
Towards an Adequate Expression Module for Modular Layered Functional Grammar

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Abstract:

Modular layered functional grammar (MLFG) is a linguistic model I proposed as a post standard version of functional grammar. In this study I will be more specifically concerned with one of its component, i.e what I have called "Morphosyntactic component", and will focus on its interfaces as well as the different devices used to encode various (pragmatic and semantic) functional information coming from different layers and even from different moduls.

Keywords:

Towards an adequate Expression Module- functional grammar- Morphosyntactic component- moduls.

نحو قالب صرفي تركيبى كاف لنحو وظيفي طبقي قالبى

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الملخص:

يشكل ما اقترحناه تحت تسمية النحو الوظيفي الطبقي القالبى، في مشروعنا اللساني الوظيفي العربي، أحد النماذج اللغوية التي تلت النموذج المعيارى المتوكل (2003م) نروم في هذا البحث الوقوف بشكل مدقق عند المكون الصرفي التركيبى لتبيان الوجائى التي يتضمنها والآليات التي يشغلها للتعبير صرفا وتركيبا عن السمات الوظيفية (تداولية ودلالية) الواردة عليه من طبقات تحتية مختلفة؛ بل من قوالب متباينة.

الكلمات المفتاحية:

النحو الوظيفي الطبقي القالبى- المكون الصرفي التركيبى- الوجائى- السمات الوظيفية- من طبقات تحتية.

0. Introduction

One of the most salient facts in the history of the theory of Functional Grammar is that the most important recent transformations it has undergone have particularly focused on the (pragmatic and semantic) underlying representation (UR), keeping almost unmodified the standard version of Expression Rules (ERs) with its various inadequacies extensively discussed in Bakker (1999 and 2001). Moreover, the inadequacies seem to have been increased throughout these developments.

The main aim of this study is to examine the problems that the standard ERs component could face if we want to incorporate it, as a grammatical module, into the recently proposed new architecture of FG (as discussed in Mackenzie and Gomez-Gonzales (2002)), which I would suggest to call: "Modular Layered Functional Grammar" (hereafter MLFG).

In general, these problems can be divided into three main classes relating to (a) the underlying representation constituting the input of ERs, (b) the procedure of the derivation of linguistic expressions itself and (c) the delivered constituent structure (CS).

It will become clear throughout the discussion of these three kinds of problems that an updated grammatical module aiming at fitting in with the new model of FG must be conceived of and designed in such a way that it can meet the following requirements: (a) to deal with an

extended and enriched UR whose parts may come from different modules, (b) to operate with a more constrained set of ERs and (c) to deliver explicit and fully specified constituent structures for all the distinguished discourse categories including texts.

1. The input: From a unique restricted to a transmodular extended UR

The UR on which ERs are meant to operate in the standard model of FG (Dik (1997)) is reduced to the only underlying clause structure. However, several recent different but related works (Kroon (1997), Henegeveld (1997), Vet (1998) and Moutaouakil (1998) among others) have tried to achieve two main goals in this connection: extending the current UR in order to enable it to account for the structure of transclausal (or textual) stretches of discourse on the one hand and enriching it by additional necessary layers or layer values on the other. I will concentrate here on the extension and the enrichment of UR proposed in MLFG.

1.2. MLFG: An overview

Assuming that this new model of FG has by now become familiar to the FG community, I will give no more than a sketchy account of the basic assumptions backing it and of its main general organizational features.

1.2.1. Basic assumptions

The following general assumptions can be taken as defining MLFG in contrast with the previous versions of FG including the standard model:

Assumption1: Modularity and layering are not conflicting features; rather they may - and perhaps must- co-occur in the same model.

Assumption2: The association of modularity and layering holds for all the recognized discourse categories including texts.

Assumption3: The pragmatic properties should be accounted for in a separate module, independent from but related to the other modules.

Assumption4: Three modules –at least– are involved in the generation (and conversely in the interpretation) of linguistic expressions: pragmatic, semantic and grammatical modules.

Assumption5: The way in which the involved modules function must reflect the successive phases of the production speech process which are: (a) deciding on a communicative purpose, then (b) selecting a relevant informational content and then (c) encoding it in an appropriate syntactic form. Accordingly, the pragmatic module is linked to the semantic module, which is linked, in turn, to the grammatical module.

Assumption 6: In the case of linguistic expressions without a specified semantic content, the pragmatic module is linked directly to the grammatical module.

1.2.2. Instantiations

With these basic assumptions taken as a point of departure, different organizations of MLFG can be envisaged. Currently, two slightly different instantiations of MLFG (Hengeveld (2002) and Moutaouakil (2002)), as far as I know, have been proposed. To Hengeveld's version, commonly referred to as Functional Discourse Grammar (FDG), an important improving complement has been proposed in Bakker and Siewierska (2002) which provides it with an revisited expression component. In the remaining of this study, I will try to do the same for the other version, the one presented in Moutaouakil (2002). More specifically, I will discuss the main general requirements to be met by any expression component which aims to be implemented as a grammatical module into MLFG, as well as the different open options for linking UR and CS.

.In Moutaouakil's proposal, the organization of MLFG can be summarized as follows:

- (i).A «discourse» is any complete communicative unit, i.e. any utterance achieving a communicative purpose in a given setting.
- (ii) The recognized discourse categories and the hierarchical relationships they entertain in a trans-sentential discourse can be visualized as follows:

