The Noun Phrase in Functional Discourse Grammar

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The Noun Phrase in Functional Discourse Grammar

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Abbreviations

General abbreviations

1	first person	EXH	exhortative
2	second person	F	feminine
3	third person	F(D)G	Functional Grammar and Functional Discourse Grammar
A	addressee / adjective		
ABL	ablative		
ABS	absolute	FDG	Functional Discourse Grammar
ACC	accusative case		
Adv	adverb(ial)	FG	Functional Grammar
AdvP	adverbial phrase	FUT	future
ALL	allative	GEN	genitive case
ART	article	HP	Head Proximity
AP	adjective phrase	HPSG	Head-Driven Phrase Structure Grammar
ASP	aspect		
AUG	augmentative	IND	indicative
BNC	British National Corpus	INDEF	indefinite
C	common gender	IRR	irrealis
CLF	classifier	LCA	Linear Co-occurrence Axiom
CNPC	Complex Noun Phrase Constraint		
		LFG	Lexical Functional Grammar
COND	conditional		
COP	copula	M	masculine
CREA	Corpus de Referencia del Español Actual	N	noun / neuter
		NEG	negative
D	discourse	NF	non-future
DAT	dative case	NH	non-human
INF	infinitive	NOM	nominative case
DEF	definite	NP	noun phrase
DEM	demonstrative	NUM	numeral
DET	determiner	OBJ	object
DI	Domain Integrity	PRF	perfective
DIM	diminutive	PL	plural
DS	different subject	POSS	possessive
ECC	Extra Clausal Constituent	PP	prepositional phrase
EIC	Early Immediate Constituents hypothesis	PPT	past participle
		PRES	present

PROG progressive
PROH prohibitive
Q question marker
R realis
REFL reflexive
REL relative marker
RSM resumptive marker
S speaker / subject /
  sentence
SG singular
SIM simultaneous
STC Stepwise Term
  Construction
TNR time nominalizer
TR transitional sound
V verb
Vf finite verb
Vi nonfinite verb
VP verb phrase
  (see fn. 9 in Introduction)
VOC vocative

Abbreviations
in F(D)G representations

Ø Zero (semantic function)
1 singular
A Discourse Act /
  addressee /
  anaphorical operator
Ag Agent
  (semantic function)
CL clause
d/def definite
Exp Experiencer
  (semantic function)
i indefinite
IL Interpersonal Level
ILL illocution
IMP imperative

L layer
Lex lexeme
m plural
ML Morphosyntactic Level
P1 the (special)
  clause-initial position
P speech act participant
Pat Patient
  (semantic function)
PL Phonological Level
PredP predicative phrase
prox proximity
R Referential Subact /
  relative operator
RL Representational Level
RP referential phrase
So Source
  (semantic function)
T Ascriptive Subact
UR underlying representation
VP verb phrase in FDG

Variables for entities

C Communicated content
E Speech act (FG)
e State-of-Affairs
ep Episode
f Property / relation
F Speech occurrence
l Location
M Move
p Propositional content
  (FDG)
t Time
x Individual
X Propositional content
  (FG)

Introduction

Daniel García Velasco and Jan Rijkhoff

The articles in this volume analyse the noun phrase within the framework of *Functional Discourse Grammar* (FDG), the successor to Simon C. Dik's *Functional Grammar* (FG). *The Noun Phrase* was the main conference theme of the *11th International Conference on Functional Grammar*, which took place at the University of Oviedo (Gijón, Spain) in September 2004 and the present anthology consists of a selection of the manuscripts that were submitted after a call for contributions following the conference.[1]

There were several reasons to devote the theme session of the conference to the noun phrase (NP). First, the most recent treatment of NPs by Dik in terms of "classical FG" was published (posthumously) in 1997, in the first volume of *The Theory of Functional Grammar*. Given the fact that FDG presents a strongly revised version of Dikkian FG with respect to rules, variables, representations and overall design, it seemed appropriate to investigate how the new theory deals with one of the most basic grammatical constructions, the noun phrase.

Secondly, in a recent, cross-linguistic investigation on the structure of the NP, Rijkhoff (2002) presented an alternative analysis of the NP within the FG framework. This study contains several new facts and ideas, which made it an interesting challenge to investigate to what extent the proposals he put forward could or should be integrated into the new FDG model (see also Rijkhoff this volume). All in all, the time seemed ripe for a detailed investigation of the way NPs are handled in FDG. Moreover, to analyse a major linguistic construction from various perspectives (textual, typological, logical, semantic, morphosyntactic, etc.) is an excellent way to test a new model of grammar with regard to some of the standards of adequacy for linguistic theories (see also section 1).

In order to contextualize the papers in the present volume, we will first lay out the main differences between FG and FDG and explain why some FG scholars felt that a general reorganization of the model was necessary. Section 2 gives a brief overview of the history of the way NPs have been analysed in F(D)G,[2] paying special attention to variables for the various entities (i.e. the "ontology") and the overall organization of the two models

(i.e. the "architecture": representational frames, layers, levels, modules). Finally, in section 3, we will summarize the most relevant aspects of the articles included in the volume. The reader is invited to consult Dik (1997a; 1997b), Anstey and Mackenzie eds. (2005), Hengeveld (2004a), Hengeveld and Mackenzie (2006) and Hengeveld and Mackenzie (forthcoming) for more detailed expositions of F(D)G.

