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## Epilogue

Kees Hengeveld

### 1. Introduction

In the first chapter of this volume I presented a basic outline of Functional Discourse Grammar (FDG),<sup>1</sup> pulling together various strands of research in FG over the last decade. Basic features of FDG not shared by earlier versions of Functional Grammar are (i) its top-down organization, (ii) an architecture which is both modular and hierarchical,<sup>2</sup> (iii) the presence of a structural<sup>3</sup> module as a separate component of the underlying clause structure, and (iv) the location of the cognitive and contextual components. My initial presentation of FDG focused on just these characteristics, ignoring many other issues. The subsequent articles raise quite a number of these issues, and in this chapter I will try to address some of them.<sup>4</sup> Obviously, many topics will remain untouched: FDG is a research programme rather than a fully-fledged theory.

The main questions that I will touch upon here are the following: (i) What is FDG a model of; (ii) How does FDG operate; (iii) What do the cognitive and communicative components look like; (iv) What are the relevant operator and modifier slots in FDG; (v) Where are semantic, syntactic, and pragmatic functions located in FDG; (vi) What is the position of the fund in FDG? The first three questions concern the architecture of FDG itself. The last three concern the incorporation of existing FG components into FDG. After considering the six issues one by one, I will present a revised and more detailed version of FDG in the final section of this paper.

## 2. A model of encoded intentions and conceptualizations

Since the introduction of the layered structure of the clause in FG (Hengeveld 1988, 1989; Dik 1997), the question has been raised (e.g. by Bolkestein 1992 and Harder 1996) whether this structure should be interpreted as a representation of the communicative process itself, or as a representation of the linguistic units put to use in that process. These two interpretations have become known as the process and pattern views on underlying representations. In this volume Fortescue raises the same issue explicitly in relation to FDG, and concludes that it is a process model. Anstey, Bakker and Siewierska, Harder, and Nuyts all arrive at the same conclusion.

It is important to note that this is not how I intend FDG to be taken. I conceive of FDG as a pattern model, i.e. as a model that represents linguistic facts. The process interpretation given to it by the aforementioned authors is probably due to two facts. First of all, FDG is presented in Hengeveld (this volume) as the grammatical component of a wider theory of verbal interaction (cf. Dik 1997) and as such interacts with a conceptual and a contextual component. These latter components, however, are not part of the grammar as such, even though many grammatical phenomena can be studied much more fruitfully if such components are assumed to exist. Secondly, in FDG, as in FG, the patterns of language are described as reflecting the process of communication. This, however, does not mean to say that FDG is a model of that process.

The latter point can be clarified starting from a familiar and generally accepted underlying representation in FG:

- (1)  $(e_1: [(f_1: collapse_V(f_1)) (x_1: house_N(x_1)_{\emptyset Pat}] (e_1))$   
'the collapsing of a house'

The representation in (1) contains three types of variable from the representational level: (e) for states-of-affairs, (f) for relations and properties, and (x) for spatial objects. These variables are defined in terms of entity types in the external, extra-linguistic world. Yet nobody would claim that the formula in (1) represents part of the external world, as it would if it were an ontological representation. Rather, (1) represents a linguistic unit in terms of its function of designating part of the external world. This fact has been obscured by informal terminological usage. It is common to say that (1) represents a state of affairs, whereas it would be more appropriate to say that (1) represents *a linguistic unit in terms of its ideational function*.

Thus, (1) is a linguistic representation based on non-linguistic factors.

Similar considerations apply to the representation of discourse acts. Consider the following underlying representation:

- (2)  $(A_1: [DECL (P_1)_{Sp} (P_2)_{Addr}$   
 $(C_1: [(T_1: collapsed (T_1)) (R_1: house (R_1))]) (C_1)]) (A_1))$   
'The house collapsed.'

This representation contains five types of variables from the interpersonal level: (A) for discourse acts, (P) for discourse participants, (C) for communicated contents, (T) for ascriptive acts, and (R) for referential acts. These variables are defined in terms of the units relevant to the unfolding speech event. Now, in exact parallel to what was said in relation to the representation of states of affairs, this representation should not be interpreted as a direct representation of the actual communicative situation, but rather as representing a linguistic unit in terms of its function in communication. Thus, (2) does not represent a discourse act, as it would if it were an action theory representation, but should be interpreted as the formalization of *a linguistic unit in terms of its interpersonal function*.