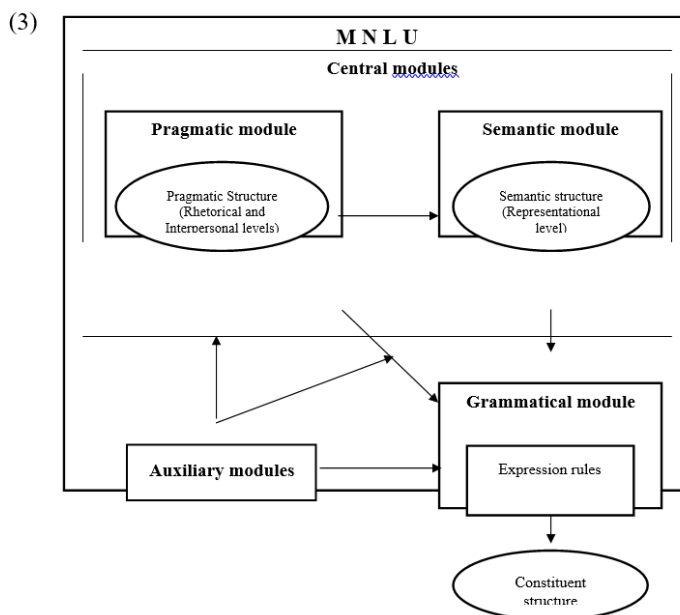
The Model of Natural Language User (MNLU) is conceived of as involving two types of modules: central modules (Pragmatic, Semantic and Grammatical modules) and auxiliary modules (such as Epistemic, Logical, Social and Perceptual modules) which do not belong to the Grammar proper.

Notice that the tasks fulfilled by the cognitive and the contextual modules in Hengeveld's proposal can be partly taken care of by the epistemic and the perceptual modules of MNLU.

(vii) As for the working of MNLU, the pragmatic module takes care of the Rhetorical and the Interpersonal levels specifying a pragmatic structure which is mapped onto a semantic (representational) structure handled by the semantic module, the result serving as input to the grammatical module whose ERs deliver a morphosyntactically and phonologically specified CS. In cases of representationally empty linguistic expressions (expressions without semantic content), the pragmatic structure serves as a direct input to the grammatical module.

This can be visualized by diagram (3)

1.2.3. Implications for ERs



It becomes clear from this brief account that ERs will have now to operate on a quantitatively and qualitatively quite different UR. The new underlying aspects that ERs are expected to come to grips with are summarized in the following three sub-sections.

1.2.3.1. Extended UR

As already mentioned, in the standard model UR does not go beyond the structure of the clause. In MLFG, as implied by (i) and (ii) above, UR is designed to also cover the sentence as well as the text structures. As one can expect, this extension arises the following questions which must be taken into account in any revision of the current ERs:

- a) If we assume that (2) is the underlying text structure, how is it

converted into a surface structure?

- b) How could morphology, syntax and phonology look like at the text level?
- c) How can we deal with the fact that the (illocutionary, modal, temporal...) operators of a text are realized on its constituting clauses following what Dik (1997b) calls "Inheritance Principle"?
- d) Can we postulate ordering templates for the different passages (or episodes) of a text?
- e) How are the clauses of a text (or a passage) ordered?
- f) What are the nature and the form of textual ERs? To which extent the current (clausal and phrasal) ERs can serve as textual ERs?

In this study, only some of these questions will be partially answered; a close examination of the others will be post-poned for further research.

1.2.3.2 Enriched UR

In MLFG, UR is enriched, as (2) shows, by the addition of five new layers. These are: the (event, type and style) layers of the rhetorical level, the interactional and the quantity layers of the interpersonal and the representational levels respectively. What does the addition of these layers imply for ERs is the following:

- a) Other underlying features are to be taken into account in the application of ERs.
- b) Among these features, a distinction has to be made, as regards their surface realization, between those which are expressed lexically and those which are expressed grammatically (i.e. morphologically, syntactically or phonologically).
- c) Another distinction should be made between the simultaneous and the sequential ERs responsible for the realization of these features when they combine with the others.
- d) As for the latter kind of ERs, two interdependent questions arise: First,

how are these rules ordered? Second, to which extent does their ordering reflect the underlying scope relations of the operators they are meant to realize?

1.2.3.3. Transmodular UR

Let us recall that the application of ERs in the standard model takes place within a unique module (i.e. the so called « grammatical module » within which pragmatic, semantic and formal aspects are represented altogether) and that these rules take as input a unique and unified UR. In MLFG, ERs are expected to work within a maximally restricted grammatical module (reduced in fact to the sole ERs) and to operate on a multiple UR whose parts come from many different modules.

The consequences of the transmodular composition of UR can be summarized as follows:

- a. ERs must take into account not only the information coming from the central (pragmatic and semantic) modules but also from the relevant information provided by all the solicited auxiliary modules. Let us give some examples:

- (4) a- Que fait-il
b- Qu'est-ce qu'il fait?
c- Il fait quoi?
«What does he do?»

- (5) a- huwa nta msafir?
Int you traveling
«Are you going to travel?»
b- lahu nta msafir?
Int you traveling
«Are you going to travel?»

The difference between French sentences (4a-c) resides in the used interrogative pronoun and in the order of constituents. It is clear that the three sentences are semantically as well as pragmatically equivalent. They can be differentiated only on social grounds: (4b) pertains to a rather

standard register while (4a) and (4b) are more or less marked. The same can be said of constructions (5a-b) from Colloquial Egyptian Arabic: (5b) is the bedouine regional variant of the standard interrogative construction (5a). This register difference is marked by the opposition of the interrogative particles *huwa* and *lahu*.

The constructions exemplified in (4a-c) and (5a-b) point to the necessity for the ERs to be also fed by the information coming from the auxiliary social module in order to account in an adequate way for the forms and the constituent ordering involved in interrogative clauses.

- b. The way in which all the relevant underlying information is to be represented must be uniformized. The gain for the formulation and the working of ERs is obvious. The question here is: Is the current FG style underlying structure adopted for the representation of the pragmatic and the semantic information suitable to also encode the information coming from other (auxiliary modules) such as the social or the perceptual modules for example?
- c. The transmodular character of UR does not pose only the problem of representing the information coming from different modules but also the one of the order in which ERs have to be applied. More specifically, in the cases where other modules than the central tree are also involved, on which module ERs have to operate first?