1. From Functional Grammar to Functional Discourse Grammar: A short overview

FDG may be seen as the natural descendant of FG inasmuch as it shares many if not most of the central assumptions and goals formulated by Dik (see Butler 2003 and Anstey 2004 for excellent presentations of the evolution of FG). In Dik's (1997a: 12-13) view the aim of FG was

> to provide the means and principles by which functional grammars of particular languages can be developed. And the highest aim of a functional grammar of a particular language is to give a complete and adequate account of the grammatical organization of connected discourse in that language (…). Thus a functional grammar should conform to the standards of adequacy (in particular descriptive adequacy) such as have been formulated by Chomsky …

But since FG does not share Chomsky's syntactocentric perspective on grammar, Dik (1989: 12; 1997a: 13) added that "we may expect differences with respect to what has been called 'explanatory adequacy'". At this point he introduced three additional standards of adequacy for grammatical theories, which subsequently have also been accepted in other functional approaches to grammar (e.g. Van Valin and LaPolla 1997: 8): pragmatic, psychological and typological adequacy. Undoubtedly, the standard of typological adequacy has been satisfied to a greater extent than the other two, as many FG publications contain references to studies on a wide variety of linguistic phenomena in languages from many different families, which have had a considerable influence on the general architecture of the model. This strong commitment to typology continues to be an important hallmark of FDG.

There is little doubt that FG has been less successful in its aim to become a theory of grammar that is also pragmatically and psychologically adequate (Butler 1991; 1999), and to some extent this has motivated the birth of FDG. As far as pragmatic adequacy is concerned, some FG practi-

tioners felt that the 1997 model (in spite of Dik's programmatic statements in the quotation above) contained two major obstacles to progress towards a truly functional theory of grammar: (i) the fact that research in FG concentrated almost exclusively on the analysis of the sentence and its constituents, and (ii) the lack of integration of FG into a theory of verbal interaction. As for psychological adequacy, which roughly requires the theory to be compatible with well-established findings in the field of psycholinguistics, let us simply say that the number of studies in FG that make reference to the results of psycholinguistic research is extremely limited, which means that the theory has remained untested from a psycholinguistic point of view.

Thus, on the one hand FDG can be seen as a continuation of FG, on the other hand the original model as conceived by Dik has been restructured in such a way that it is better equipped to meet the standards of adequacy mentioned above. Another major difference between FG and FDG is that FDG is explicitly designed to model the speakers' linguistic abilities (Hengeveld and Mackenzie 2006: 669). So even though FDG shares certain features with its predecessor FG, the differences are substantial enough to say that it offers a new research programme in the linguistic landscape. Next we will examine the differences between the two models under the headings *sentence grammar vs. discourse grammar*, *top-down vs bottom-up*, and *levels and layers.*

1.1. Sentence grammar vs. discourse grammar

In various places Dik expressed his commitment to the study of connected discourse in language and it is true that over the years some FG linguists have concerned themselves with discourse phenomena. Nevertheless, in reality FG has mostly concentrated on the analysis of the internal organization of single, isolated sentences. In fact, this development was already anticipated in the first presentation of the theory, when Dik (1978: 15) stated:

> FG is meant to cover any type of linguistic expression (…). It is thus not restricted to the internal structure of sentences, inasmuch as there are combinations of sentences related by syntactic and semantic rules. (…) *In practice, however, we shall mostly be concerned with the internal structure of sentences* [emphasis ours].

Perhaps the focus on the internal structure of sentences was simply a matter of priorities in the early stages of the theory, but Butler (1991) suggests that it may also be a consequence of the formal (in the sense of explicit) orientation of the theory, as discourse pragmatic aspects may be rather difficult to capture in a rigid notational system such as the one employed in FG. This is arguably an important drawback, which, according to Siewierska (1991: 2) makes FG amenable to the attacks of both formalists and functionalists alike. It seems, then, that over the years FG has reinterpreted its commitment to the study of language-in-use towards developing a grammatical theory that is merely *compatible* with a model of verbal interaction.

The need for a more serious treatment of discourse phenomena in FG and a greater integration of grammar (the rules) and pragmatics (when to apply these rules) into the theory was especially strongly felt in the late nineties (see the papers in Hannay and Bolkestein eds. 1998). In this period several authors proposed to enrich the architecture of the model either by adding a pragmatic module, the so-called *modular approach* (Kroon 1997, Bolkestein 1998, Vet 1998), or by extending Hengeveld's (1989) layering analysis of the sentence to account for the hierarchical organization of discourse (*upward layering approach,* Gómez Soliño 1996, Hengeveld 1997). Essentially, this set the pillars for the new architecture of the model, since traits of both approaches can be found in FDG.