This is precisely why FDG can be called a functional model of language: it captures the structure of linguistic units in terms of the world they describe and the communicative intentions with which they are produced, i.e. in terms of their representational and interpersonal functions.

## 3. The dynamic construction of linguistic expressions

A pattern model of language is not necessarily a static one. In this volume the contributions by Bakker and Siewierska, Harder, and Mackenzie stress the importance of a dynamic implementation of the model. The same issue is raised in Bakker (1999; 2001) and Mackenzie (1998; 2000).

For a model of grammar a dynamic interpretation entails an implementation that mirrors the language production process in individual speakers. Again, this does not mean that the grammatical model is a model of the speaker. Rather, the model is assumed to be more effective, the more closely it resembles this language production process. For the implementation of FDG this means that the various levels operate simultaneously, though with a slight delay applying from higher to next lower levels. That is, as soon a certain decision at the interpersonal level allows the selection of elements at the representational level, the latter level becomes active.

And structural choices are made as soon as sufficient information is available from the interpersonal and representational levels. One could visualize this provisionally as in Figure 1, anticipating a more elaborate picture in Section 8.

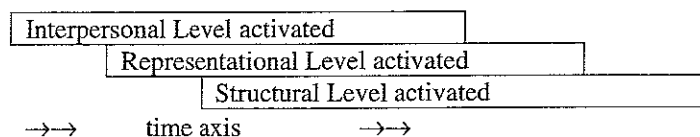


Figure 1. The dynamic interpretation of FDG

The dynamic approach faces an important problem that touches upon the basic principles of FG. The dynamically produced order of constituents at the structural level is linear. But the underlying semantic representations in FG are generally assumed to be unordered. As a result, in a dynamic implementation of the model either the semantic representations have to be specified before expression starts, or the semantic representations have to be linearly ordered too. In this volume, Bakker and Siewierska opt for the latter solution. This is a rather drastic departure from current FG practice, and seems to suggest that differences in the structural organization of languages reflect differences in their semantic organization. Phenomena which contradict such an approach are the existence of cataphora, and of reflexive pronouns preceding their antecedents.

I will not attempt to formulate a complete alternative solution for this problem here. A promising possibility involves a strict separation between lexemes on the one hand, and the frames in which they occur on the other, as proposed in García Velasco and Hengeveld (2002). Once these two elements are dissociated from each other, one might argue that expression starts at the moment that frames have been selected, and the first lexeme is inserted into the appropriate slot. Expression then evolves parallel to the insertion of further lexemes into the remaining slots.

A full account of dynamic expression should not stop at the structural level. A structural representation is part of the underlying representation of discourse acts, but is not the same as the acoustic, orthographic, or signed output. This output requires a separate component within the overall model. The place of the output in relation to the FDG model will be presented at the end of the next section.

#### 4. The conceptual and contextual components

In my initial presentation of FDG (Hengeveld this volume) the cognitive component was defined rather sketchily, and far too restrictively, as one which defines the communicative and linguistic competence of a speaker and his/her knowledge of the world. Several authors in this volume, but particularly Nuyts, have drawn attention to the necessity of a further elaboration of this component.

A dynamic implementation of FDG, as discussed in the previous section, begs for a 'driving force' to trigger the creation of linguistic expressions. This driving force is embodied by a conceptual component, within which communicative intentions develop and combine with suitable conceptualizations. The conceptual component is not part of the grammatical model, but in actual language use serves as a trigger for the grammar to operate. Anstey (2002) presents a formal representation of the conceptual level which basically mirrors the underlying linguistic representation, but abstracts away from purely linguistic distinctions, and thus generalizes, for instance, across operators and satellites.