2. The derivation process: From free to constrained rules

Bakker (1999 and 2001) shows that the most fundamental problem that the standard ERs face is that they overgenerate and undergenerate at once. He arguably claims that this problem stems from the fact that these rules are not constrained enough. In the same vein, I will examine the way in which ERs must be optimally constrained, concentrating on those constraints, which can enable them to constitute an adequate grammatical module for MLFG. In general, we can distinguish between two types of constraints: (a) global constraints regulating the ERs component with respect to the general standards of

adequacy as conceived of in FG and (b) specific constraints monitoring its internal structure and its actual working. Let us call these two types of constraints: «regulative constraints "and" constitutive constraints" respectively.

2.1. Regulative constraints

The theory of FG is expected, as well known, to try to attain three major adequacies (Pragmatic, Psychological (or cognitive) and Typological adequacies) which serve as standards of its descriptive and explanatory evaluation. In this section, I will be chiefly concerned with some of the implications of these three adequacies for ERs. These implications will be considered as global constraints on the formulation of the principles and rules of this component.

2.1.1. Pragmatic constraints

For ERs to be pragmatically adequate rules, they must satisfy three main constraints which can be called "Function Dependence Constraint", "Functional Completeness Constraint" and "Functional Priority Constraint". These constraints can be formulated as follows:

Function Dependence Constraint: Given the instrumental status of linguistic expressions in the communicative process, their form is determined by their function.

What this constraint technically means is that morphological, syntactic as well as prosodic ERs must operate on the basis of the functional properties of the linguistic expressions to be derived. We will see below that this constraint is not always applicable since several formal aspects seem to display a certain autonomy.

Functional Completeness Constraint: All the relevant functional information is to be taken into account by ERs be it provided by the pragmatic module proper or by other modules such as the social and the perceptual modules.

Functional Priority Constraint: All functional features are to be specified prior to the application of ERs.

The most important implication of this constraint is that no functional information should appear once ERs have applied.

2.1.2. Psychological constraints

From the psychological standard of adequacy as defined in Dik (1997a: 13), we can derive the following two constraints:

Constraint1: In order to reflect the production as well as the comprehension processes, ERs should be devised in such a way that they can be integrated into the store of elements and principles used in both the production (generation) and the interpretation models of MLFG. This means that ERs must be formulated so as to permit to go from the UR of a linguistic expression to its surface form and the other way around as well.

Constraint2: CS must be as transparent as possible with respect to UR. Such a constraint-which we can call «Transparency Constraint»- has some crucial implications, which can be summarized as follows:

- a. The distance between UR and CS is expected to be as minimal as possible, which means that the derivation should be handled by a strict minimum of rules;
 - b. Although of a different nature, the configuration of CS must reflect, as far as possible, the elements present in UR;
 - c. Consequently, it is preferable to transpose the UR categorial and sub-categorial labels at the level of CS;
- d. The hierarchical relationships entertained by the UR elements (operators and predicates) should be projected whenever possible onto the word order level of CS, which permits to minimize the intervention of the linearization rules;
- e. All the information required by ERs being supposed to be coded in UR, the UR slots should remain present in CS even when they are not filled.

2.1.3. Typological constraints

Since its earlier version, the theory of FG has been applied to a great number of typologically quite different languages. This has obviously enabled it to test the typological applicability of its principles and rules, mainly those which relate to the formal (morphological and syntactic) aspects of linguistic expressions. In this sense, we can say that an important step toward typological adequacy has been made. In what follows, I would like to suggest to extend the notion of typological adequacy and to reinforce, in so doing, its constraining power. A grammar which aims to be typologically adequate should be capable to properly describe not only any language type but also any discourse type (and style) as well as any discourse category (in the sense defined above).

2.1.3.1. Language type:

I have tried to show elsewhere (Moutaouakil (fc)) that the different quantitative and qualitative actualizations of ADS can provide us with a language typology based on the various choices the languages of the world can make within this universal abstract structure. A first major dichotomy distinguishes between two main language types, which can be called "More pragmatically oriented languages" and "More semantically oriented languages". The main property of the former type is that it privileges the rhetorical and the interpersonal levels while in the latter type the proeminence is given rather to the representational level. As regards the formal aspects, the languages pertaining to the former type tend to display a highly pragmatically motivated syntax. In such languages, three main facts are to be noted concerning their word order. First, the pragmatic general principles (such as "Pragmatic Highlighting Principle") of constituent ordering get their full relevance when applied to these languages rather than to others. Second, the word order is mainly determined by pragmatic functions. In SMA, for example, syntactic functions are expressed by means of (Nominative, Accusative and Genitive) cases whereas pragmatic functions are realized by word order. Third, a greater number of templates is involved. More specifically, not only the clause exhibits a P1 position. Each category (proposition,

predication, term-phrase) has its own initial position. The following example from SMA illustrates the point:

- (6) hal?inna Zaydan qad kataba r-risalata
Int mod-part zayd-acc mod-part wrote-he the-lette-acc
«Did Zayd really write the letter?»

In (6), hal is an interrogative particle canonically placed in P1. ?inna and qad are both modal particles with the difference, however, that the former pertains to the proposition while the latter belongs to the (extended) predication. The syntactic distribution of such particles strongly points to the necessity for the template structure of SMA (and all languages of the same type) to contain, in addition to the wellknown clausal P1, a propositional and a predicational initial positions.

2.1.3.2. Discourse type and discourse style

Discourse type and discourse style are represented in the UR part of ADS as full rhetorical layers, as is clear from schema (2). The reason for this is that these two features have, as arguably shown in Dik (1997b) and in Moutaouakil (1998), various significant impacts on the internal composition of UR as well as on its formal realization. Here are some examples:

- (7) a- Le marquis sortit à cinq heures
b- Le marquis est sorti à cinq heures
«The marquis went out at five o'clock»
(8) Simon Dik publie la première version de la GF en 1978
(9) «Simon Dik has published the first version of FG in 1978
(9) a- Il viendra demain, peut-être
b- Peut-être viendra-t-il demain
c- Peut-être qu'il viendra demain
«Maybe he will come tomorrow»

The examples in pair (7a-b) express the same state of affairs but differ from each other as regards the verb form. As well argued in Benveniste (1966), the "Passé Simple" form (as in (7a)) and the "Passé

Composé" form (as in (7b)) are features of two quite different discourse types, namely "Récit" and "Discourse" respectively.