Significantly, in his presentation of FDG, Hengeveld (2004a) notes that a considerable number of grammatical phenomena relate to units that are either larger or smaller than the clause and for that reason cannot be adequately described by a sentence grammar. In particular, he argues that FDG must account for the fact that a quite a few verbal exchanges are not realized in the form of fully-fledged sentences, but rather in the form of fragments, or, generally speaking, non-clausal linguistic units (Mackenzie 1998a). Thus, FDG replaces the sentence with the *Discourse Act* (Hannay and Kroon 2005) as a basic unit of grammatical analysis. The following utterances are examples of non-sentential discourse acts:

(1)   a. *John!*
       b. *A pen.*
       c. *To the market.*

The expression in (1a) may act as a vocative or address in order to initiate a verbal interaction, whereas (1b) and (1c) can serve as natural replies to a question. Hence, apart from their non-sentential nature, what these expres-

sions have in common is that they serve as complete contributions to discourse interaction, and must obviously be studied within the context in which they occur.

At the same time, there are linguistic phenomena that relate to the organization of connected discourse and extend their influence over several sentences. In his chapters on the representation of discourse, Dik (1997b) cites a number of phenomena that serve to establish coherence relations. These include iconic sequencing, topic continuity, focus assignment and *tail-head linkage*, which is here illustrated with an example from Kombai (adapted from De Vries 2005: 364):

(2)   a. *Kha-negena   refe fe büwene-n-a   khumolei.*
         go.3SG.NF-until.DS year one finished.3SG.NF-TR-DS die.3SG.NF
         'It went on during one year and then he died.'

      b. *Khumolei-n-a   ifamano.*
         die.3SG.NF-TR-DS   bury.3PL.NF
         'He died and they buried him.'

Tail-head linkage usually involves the repetition of the verb at the beginning of the next clause (as in the case of *khumolei* in the example above), but sometimes it involves the verb of the penultimate clause or even the verb of the clause before that. Such cases show even better that tail-head linkage can only be properly handled by a grammatical theory that goes beyond the boundaries of a traditional sentence grammar.

1.2. Top-down vs. bottom-up

Unlike FG, FDG is a *top-down model* in which the generation of a linguistic expression is assumed to start from a communicative intention which ultimately leads to the grammatical coding of a piece of information and its final articulation or execution ("from intention to articulation"). As noted by Anstey (2004: 45), this adds to the pragmatic-centricity of the model as opposed to the predicate-centricity of FG. In this respect FDG differs from most contemporary grammatical theories, which see the lexicon as the point of departure in the generation of linguistic structures. The top-down organization of FDG is a reflection of its commitment to the standard of psychological adequacy mentioned earlier and was strongly inspired by the psycholinguistic research of Levelt (1989).

Levelt's model of the speaker comprises three different components: a *Conceptualizer*, a *Formulator* and an *Articulator*. Conceptualization involves the creation of a communicative intention and the construction of preverbal message, i.e. a conceptual structure that will serve as input to the Formulator. The process of Formulation translates this preverbal conceptual structure into a linguistic structure (Levelt 1989: 11) and Articulation involves the execution of an acoustic plan by means of the appropriate physiological organs. All three components have a place in the FDG model, as can be seen in *Figure 1* (cf. *Conceptual Component, Formulation* and *Articulation*).

Figure 1 shows that there are four major modules in the organization of FDG: the conceptual, the contextual, the grammatical and the output components. Hengeveld (2004b: 369) emphasizes that the conceptual component is the trigger for the grammatical component to operate. In his view, the conceptual component is responsible for two types of processes: the development of a communicative intention, which has a direct link with the interpersonal level in the grammar (see 1.3 below), and the creation of a conceptualization of that communicative intention, which directly connects to the representational level (Figure 2).[3]

The contextual component represents the speech situation and includes both linguistic and non-linguistic perceptual information. As the dynamics of discourse unfold, the contextual component receives information from the grammatical component and provides the conceptual component with data that are potentially relevant for the creation of new communicative intentions and conceptualizations. One could say that it is of the major functions of the contextual component to connect the grammatical component with the other modules.

The output component corresponds to Levelt's Articulator. However, given the fact that FDG attempts to understand the structure of discourse acts as reflections of different kinds of knowledge deployed by the *natural language user* (J. Lachlan Mackenzie, personal communication), rather than just the *speaker*, the output may take different forms of expression (written, signed or spoken signs).

