.