In (8), the verb exhibits a discrepancy between its actual form and its semantic value. Here, the present form expressing Past Tense is one of the features characterizing the so-called "historical narrative" discourse type.

As for the constructions exemplified in (9a-c), the distinguishing feature they exhibit and which determines their formal aspects (the place of "peut être" and the Subject inversion) is a discourse style one: (9a) is « normal » while (9b) and (9c) are rather formal and familiar respectively.

2.1.3..3. Discourse category

By discourse categories, I mean the different items of DCH represented in (1) which are: text, sentence, clause, term-phrase and word. Let us recall that I assume that these categories are structurally isomorphic in the sense that they conform to GPH, i.e. that their underlying structure results from a parametrized actualization of ADS. The question that arises now is: How could this underlying parallelism be maintained throughout the application of ERs?

Optimally, the objective that the grammatical module of MLFG should try to attain is threefold: (a) to build up the CS of any discourse category including Text, (b) to make it possible that a surface structural isomorphism also obtain between the categories at hand and (c) to make the surface isomorphism as close as possible to the underlying one.

A certain number of issues can be re-examined in the light of this objective. Let us take as example what we can call "inheritance phenomena" and let us concentrate more particularly on those involved in a whole text. Dik (1997b: 416) points out that "global discourse decisions (such as illocutionary and temporal decisions) "are relevant to the whole discourse or to one of its subparts rather than accidentally to the wording of a single clause." This can be generalized, as shown in Moutaouakil (2002), to other global features like modality, discourse type and discourse style as well. What this technically means is that these

features are first fixed for the whole text then specified, by inheritance, on its constitutive clauses. In the light of this inheritance principle, we can conceive of the UR of a text as a fully actualized ADS with global operators and a sequence of clauses reduced to their mere nuclear predications. The formal realization of such a structure can take a priori two ways: in a conveyor-belt system of ERs, the text operator values can be "copied" as auxiliary operators on the successive clauses; alternatively, if we think of the text CS as a tree-like structure, these operator values can be inherited in an ordinary way by the clauses from the text standing as a mother node

2.2. Constitutive constraints

Constraints of this type monitor not only the derivation mechanisms of ERs but also the input they have to operate on.

2.2.1. Input constraints

We have mentioned above some implications for ERs of adopting a UR such as (2). Such implications should be interpreted as further input constraints on the rules responsible for the conversion of this UR into a constituent structure. Here is a possible provisional formulation of these constraints:

Constraint1: ERs are responsible for the derivation of all the recognized discourse categories, including texts.

Constraint2: According to GPH, the derivation of these discourse categories should be taken care of by similar rules.

Constraint3: ERs must take into account the information provided by all the involved modules.

2.2.2.. Derivation constraints

In the standard model (Dik 1997b), the actual syntactic form of linguistic expressions is taken as the result of the application of three subsets of ERs: morphological, syntactic and prosodic rules which operate in this order. As it stands, the ERs component of this model faces three

major problems relating to: (a) the ordering of morphology and syntax, (b) the place of prosodic rules and (c) the existence of function independent formal phenomena.

2.2.2.1. ERs ordering

The order in which ERs are intended to apply seems to turn out to be a problematic issue. The way in which inflectional morphology, placement rules and prosody are currently sequenced does not go without serious problems, as we will see in what follows.

2.2.2.1.1. Morphology vs syntax or morphosyntax?

In discussing the various possible interactions between the different ERs, Dik (1997a: 340-42) points out that there are many cases of order dependent morphology where form- determining rules must operate on the output of order- determining rules. To illustrate this point, he gives the examples of the so-called "Sandhi" phenomena.

Building on similar phenomena in many different languages, Bakker (1999 and 2001) emphasizes the fundamental nature of the problem at hand for the Standard ERs and considers it as one of the main sources of their undergeneration. In the same vein, I would like to add some other significant examples from Arabic and French.

Consider the following facts:

- (10) a- lqit had r-rjal
met-I these men
«I met these men»
b- lqit r-rjal hadu
met-I men these
«I met these men»
- (11) a-qrit had l-ktab
read-I this the- book
«I read this book »
b-qrit l-ktab hadaya
read-I the book this

-
- «I read this book»
(12) a-bakrah ir-ragil dah
hate-I the-man this
«I hate this man»
b-ihs?ala di ragil!
Pejorative-Part on this man
«What a detestable this man is!»
(13) a-Les enfants voyageront cet été, Marie exceptée
b- Les enfants voyageront cet été, excepté Marie
«The children will travel this summer, but not Marie»

The constructions exemplified in (10a-b), (11a-b) and (12a-b) show that the form of the demonstrative in Moroccan, Tunisian and Egyptian colloquial Arabics respectively is order dependant. In these languages, the pre-posed demonstrative takes a form which is quite different from the one it takes when it follows the head noun. A different but related phenomenon is exhibited in the french examples (13a-b). The comparison between the members of this pair shows that in French certain adjectives lose their agreement properties when they occur before the head noun.

We can also give examples of order dependent forms from other areas of morphology. In Modern French, the presentative expression *c'est qui/que* has become a mere discontinuous embracing morpheme used to co-indicate the Contrastive Focus function. What is noteworthy in the behaviour of this morpheme is that it can only occur when the focussed constituent is placed in the P1 position as it becomes clear from the contrast between (14a) and (14b):

- (14) a- *C'est Jean que j'ai rencontré*
«It is Jean that I met»
b- **J'ai rencontré c'est Jean que*

The second example is what the ancient Arab grammarians call «gouvernement conflict». Let us consider the following two sentences:

-
- (15) a- raʔani wa raʔaytu Zaydan
saw-me and saw-I Zayd-acc
«Zayd saw me and I saw him»
b- raʔaytu wa raʔani Zaydun
saw-I and saw-me Zayd-nom
«I saw Zayd and he saw me»

The fact exemplified here is that a same noun is governed by two coordinated occurrences of the same verb. The contrast between (15a) and (15b) shows that the doubly governed (or « disputed ») noun takes the case assigned by the nearest occurrence of this verb

To come to grips with this problem, two solutions have been suggested in Dik (1997) and in Bakker (1999) and (2001). Dik proposes a "sandwiching" procedure for ERs according to which these rules operate in the following way: in the case of the order independent forms, form-determining rules apply first then placement rules while in the case of order dependent forms, a second set of specific form-determining rules (such as Sandhi rules) operate on the output of placement rules.