It is important to emphasize that the conceptual, the contextual and the output components are not part of the grammatical component (Hengeveld and Mackenzie 2006: 669). Although some scholars have made proposals as to the contents or internal structure of the conceptual component (Anstey 2002, Nuyts 2004) and the contextual component (Connolly 2004),[4] FDG, as a linguistic theory, is centrally concerned with the grammatical

component, whose internal structure will be laid out in greater detail in the following section.
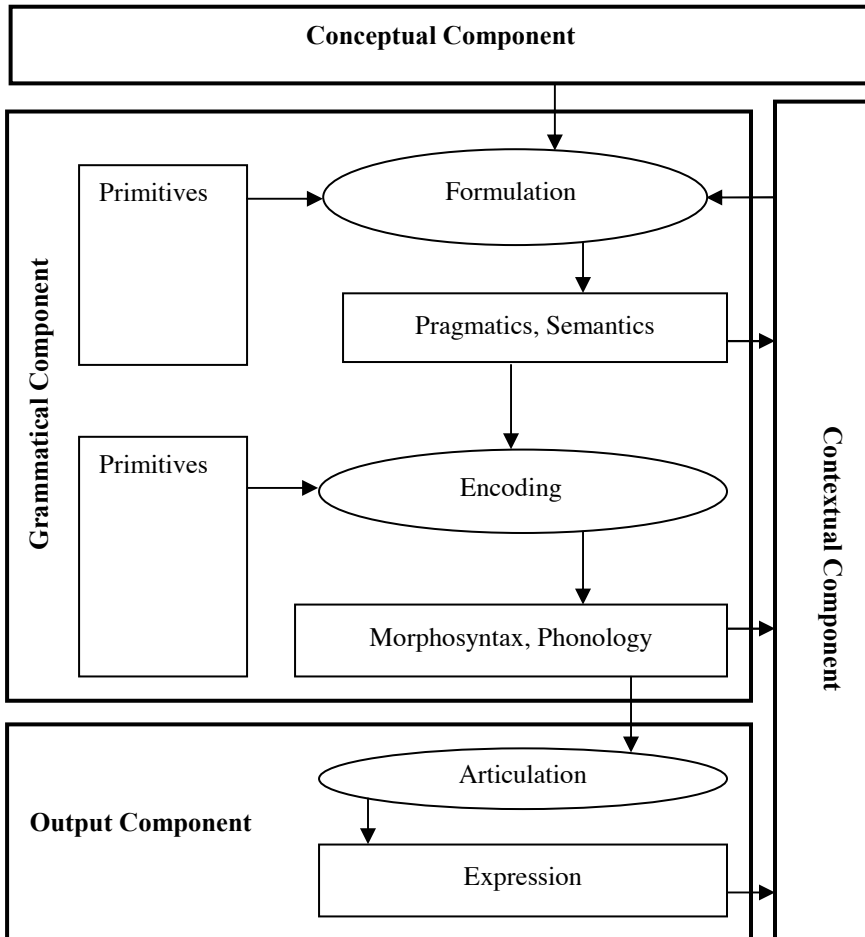
Figure 1. General layout of FDG (Hengeveld and Mackenzie 2006: 669)

1.3. Levels and layers

The grammatical component in FDG is shown in more detail in Figure 2 (Hengeveld and Mackenzie 2006: 670).
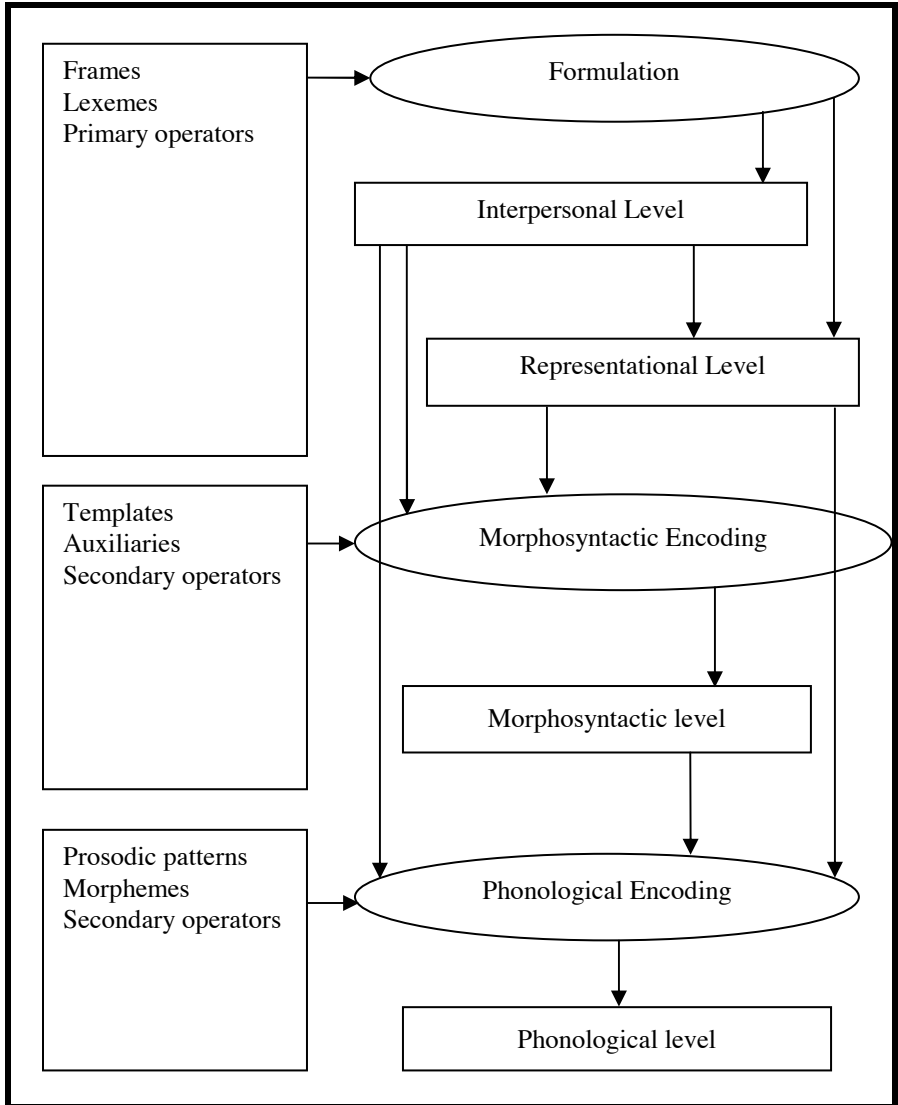
Figure 2. The grammatical component in FDG