Within the conceptual component there is an important distinction between communicative intentions on the one hand, and conceptualizations on the other. This is reflected at the grammatical level in the presence of interpersonal and representational levels. In his contribution to this volume, Connolly makes exactly the same distinction for the contextual component, incorporating insights from Discourse Representation Theory. He proposes a detailed and convincing format for the description of the contextual component, distinguishing between the contextual description and the interpersonal description of the communicative context. It is important to note that in Connolly's view, which I share, the contextual component is interpreted as a discourse domain (cf. Vet 1986) and thus contains a description of the knowledge shared by the interlocutors. This interpretation of the contextual component is different from the one advocated in Anstey's contribution to this volume. He assumes different discourse models for speaker and addressee.

Together, the proposals by Anstey for the conceptual component and Connolly for the contextual component allow for a systematic treatment of certain linguistic phenomena that can only be understood in terms of a wider theory of verbal interaction. Chief among these is the question of pronominalization, which is the topic of Cornish's contribution to this volume. At the conceptual level, referents do not change: coding differences do not reflect differences in perception. To simplify matters a bit, referents

are encoded pronominally when they are available within the contextual component, and nominally when they are not. The importance of the interaction between the conceptual and contextual modules is also stressed by Gómez-González in her contribution to this volume.

On the basis of the discussion in the previous section and in this one we can give a more detailed presentation of FDG, shown in Figure 2, as the grammatical component of a wider theory of verbal interaction. In this Figure, boxes represent components and levels, and circles represent operations. The main components are the conceptual component, the contextual component, the acoustic component,<sup>5</sup> and the grammatical component. The grammatical component distinguishes an interpersonal, a representational, and a structural level. The vertical arrows indicate the following: the conceptual component drives the grammatical component, both as regards the formulation of the interpersonal and of the representational level; the underlying representation resulting from this operation is encoded at the structural level,<sup>6</sup> and interpersonal choices together with the structural configuration determine the phonetic properties of the utterance. The other way round, the result of these operations feeds the conceptual component through the contextual component. The horizontal arrows indicate that all grammatical and articulatory levels feed this contextual component, creating possible antecedents at the representational level. But the interpersonal level draws on the contextual component too, for instance with respect to bystander deixis.