Alternatively, in the revisited version proposed by Bakker, the stage of the computation of forms (morphological rules) and the stage of their linearization (ordering syntactic rules) are conflated, as we will see in more details below.

2.2.2.1.2. The place of prosody

Dik (1997b) devotes a whole chapter to the prosodic aspects of linguistic expressions. It becomes clear from his discussion of the way in which prosodic contours can be generated in FG that the assignment of accent and intonation takes place on the basis of the information provided in UR, namely pragmatic functions and the illocutionary operator value respectively. The question arising here is this: if prosodic ERs apply after morphosyntactic ERs, how the relevant pragmatic information could be kept visible for them? A suggestion will be made below which could contribute to the solution of such a problem.

2.2.2.2. Function independent formal expression

Function independent expression characterizes the constituents with a formal (morphological or syntactic) expression other than the one, which conforms to their underlying functional status. The constructions involving such constituents are extensively discussed in Dik (1997 b) but the problem they pose to the standard ERs is not examined although it is of a fundamental nature.

Let us have a close look to the following constructions from Standard Modern Arabic:

(16) a- Hindun saminatun

Hind-nom fat-nom

«Hind is fat»

b- kanat Hindun saminatan

was Hind-nom fat-acc

«Hind was fat»

(17) a- Zaydun qadimun

Zayd-nom coming-nom

«Zayd is coming»

b-ʔinna Zaydan qadimun

Cert Zayd-acc coming-nom

«Certainly, Zayd is coming»

(18) a- yaskunu Zaydun l-bayta

lives Zayd-nom the-house-acc

«Zayd lives in the house»

b- yaskunu Zaydun fi l-bayti

lives Zayd-nom in the-house-gen

«Zayd lives in the house»

The contrast between the members of pairs (16), (17) and (18) shows that the insertion of a copular verb such as *kan*, a modal particle and a preposition such as *ʔinna* and *fi* modifies the case marking of the predicate, the subject and the locative term-phrase respectively. More

specifically, the functionally determined case is neutralized and replaced by, say, a rather structurally determined case. In (16b) and (17b), the functional nominative case of the adjectival predicate and the subject noun is replaced by an accusative case and in (18b) the accusative case of the head noun of the prepositional phrase becomes a genitive case.

The case shift these constructions exhibit is not an isolated phenomenon. Other no less significant facts can be found in SMA. Witness the following b-sentences where the introduction of the negative and the modal particles, *lan* and *ʔan* respectively, results in the conversion of the verbal suffix *u* into *a*:

- (19) a- *yaktubu Zaydun r-risalata*
writes Zayd-nom the- letter-acc
«Zayd writes the letter»
b- *lan yaktuba Zaydun r-risalata*
Neg writes Zayd nom the letter-acc
« Zayd will not write the letter »
- (20) a- *yusafiru Zaydun l-yawma*
travels Zayd-nom the- day-acc
«Zayd is travelling today»
b- *ʔatamannaʔan yusafira Zaydun l-yawma*
hope-I that travels Zayd-nom the day-acc
«I hope that Zayd travels today»

The problem this kind of facts pose is this: If the functional case assignment and the inflectional realization of the modal-tense-aspect features are handled, as wellknown, by ERs operating directly on the UR relevant information, which rules would be responsible for the pure (non-functionally determined) structural features and at which stage of the derivation should these rules apply?

In fact, the phenomenon involved in constructions (16 b), (17 b), (18 b), (19 b) and (20 b) should be related to a more general and more important issue and taken as one of the manifestations of what Bakker

(2001: 2) calls "function independent principles of expression". Notice that the manifestations of this kind of principles can be found not only in the morphological area but in the realm of syntax as well. The functionally motivated general principles extensively discussed in Dik (1997b) surely enable us to properly describe and explain the constituents ordering in a great number of typologically quite different languages. This, however, does not exclude that some function independent ordering phenomena escape to these principles. Consider, for instance:

- (21) a- qadima Zaydun
 came Zayd-nom
 «Zayd came»
 b-ʔinna Zaydan qadima
 Cert Zayd-acc came
 «Certainly, Zayd came»
 c-*ʔinna qadima Zaydun

(21a) displays the canonical neutral Verb-Subject order typical to main clauses in MSA. In (21b), this order is obligatorily reversed (as witnessed by the oddness of (21c)). No functional factor, as far as I can judge, can be taken as the source of the Subject pre-posing in (21b). The only available explanation is the introduction of the modal particle ʔinna.

What is involved in (21b) can be taken as an instantiation of the more general phenomenon sometimes called "Attraction": certain constituents (predicates, particles etc...) in given positions tend to attract other given remote constituents in such a way that these constituents land in a position other than the one they are normally assigned on the basis of their functional status.

Notice that the particle ʔinna displays two correlated properties: (a) attracting the Subject term-phrase and (b) assigning to it, as we have already seen, a formal expression (i.e. an accusative case) which masks its functionally determined case.

In sum, the existence of such function independent principles poses a real problem to the standard ERs which seem to not take into account possible pure structural aspects. The big question here becomes: How can a functionally oriented grammar like FG deal with the autonomous formal (morphological, syntactic and prosodic) aspects of linguistic expressions?