Figure 2 shows that FDG posits four levels of representation in the grammatical component: the Representational level, the Interpersonal level (both inherited from classical FG), as well as the Morphosyntactic level (also referred to as the *Expression* or *Structural level*) and the Phonological

level. As noted by Anstey (2004), there is a clear correspondence between the levels and the main areas of linguistic analysis:

(3)   *Pragmatics*   → *Interpersonal Level*
        Semantics   → *Representational Level*
        Morphosyntax   → *Morphosyntactic Level*
        Phonology   → *Phonological Level*

The ovals in Figures 1 and 2 indicate stages in the procedure at which particular operations take place in the grammatical component. *Formulation* means that at this point pragmatic and semantic representations are being produced; the two *Encoding* stages indicate where morphosyntactic and phonological representations (in that order) are being generated. Each operation has of its own set of primitives in the form of frames, templates and operators (among others). Although primitives are assumed to be language-specific (the lexemes of a language are perhaps the most obvious examples of language-dependent primitives), FDG aims at discovering significant cross-linguistic generalizations and hierarchies, which can predict the number and type of frames and templates that a language employs on the basis of a limited set of parameters.

   Unlike FG, the four levels of representation are independently organized and relate to one another through *mapping rules*, signified by arrows. One of the features of FG that is preserved in FDG concerns the use of hierarchical (layered) representations to account for differences in scope. In the next section we will discuss the internal organization of each level in the grammatical component in more detail. The discussion of layering, however, has been postponed to section 2.2, which deals with the layered analysis of both NPs and clauses (or *discourse acts*).

1.3.1. The interpersonal level

The interpersonal level captures the relevant details of the linguistic expression that "reflect its role in the interaction between speaker and addressee" (Hengeveld and Mackenzie 2006: 671). The structure of the interpersonal level is shown in (4) (Hengeveld 2005: 63):

(4) $(M_1: [(A_1: [ILL (P_1)_S (P_2)_A (C_1: [...(T_1) (R_1)...] (C_1))] (A_1))] (M_1))$

The central unit of analysis at this level is the Move (M), which is defined after Kroon (1997: 20) as "the minimal free unit of discourse that is able to enter into an exchange structure". Moves are the grammatical realization of communicative intentions (invitations, proposals, requests, etc.) and are made up of one or more Discourse Acts (A). Mackenzie (2004: 183) argues that the expression in (5) contains one move, but three discourse acts, and can thus be represented as in (6).

(5)   *Oh my God, it's on fire, my hair*
(6) $(M_1: [(A_1, A_2, A_3)] (M_1))$

Each discourse act is characterized on the basis of its illocution, represented by means of an illocutionary frame in which variables are introduced for the speaker $(P_1)_S$ and the addressee $(P_2)_A$[5] The general inventory of illocutionary primitives is given in the following table (Hengeveld and Mackenzie 2006: 672):

Table 1. Illocutionary primitives

DECLarative
INTERrogative
IMPERative
PROHibitive
OPTATive
HORTative
IMPRectaive
ADMOnitive
CAUTionary
COMMissive

The third argument of the illocutionary frame is the communicated content (C), constructed on the basis of *Referential* (R) and *Ascriptive* (T) *Subacts*. These variables, which were absent in FG, make it possible to distinguish between semantic entities and the pragmatic functions of reference and predication or ascription. This is shown in the following example, in which a term designating a spatial object ("a carpenter") is used in a referential act in (7a) and in an ascriptive act in (7b):

(7)   a. *I just talked to **a carpenter**.*
       b. *My neighbour is **a carpenter**.*

The two NPs are now formalized as in (8):

(8)   a. $(R_1: [a carpenter] (R_1))$
       b. $(T_1: [a carpenter] (T_1))$

Since all pragmatic aspects that determine the actual form of the linguistic expression must be specified at the interpersonal level, pragmatic functions such as Topic and Focus are also added to the schema at this level.