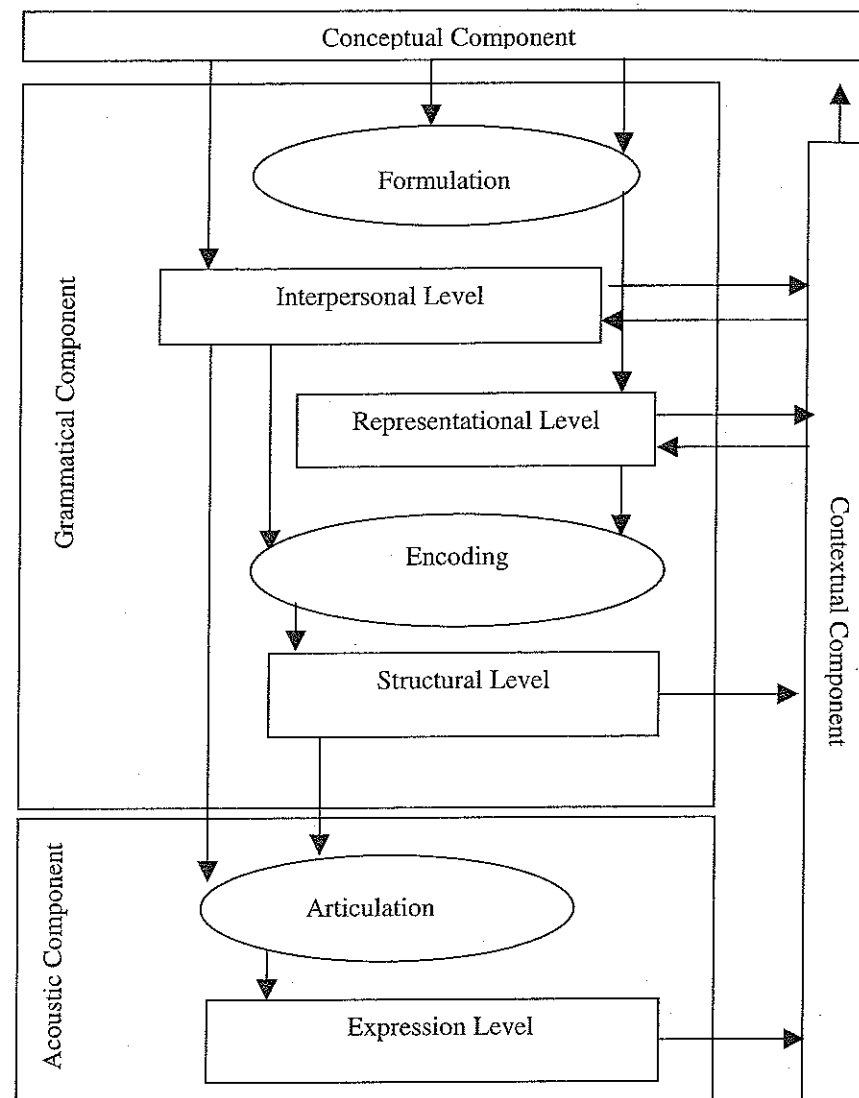


Figure 2. Main components of FDG within a wider model of verbal interaction

## 5. Operators and modifiers

The FDG-model introduces a number of additional layers and as a result creates a number of additional potential slots for operators and modifiers. There are two areas where the additional slots seem to be particularly helpful: (i) the distinction between communicated (C) and propositional (p) contents which results from upward layering at the representational level offers new opportunities to account for speaker-bound and non-speaker-bound modalities; (ii) the introduction of referential acts (R) through downward layering at the interpersonal level provides a new perspective on the layered structure of term phrases.

With respect to the first issue, one should note that in FDG propositional contents (as opposed to communicated contents) are situated at the representational level, rather than at the interpersonal level. This calls for a redefinition of modal categories: the distinction between communicated and propositional contents creates an additional level of analysis. In fact, this is a welcome addition since it helps to distinguish between modal, and in particular evidential, categories which are restricted to main clause (i.e. speaker-bound) uses, and modal, and in particular epistemic, categories which may be used in embedded clauses and then express the propositional attitude of a main-clause participant, rather than the propositional attitude of the speaker. In his contribution to this volume, Verstraete does indeed locate speaker-bound modalities at the interpersonal level, i.e. as operators at the level of the communicated content.

With respect to the second issue, consider the following full representation of a referential act (R) in which reference is made to a first order entity and in which an 'Ω' indicates an operator slot and a 'μ' a modifier slot.

- (3)  $(\Omega R_1: [(\Omega x_1: [(\Omega f_1: \text{Lexeme}_N(f_1): \mu(f_1)]) (x_1): \mu(x_1)]) (R_1): \mu(R_1))$

In this representation of referential acts in FDG the same number of layers, operators and modifiers can be distinguished as in Rijkhoff (1992), but now they can also be provided with a systematic underpinning in terms of the functions of the various layers. Thus, f-operators concern the nature of the property (f) itself, x-operators concern properties of the set of designated entities, and R-operators situate the referential act in the actual communicative situation.

For modifiers within term phrases similar things may be said. Consider the following series of examples:

- (4) a *a poor driver*  
 b *a poor man*  
 c *Poor guy!*

In (4a) the property of being a driver is modified by the adjective, which does not state anything about the *driver* entity itself. One might well talk about *a poor driver who is very rich* or even about *a rich poor driver*. Bolinger (1967) calls the type of modification in (4a) 'reference modification'. In (4b) the adjective selects a subclass of the set of entities defined by the head noun. This is the type of modifier typically treated in the FG literature. In Bolinger's terms this is a case of referent modification. In (4c), finally, the adjective embodies the subjective evaluation by the speaker of the entity referred to. The functional differences between these three types of modifiers are reflected in structural differences in various languages, as has for instance been demonstrated for Spanish in Berniell (1995). The characterizations given to the various uses of the adjective *poor* in (4) furthermore tie in nicely with their interpretation as f-modifier, x-modifier, and R-modifier respectively.