3.The output: some options for the CS representation

As Bakker (2001) rightly points out, no concrete specified CS has been proposed in the standard FG literature. Auwera's and Bakker's proposals (Auwera (1990), Bakker (1999) and (2001)) are, however, two remarkable exceptions. In fact, I think that the representation of CS should be dealt with in the light of a more general issue, i.e. the kinds and the number of the levels in which the different aspects of the structure of linguistic expressions must be represented and the relations these levels can entertain with each others. It is the discussion of this issue that I will try to go into here in some details. I would like to mention, however, that this discussion will not result in the adoption of one precise proposal; rather, it will show that a certain number of proposals can à priori be adopted leaving.

For the sake of clarity, the issue at hand will be approached under two angles: (a) the technical means, which can be used in representing the various aspects of the structure of linguistic expressions and (b) the mode that this representation can take.

3.1. Means of representation

It is wellknown that the elements to be represented in general are of two sorts: functional and formal. The former group of elements subsumes lexical items stating as predicate and (argument and satellite) terms, operators and (semantics, perspectivizing and pragmatic) functions. As for the latter group, we can distinguish between morphological, syntactic and phonological elements.

It has been shown above that the representation of functional and formal elements should meet two major requirements: (a) keeping them neatly distinct on one hand and (b) reflecting the fact that the latter are in general determined by the former on the other hand.

In MLFG, functional elements are represented, as shown above, in the central pragmatic and semantic modules as well as in some other auxiliary modules whereas formal elements are provided by the grammatical module. This transmodular representation of functional elements constitutes the UR on which the ERs of the grammatical module are meant to operate.

We have been concerned, so far, with the nature of the elements to be represented and the modules designed to take care of their representation. Let us now have a closer look to the means by which these elements can be represented. First, it should be noticed that in speaking of "means of representation" we have in mind no more than the mere notational system used to visualize the elements of a structure and their different functional or formal relationships. This becomes clear when we contrast "means of representation" to "mode of representation". By mode of representation, we refer to the way in which linguistic expressions are derived, i.e. to the levels of representation, the relations they entertain with each others and the directionality of these relations. More worthy of note is that the technical means of representation is independent from the mode of representation. So, we can use the same means in different representational modes as we will see below.

As for the representational systems which have been proposed so far in the FG framework in general, it is wellknown that, in the standard model, only UR has received a concrete representation as already mentioned. The notation system adopted is usually a bracheted structure. In Dik (1997a), however, the bracheted structure is replaced by a tree diagram. The first proposal made, as far as I know, for representing CS is presented in Auwera's work on the structure of terms (Auwera (1990)). Although this work is devoted to the term structure only, many

implications of the theory it embodies can be transposable to the other domains. First, the output of ERs is a structure, just as their (UR) input. Second, this structure is a CS to which a Phrase Structure conception can perfectly be relevant. Third, such a CS can be represented by a tree diagram. Fourth, UR is usually represented by a bracheted structure but nothing stands against representing it by means of a tree-like structure. Finally, the global approach proposed by Auwera can be without problem generalized to the clause, sentence and text constituent structures as well in the sense that all these structures can be conceived of as phrase structures representable by tree diagrams. Bakker's work on ERs (Bakker (1999) and (2001)) is more than a study of the configuration of CS and its representation. It implies a substantial revision of the standard ERs component as a whole. It proposes a new conception not only of the means but also of the mode of representation. This is why I propose to discuss it in the next sub-section.

To sum up, the means by which the different (underlying and surface) structures of linguistic expressions can be represented (bracheted expressions, tree diagrams or feature- structures) should be clearly distinguished from the procedure adopted in representing the way in which they are related. From the following discussion, it will become clear that the choice of one of the available notational systems does not necessarily imply a theoretical option and that it is, thus, possible to use a same system (such as tree diagram system) in different conceptions of the derivational procedures.

3.2. Modes of representation

By mode of representation, I refer, as mentioned above, to the way in which the different parts of the structure of linguistic expressions are related to each others. In what follows, I will briefly mention some possible procedures which can fullfil this task before comparing and evaluating the two models proposed so far, i.e. the standard model (which

can be also referred to as «Conveyor-belt model») and the «Dynamic model» put forward by Bakker.

3.2.1. Open options

The possible procedures of representing the different levels of the structure of linguistic expressions and their relationships in general are of two kinds: multi-level and uni-level representations.

- (i) In the former kind of procedure, two different but related levels are distinguished. They are underlying and surface structures. It is this procedure that is adopted in both the standard and the dynamic models with, however, different modes of linking the two structures. In adopting a multi-level mode of representation, one can envisage two possibilities: (a) to map the pragmatic structure into the semantic structure which results in a unified UR as in the standard model, (b) to keep these two structures separated also for expression allowing, thus, the grammatical module to deliver two distinct although related CSs.
- (ii) According to the latter kind of procedure, no distinction between underlying and surface structures is made. The pragmatic, semantic and formal aspects of the clause, sentence or text structure are represented in a same multifaced tree digram. This mode of representation is the one adopted in RRG for example.

3.2.2. Conveyor-belt model vs Dynamic Model

The standard ERs component as discussed in Dik (1997a) is, now, being challenged. One of the competing proposals is Bakker's (Bakker (1999) and (2001)).

Assuming that the two models are familiar to the FG community, I will restrict myself here to the features by which they radically differ from each other.

In the standard model, the derivation process starting from UR as input takes place in three stages corresponding to the successive application of

morphological, placement and prosodic rules. A variant of this three-stages procedure is proposed in the cases of order-dependant forms: morphological rules are divided into two groups, which apply in two stages, before and after placement rules. Concerning the question of how the derived structure is actually represented in this model and given that no example of a complete derivation has been proposed, we have opted in our teaching practice for giving a structural description to the output of each set of ERs using bracheted structures or tree diagrams.