1.3.2. The representational level

The representational level "accounts for all the formal aspects of a linguistic unit that reflect its role in establishing a relationship with the real or imagined world it describes" (Hengeveld and Mackenzie 2006: 673), that is, it reflects the use of language as a representational system rather than as a socializing system as at the interpersonal level. The following representation shows the hierarchical organization of this level (adapted from Hengeveld 2005: 64):

(9) $(ep_1: [(p_1: [(e_1: [(f_1: \dots (f_1))] (e_1))] (p_1)) \dots (p_n)] (ep_1))$

The variable "ep" stands for *episode*, defined as a set of *propositions*. There is an important difference between FG and FDG in that the proposition (represented by the p-variable in FDG) is now assumed to be part of the representational level rather than the interpersonal level. As in FG, the representational level is constructed on the basis of predicates (symbolized by the f-variable[6]) which designate a property or a relation. All lexemes of a language are analysed as predicates and therefore represented as in (10):

(10) $(f_1: lexeme (f_1))$

When the *lexeme* slot is filled by a first-order noun (i.e. a nominal predicate designating a property of a spatial entity), the schema in (10) is used to give a semantic description of one or more individuals (represented by the x-variable; variables for other entity types are discussed below):

(11) $(x_1: (f_1: lexeme_N (f_1)) (x_1))$

Terms and predicates may be combined to create predications, which designate States of Affairs and are represented by the e-variable. As an example, consider the representation of the predication "the man opened the door" (see section 2.3 for a more complete representation of NPs in FDG):

(12) $(Past\ e_1: (f_1: open_V (f_1)) (1\ x_1: (f_2: man_N (f_2)) (x_1))_{Ag}$
$(1\ x_2: (f_3: door_N (f_3)) (x_2))_{Pat} (e_1))$

The verbal predicate *open* designates a relation between two individuals, *man* and *door*, which are characterized as the Agent (Ag) and the Patient (Pat) of the action, respectively. The combination of these three units is used to describe a State of Affairs (symbolized by the e-variable), which, in turn, is located in the past time by the "Past" operator. The representation in (12) also contains the term operator "1" for both *man* and *door*, which stands for singular number.

1.3.3. The morphosyntactic level

In classical FG, underlying representations like (12) are converted into actual linguistic expressions after the application of a number of expression rules that take care of the form and order of the constituents in sentences. Since these expression rules involve language specific features, it is here that the differences between individual languages are made explicit. This indicates that in FG syntax is merely regarded as the actualization of an underlying semantic representation. Indeed, syntactic constituents and word order are not considered primitive notions in FG, but the result of complex interactions between general ordering principles.

In FDG, by contrast, linear order and constituent structure have been given a more prominent status with the introduction of a separate morphosyntactic level. In accordance with basic functional methodology, FDG assumes that syntactic order can generally be explained on the basis of the meaning and use of linguistic expressions. However, the theory also admits that certain syntactic facts may be governed by independent principles, which warrant "the postulation of a separate morphosyntactic level within the grammar, rather than as the output of the grammar as in FG" (Hengeveld and Mackenzie 2006: 675).

Like the other levels of representation, the morphosyntactic level is fed by primitives in the form of *syntactic templates*, which provide slots for the insertion of lexical units. Syntactic templates are reminiscent of *functional patterns*[7] in FG, i.e. rather simple ordering schemas which define basic clausal syntactic configurations. Here are the functional patterns proposed by Dik (1980: 218, 220) for some clause types in English (V_f = finite verb, V_i = infinitival verb):[8]

(13)   a. P1 S V_f V_i O X   *declarative sentence*
       b. P1 V_f S V_i O X   *interrogative sentence*
       c. P1 V_f V_i S X   *existential sentence*

Constituents at the representational level are assigned a position in a functional pattern through the application of placement rules, which are in turn sensitive to information specified in the underlying representation. However, in this approach a "semantic" constituent at the representational level does not always map directly onto a syntactic position in the functional pattern. This problem does not occur in FDG, where the separation between the representational and the morphosyntactic level allows for independent semantic and morphosyntactic representations of linguistic expressions. In view of the fact that F(D)G does not permit movement operations, this is especially useful in the case of syntactic discontinuity, extraposition, raising, etc. (see Hengeveld and Mackenzie 2005). Having separate levels of representation in the grammatical component also makes it possible to account for cases where different semantic representations are mapped onto the same syntactic template (De Groot 2005: 150). Moreover, since functional patterns as used in FG cannot handle any restrictions on the ordering of elements within a construction, FDG has extended its inventory of syntactic templates, which now also includes templates for the constituents of the clause.