## 6. Functions

As Anstey notes in his contribution to this volume, the functional hierarchy of influence (pragmatics > semantics > syntax) is instantiated in the existence and ordering of the interpersonal, representational and structural levels respectively. Similarly, these levels provide straightforward slots for pragmatic, semantic and syntactic functions.

With respect to pragmatic functions Cornish and Mackenzie provide arguments in this volume for locating pragmatic functions at the interpersonal level. An important reason to situate pragmatic functions at the interpersonal level is that the selection of a predicate at the next level down, the representational level, is sensitive to the information status of constituents (see e.g. Bolkestein and Risselada 1985; 1987). Semantic functions, as in earlier versions of FG, are situated at the representational level. They are part of the frames which are used to build up a semantic representation. Finally, FDG offers a new location for syntactic functions: I propose to situate these at the structural level (cf. also Bakker and Siewierska this volume). In this way, syntactic function assignment can be seen as the outcome of a process in which both pragmatic factors (at the interpersonal level) and semantic factors (at the representational level) are taken

into consideration. Expression rules sensitive to these factors determine which constituents come out as Subject or Object, where this is relevant. This proposal has consequences for the conception of syntactic functions in FG: here they are considered to be purely grammatical rather than semantic notions. The perspectival flavour of syntactic functions is then the product of more basic pragmatic and semantic notions which trigger their appearance, rather than being part of their meaning.

## 7. The fund

In the initial presentation of FDG I did not say anything about the location of the fund in FDG, as noted by Gómez-González and Bakker and Siewierska in their contributions to this volume. Here I can only present a first sketch of this part of the model.

The basic idea is that for every level within the model the fund contains the set of basic units which are used to build up that level. Basic units are language-specific inventories. The fund of a given language contains at least the sets of basic units given in Table 1:

LEVEL	BASIC UNITS
Interpersonal	Illocutionary Frames Lexemes Operators
Representational	Predication Frames Lexemes Operators
Structural	Templates Morphemes
Acoustic	Prosodic Patterns Sounds

Table 1. Basic units stored in the fund

García Velasco and Hengeveld (2002) propose a new organization of the fund in which predicate frames are split into lexemes on the one hand and predication frames on the other. They give arguments to show that from the perspectives of psychological, pragmatic and descriptive adequacy such an approach is called for. Predication frames and lexemes, together with the relevant operators, are the building blocks of the representational level. A similar approach may be applied at the interpersonal

level: acts are based on an illocutionary frame; there are certain lexemes that have an interpersonal content only (personal names, pronouns, interjections);<sup>7</sup> and the interpersonal level has its own set of operators. The structural level draws on a set of (word order) templates<sup>8</sup> and on a set of grammatical morphemes. This is what Anstey calls a 'syntacticon' in his contribution to this volume. Finally, the acoustic level contains at least prosodic patterns and sounds, but conceivably also syllabic and word patterns.

Note that this organization of the fund into components corresponding to the various levels is crucial if one strives for a dynamic interpretation of FDG. It allows for expression to start as soon as sufficient information has come in. This information may come from as high up as the interpersonal level and go as deep down as the acoustic level. For instance, the selection of a particular illocutionary frame at the interpersonal level may be sufficient to trigger a certain prosodic pattern at the acoustic level.

## 8. Summary: expanding the model

By way of summary, Figure 3 gives an expanded version of the FDG model which incorporates the various adaptations that have been discussed in the previous sections, and which were triggered by the many interesting issues raised in the various contributions to this volume.