It is possible, I think, to say that the main distinguishing features of the dynamic model proposed by Bakker are the following: First, it continues to take into consideration many principles as well as many mechanisms of the standard model although these mechanisms acquire a new status. Second, stage I and stage II, i.e. Morphological and syntactic ERs respectively, are conflated in a unique stage where the ordering and the formal features are specified at once. Third, the syntactic templates specifying the positional patterns in the standard model are combined into a hierarchical tree-like structure. Fourth, as a consequence, placement rules are re-interpreted as well-formedness conditions on this structure. Fifth, the insertion of the terminal grammatical forms is post-poned as long as possible. Sixth, the resulting structure represented by means of a tree diagram is to be seen not as a static entity but rather as a dynamic representation in the sense that it codes, on the basis of the underlying material, the history of the process starting from UR and leading to CS. In other words, the dynamicity of such a tree construction resides in the fact that it can be said to simulate the way in which linguistic expressions are uttered by the speaker in a life setting.

3.2.3. Conveyor-belt model or dynamic model?

The evaluation of these models must take place in the light of the general conception and the architecture of MLFG as outlined in section 1 and, in particular, on the basis of the regulative and constitutive constraints discussed in section 2.

Generally speaking, both the two models can be said to satisfy in a reasonable extent the requirements imposed by the standards of pragmatic and typological adequacies (but cf. subsection 3.2.4). The dynamic model seems, however, to be more able to comply to the other constitutive and regulative requirements. Firstly, the relevance of the collapsing of stage I and stage II is evidenced by data from many typologically quite different languages as shown above. Secondly, the alternative procedure which consists in dividing the morphological ERs into pre-order and post-order rules clearly violates the requirements of economy and independent motivation. Thirdly, the postponing of the terminal grammatical forms permits to keep visible, as long as necessary, the information relevant to the latest derivational rules such as accent and intonation assignment. Fourthly, the notion discussed in Bakker (1999: 23) under principle (d) can replace the not always clear copy operations and enable the model to come to grips in a more principled, more uniformized and less costly fashion with the inheritance phenomena involved not only at the simple clause or the term-phrase but also at the complex clause and the text levels. Fifthly, this model has more chances to meet the psychological (or cognitive) requirements discussed in the previous section. On the one hand, the conflation of stages I and II makes it possible not only to avoid overgeneration and undergeneration problems, to not violate the economy and the independent motivation principles but also to minimize the distance between UR and CS. On the other hand, the dynamicity of the model as defined above reinforces the expected «transparency» of the relationships between these two structures.

4. Some suggestions

The suggestions I would like to make are of two sorts: general suggestions concerning the intrinsic properties of the model itself and specific suggestions relating rather to its ability to constitute an adequate grammatical module for MLFG.

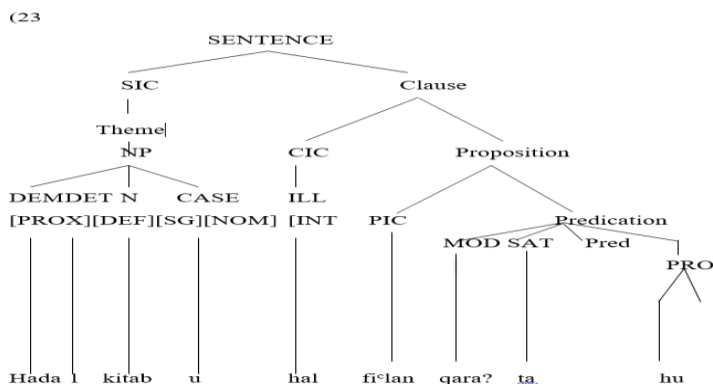
- (i) The required transparency between UR and CS is arrived at, as shown above, by minimalizing the distance between these two structures and

by reflecting the history of the process that leads from the former to the latter. A higher degree of transparency could be attained if the constituency of CS remains reminiscent of the hierarchical organization of UR. More precisely, this goal could be achieved if the UR layers (clause, proposition, predication etc...) are resumed, be it with another (more formal) status.

- (ii) The syntactic templates currently recognized in the FG literature does not suffice to cover the positions assignable to constituents in natural languages. Data from certain languages suggest to enrich the syntactic templates by additional positions. In this respect, it should be noticed that the adequate description of the sentential word order in some languages like Arabic requires a syntactic template with four initial positions to host the Sentence Initial Constituent (SIC), the Clause Initial Constituent (CIC), the Proposition Initial Constituent (PIC) and the Predication Initial Constituent (PrIC). Sentence(22) illustrates the point:

(22) hada l-kitabu, hal fi'lan qara?a ta hu
 this the-book, Int really-acc red-you-it
 «As for this book, did you really read it?»

The Cs of (22) can be roughly represented as follows:



From this representation, it becomes clear that each UR layer requires, at the CS level, its own P1 position. If we keep in mind that the

term-phrase can also display a P1 position (cf. Dik (1997b)), we can take the facts exemplified in (22) as an additional empirical argument in favour of GPH, in particular of the assumption that a certain parallelism between the discourse categories can be expected at the CS level as well. Moreover, they can serve as an evidence for the claim advocated in (i) that the same UR layers should reappear as nodes and sub-nodes of CS.

(iii) In a previous section we have formulated the problem that the place of prosody poses in the form of this question: How to keep visible through the application of ERs the pragmatic information relevant to accent and intonation assignment? Two solutions can be envisaged. We can apply the prosodic rules at hand directly on the UR itself where the relevant information (pragmatic functions and illocution) is still totally visible. Alternatively, we can apply them after morphosyntactic rules but before the insertion of the terminal forms, which blur the input-information. If this solution is adopted, the Accent features (A-Rises/ Falls) and Intonation features (I-Rises/ Falls) could be specified after and on the basis of morphosyntactic features. This solution has obviously the advantage to permit to determine the role of prosody in the cases where illocution and pragmatic functions are also expressed by the form and / or the order of constituents.