The organization of the morphosyntactic level has been slightly modified since the first presentation of the FDG model. Initially the following hierarchical structure was proposed (Hengeveld 2004a: 6):

(14) $(Para_1: [(S_1: [(Cl_1: [(PrP_1: [(Lex_1)] (PrP_1)) (RP_1: [(Lex_2)] (RP_1))]$
        $(Cl_1))] (S_1))] (Para_1))$

The units distinguished in (14) are: *Paragraph* (Para), *Sentence* (S), *Clause* (Cl), *Predicative Phrase* (PrP), *Referential Phrase* (RP) and *Lexeme* (Lex). It was understood at the time that this representation is only a first ap-

proximation, given that languages may be more specific in the syntactic units they distinguish. In subsequent publications, though, the terms Predicative Phrase and Referential Phrase have been replaced by traditional constituency labels such as Verb Phrase or Noun Phrase, for reasons to be discussed in section 2.[9]

Moreover, the structure has been simplified by eliminating the variables on the right of the representation, whose role in the representation was not entirely clear. Thus, the morphosyntactic level in current FDG may also be represented as follows:

(15) $_{Para}$ [$_S$ [$_{Cl}$ [$_{VP}$ [Lex_1 …. Lex_n] $_{NP}$ [Lex_1… Lex_n]]]]

Although the morphosyntactic (and other) levels in FDG are supposed to be fed by primitives, and can thus be considered static, some authors have argued for a dynamic interpretation of FG expression rules (Bakker 2001, 2005; Bakker and Siewierska 2002). Hengeveld (2005) shows that this idea is compatible with the general architecture of FDG, thus adding to the psychological adequacy of the model.

2.   The Noun Phrase in Functional (Discourse) Grammar: A brief history

Before presenting a brief overview of the way Noun Phrases (Terms, Referential Acts/Phrases) have been represented in *Functional Grammar* and *Functional Discourse Grammar*, we must first say a few words about the label *Noun Phrase*. There has always been a fair degree of reluctance to use the label Noun Phrase in FG and its successor FDG. The reason why Noun Phrase is generally avoided in these theories is that it is a formal label which only informs us about the intrinsic properties of a constituent, rather than a functional name that specifies the relation of a constituent to the construction in which it occurs (cf. Dik 1997a: 126-127). If we were to use only functional names (such as *Subject*, *Topic* or *Agent*), however, we would know very little about the intrinsic properties of the constituent in question. Ideally there should be straightforward names for linguistic categories that tell us something about the formal *and* the functional properties of a linguistic form or construction, but apparently such category labels are not always easy to find (see below).

So as to avoid the use of purely formal category labels in F(D)G, several alternatives for the name Noun Phrase have been proposed, but so far

it has been difficult to come up with an acceptable label that avoids the form/function bias in its name. Thus, Hengeveld's *Referential Phrase* (Hengeveld 2004a: 7; on *Referring*, see also Hengeveld this volume) met with some resistance, because it did not quite cover all the forms and constructions it was supposed to include (for example, semanticists claim that phrases can only be referential if they have definite or specific reference; cf. Saeed 2003: 25).[10] Earlier Dik (1997a: 55, 127) had proposed the word *Term*, which was defined as "[…] any expression which can be used to refer to an entity or entities in some world". Whereas the definition of Referential Phrase is perhaps too narrow, the definition of Term is rather wide, since it basically includes any kind of expression that can fill an argument or adjunct (satellite) position (e.g. pronouns, complement clauses, headless relative constructions).[11] In sum, when we use a formal label such as Noun Phrase, we exclude forms and constructions that can occur in the same function as a noun phrase (such as pronouns or complement clauses). On the other hand, names such as Term or Referential Phrase are either too general (covering a wide variety of forms and constructions) or too narrow in that the definition only includes certain terms or noun phrases.

The basic problem with names for linguistic categories seems to be that they tend to be based either on formal or on functional properties and that there is usually no direct relationship between them. The same constituent may occur in different functions, and the same function may apply to different forms or constructions (cf. Dik 1997a: 26). This is shown in the following examples from Dutch, each of which involves an adnominal modifier introduced by the preposition *van* "of". These examples demonstrate that the same kind of form or rather construction ("prepositional phrase") can be employed as a classifying, a qualifying or a localizing modifier.[12]

<u>*Same form*</u>: *attributive prepositional phrase with van 'of' (Dutch):*

Classifying
(16) *een   man   **van   God***
      a   man   of   God
      'a man of God' (i.e. a priest, a prophet, a religious leader)

Qualifying
(17) *een   vrouw   **van   middelbare leeftijd***
      a   woman   of   medium   age
      'a middle-aged woman'

Localizing
(18) *de   auto **van   mijn zus***
      the   car   of   my   sister
      'my sister's car'

Conversely, a qualifying modifier (a functionally defined category) can take the form of an adjective, a noun phrase introduced by 'of' or a relative clause:

Same function: *qualifying modifier (English):*

Qualifying adjective
(19) *a **rich** man*

Qualifying NP (plus 'of')
(20) *a woman **of great stature***

Qualifying relative clause
(21) *a man **who sometimes likes to drink***

These examples also show that we can characterize a linguistic category by using a combination of a formal and a functional name. Thus, a name such as *Qualifying Adjective* informs us about the function (qualifying, rather than e.g. quantifying or localizing) as well as the form of the modifier in question (namely that the constituent belongs to the word class Adjective). One could do the same with Noun Phrase, i.e. combine this formal category label with functional labels such as Subject (*Subject NP*) or Qualifying (*Qualifying NP*), but it seems that in this case the problem outlined above is more difficult to circumvent (perhaps this is typical for higher-level categories like Noun Phrase or Term).[13]

In spite of this labelling problem, and for all practical purposes, we have decided to use the name Noun Phrase, even though this volume is not restricted to prototypical noun phrases (also devoting discussion to proper names, pronominal terms and other terms not headed by a proper noun) and in spite of the fact that a wide variety of both formal and functional issues concerning "the noun phrase" are investigated in this book, often in the same chapter (see e.g. García Velasco's contribution; for more discussion on the terminology issue see Bakker and Pfau this volume).