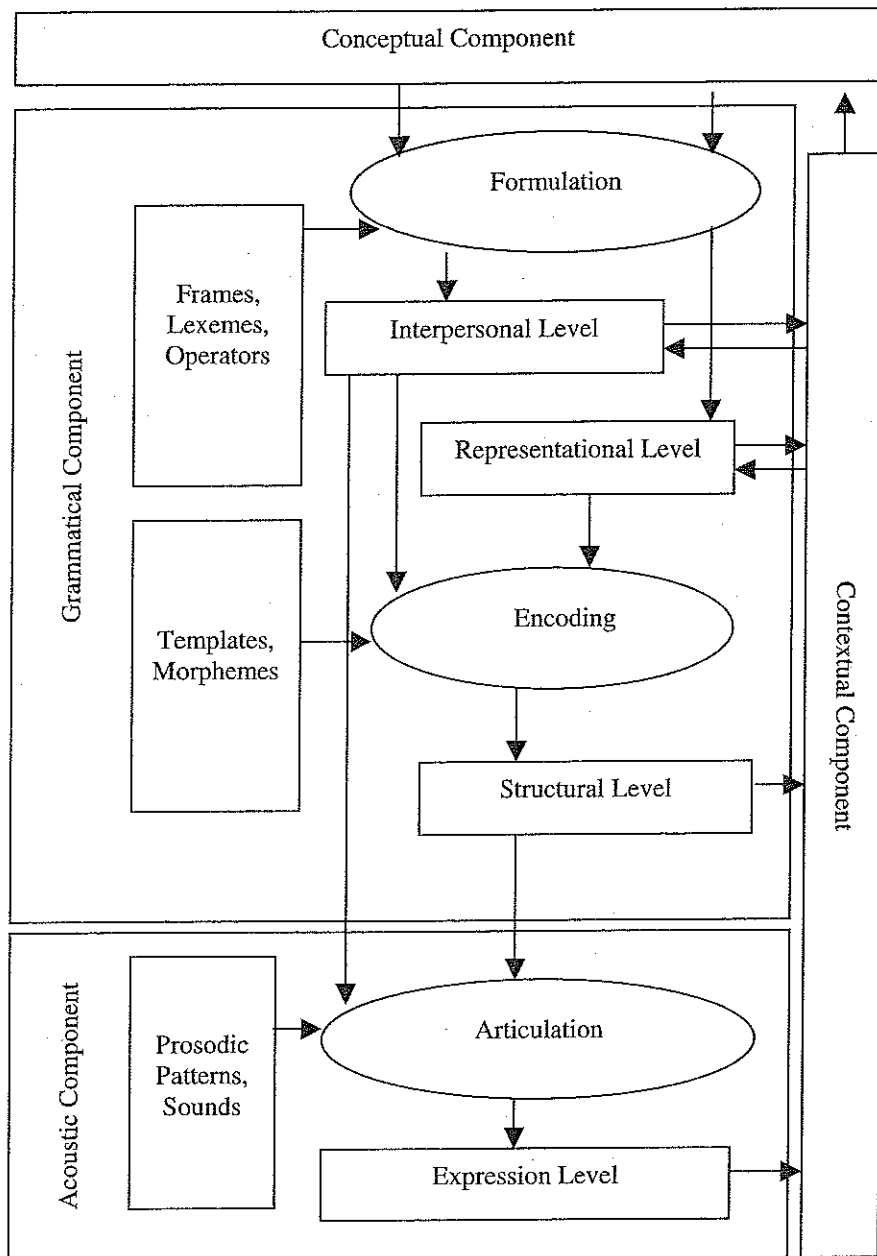


Figure 3. An expanded version of FDG

## Notes

1. The use of the label FDG does not mean to suggest a radical departure from the basic principles of FG. However, since the top-down organization of FDG does imply that all existing components of FG have to be re-interpreted, it is convenient to have a separate label to refer to this new research enterprise.
2. In this volume, however, Moutaouakil presents another version of FG which is both modular and hierarchical.
3. I have substituted the term 'structural level' for the term 'expression level' which was used in the first chapter of this volume, since expression involves more than just structure. I will come back to this issue in Section 3.
4. I am grateful to Matthew Anstey, Annerieke Boland, Lachlan Mackenzie, and Gerry Wanders for discussion of several of the topics dealt with in this chapter.
5. Of course the acoustic component is only relevant for spoken language. For sign language this would be a sign component, for written language an orthographic component.
6. Note that the structural level in fact has to be split up into a morphosyntactic and a phonological level.
7. See e.g. Mackenzie's and Moutaouakil's contributions to this volume.
8. The difference between frames and templates is that frames are unordered semantic configurations whereas templates are ordered syntactic configurations.

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