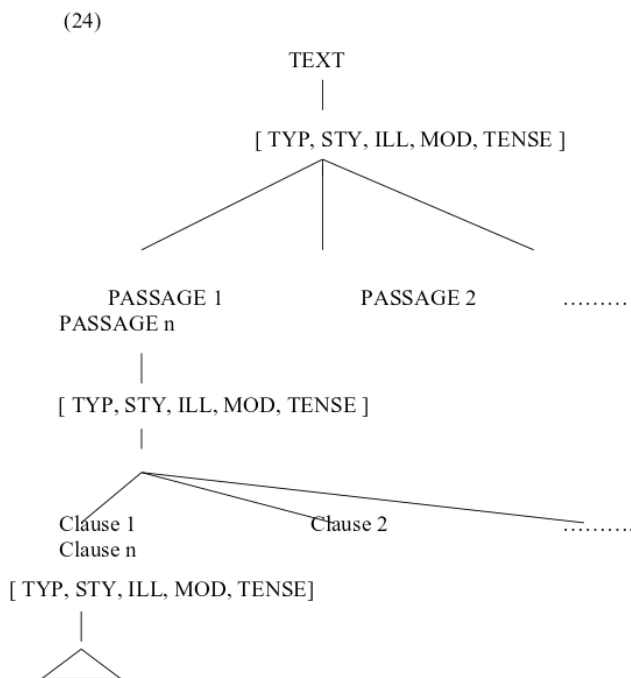
(iv) The derivation process should take, as input, not only the representational and the interpersonal parts of UR as represented in schema (2) but also its rhetorical part. The relevance of the representational and the interpersonal layers is now well established. As for the event, discourse type and discourse style layers, their postulation as layers of a separate (rhetorical) level seems to need more argumentation. In this respect, we can say that the relevance of these layers especially to ERs manifests itself in a direct and an indirect ways. On the one hand, they determine in situ a certain number of morpho-syntactic aspects of linguistic expressions as witnessed by the constuctions exemplified in (7), (8) and (9) above. On the other hand, they co- determine the values that the lower (interpersonal and representational) layers take and indirectly the

grammatical or lexical means by which these values are realized. For instance, the values of the event layer, which is meant to represent the deictic centre (or the «pragmatic space»), determine «local» features (personal pronouns etc...), co-determine the values of the lower layers such as Tense, Definiteness and Demonstratives (and all sorts of deictics in general) and trigger indirectly, in so doing, the insertion of the forms (articles, demonstrative pronouns...) realizing these values.

(v) It has become clear from the examination of the constructions like (4a-c) and (5a-b) that ERs are sensitive to the information coming from the auxiliary modules such as the social module. This information can be specified in the derivation just before the specification of the forms they determine. For instance, the feature: Standard/ Bedouine can appear, after the other morphosyntactic features at the moment of the insertion of the *huwa / lahu* interrogative particles in Colloquial Egyptian Arabic.

(vi) One of the most important performances the adopted model is expected to realize is to generalize the derivation procedure in such a way that it becomes able to deliver, as far as possible, similar CSs not only for term-phrases and clauses but also for sentences and texts. This should be done in the light of GPH, i.e. in the light of the assumption that the recognized discourse categories display an underlying parallelism and although at a lower degree, a surface structural isomorphism.

Structure (23) is an example of what the representation of a sentence and a clause CS could be in the light of such an assumption. Now, concerning the representation of the text CS, two different approaches can be adopted: a text-product approach and a text-process approach. According to the former approach, we can represent it as a whole by a finite global tree such as (24):



Tree (24) shows that the « Inheritance Principle » also holds here: the text UR primary operators (such as Discourse Type, Discourse Style, Illocution, Modality and Tense), now taken as auxiliary operators, are inherited by the passages and, then, by their constituting clauses.

According to the latter one, it can be built in an incremental way (in the sense of Mackenzie (2000)), i.e. by means of successive expansions and stretch by stretch.

Conclusions and some perspectives

The newly proposed architecture of FG requires that the standard ERs component be deeply revisited. In order to fit in with the spirit and the organization of the version of MLFG we are advocating, this component must be designed in such a way that it becomes able to successfully fulfil three main tasks: First, it should deal with an extended

and enriched UR whose parts come from the pragmatic and the semantic modules (and, eventually, from others). In doing so, it is expected to conform to GPH, i.e. to the assumption that the recognized discourse categories display, at different degrees, a similar UR. Second, it is intended to deliver concrete hierarchically organized and fully specified CSs for all these categories (including the text), on the basis of. The assumption that a certain structural parallelism can also hold at this level. The rules responsible for this task must be strongly constrained so as to avoid the signalled cases of both overgeneration and undergeneration. Third, the mode adopted for linking the UR and CS levels, whatever its nature can be, should strive to meet, as far as possible, the pragmatic, typological and cognitive requirements implied by the general standards that the theory of FG imposes on itself.

This linkage is expected in particular to satisfy the ‘Transparency Constraint’ (or the ‘Projectivity Constraint’) which requires that the distance between the two levels be as minimal as possible on the one hand and to reflect in a dynamic fashion both the production and the interpretation processes on the other hand.

The model advocated here is reminiscent, on many aspects, of Hengeveld’s version of FDG with the peculiarity, however, that it remains more rooted in the dikean conception of the discourse structure and the organization of MNLU.

In fact, what is proposed in this study is no more than a mere outline of what an adequate grammatical module of MLFG could be and leaves open, thus, a number of questions which certainly require further research.

In this perspective, we are now elaborating an alternative organisation of the MULN which incorporates Hengeveld’s and Anstey’s new proposals (Hengeveld (2002a and b), Anstey (2001)). We mainly envisage:

- (a) to add an Acoustic/Orthographic module intended to convert the Constituent Structure level into an Expression level;

- (b) to insert the Perceptual Module as a (situational) component of a wider Contextual Module;
- (c) to re-interpret the standard Epistemic module as a “driving force” Conceptual (or Cognitive) Module;
- (d) to locate the standard Logical Module in the MULN as a deriving device whose main task would be to feed the Conceptual Module by new knowledge coming from the different modules of Grammar and from the Contextual Module.

As for the status of the standard Social Module in such a re-organization of the MULN, two possibilities offer themselves: (a) keeping it as an autonomous module and (b) inserting it in the Contextual Module.

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