2.1. The Noun Phrase in Functional (Discourse) Grammar

It is possible to recognize three stages in the representation of NPs in F(D)G:

1. FG I: "flat" representations in a bottom-up model;
2. FG II: multi-layered (hierarchical) representations in a bottom-up model;
3. FDG: multi-layered representations in a multiple-level, top-down model.

The first two stages are separated by the introduction of a layered model of the NP in Dik's *Functional Grammar*; the introduction of *Functional Discourse Grammar* (section 1) marks the beginning of the third and present stage.
     Initially NPs ("terms") were represented as non-hierarchical or "flat" structures (Dik 1978: 57; Dik 1989: 55, 115):[14]

(22) $(\Omega x_i: \phi_1(x_i): \phi_2(x_i): ...: \phi_n(x_i))$ [n $\geq$ 1]

or (Dik 1997a: 132):

(23) $(\omega x_i: \varphi_1(x_i): \varphi_2(x_i): ...: \varphi_n(x_i))$ [n $\geq$ 1]

In this NP schema Ω/ω stands for various kinds of grammatical categories in the NP (called term operators), such as "(in)definiteness" (i or d) and "number" (1 "singular" or m "plural") or "cardinality" (any cardinal number). x_i is the variable ranging over the set of potential referents (see below on variables for semantic categories).[15] Each ϕ/φ signifies a predicate (typically a nominal, adjectival or verbal predicate), and each $\phi(x_i)/\varphi(x_i)$ is an open predication in (x_i), i.e. a frame in which all the argument positions but that of x_i have been filled. Open predications are also called restrictors, because they successively restrict the range of possible referents of the NP. The first restrictor (ϕ_1/φ_1) is normally the head noun; the others restrictors can take a variety of forms, such as an adjective, a verb (often heading a relative clause), or a possessor NP (in which case we would be dealing with a so-called term predicate; see (25) below). The colon between the restrictors indicates that the information to the right gives a specification of, or a restriction on, the possible values of x_i as it has been specified at that point. To give an example, the underlying structure of the simple NP *the three big dogs* is as follows:

(24) $(d3x_i: dog_N(x_i): big_A(x_i))$
        'the three big dogs'

This is to be paraphrased as "definite three entities x_i such that the property 'dog' applies to x_i, such that the property 'big' applies to x_i" (Dik 1989: 115). A complex NP, which contains one or more *embedded* modifiers, may look like this:

(25) $(d3x_i: dog_N(x_i): big_A(x_i): \{d1x_j: garden_N(x_j)_{Location}\}(x_i))$
        'the three big dogs in the garden'

In this example the third restrictor $\{d1x_j: garden_N(x_j)_{Location}\}(x_i)$ is expressed as a prepositional phrase (*in the garden*), which is analysed as a term predicate with the semantic function Location (on term predicates, see Dik 1997a: 204-206).[16]

    The next example has as the second restrictor a relative clause headed a verb, which refers to an event or situation (i.e. a temporal entity), which is symbolized by the e-variable, introduced in Vet (1986), which is also employed in FDG (see also section 1.3.2; m = plural, R = relative operator):

(26) $(dmx_i: dog_N(x_i): [Past\ e_i: attack_V(Rx_i)_{Agent}(dmx_j: child_N(x_j))_{Goal}])$
        'the dogs that attacked the children'

Several changes were proposed to modify the original schema; this section only highlights the use of different *variables* for semantic categories in the modelling of linguistic expressions. The employment of *layering*, another major change in the representation of NPs, is discussed in section 2.2.

    Apart from variables for term operators (Ω) and predicates (ϕ), the first book-length publication on FG used only variables "x" for arguments and "y" for satellites (Dik 1978: xi). With the introduction of layering into FG (Hengeveld 1989), however, the number of variables for *semantic categories* expanded considerably. Dik (1989: 50; 1997a: 93) lists variables for five categories (notice that the y-variable has disappeared):

(27) | ORDER | STRUCTURE | TYPE | VARIABLE |
       |---|---|---|---|
       | 0 | predicate | Property/Relation | f |
       | 1 | 1st order term | Spatial entity[17] | x |
       | 2 | predication | State of Affairs | e |
       | 3 | proposition | Possible fact | X |
       | 4 | clause | Speech Act | E |

Dik (1989: 113; 1997a: 129) explicitly stated that entities are mental constructs. Presumably many mental constructs of spatio-temporal entities do not exist independently of entities in the external physical world, but the relation between a mental construct of an entity and its counterpart in the real world is a difficult issue with a long philosophical history that we will not discuss here. Suffice to say that the problematic relation between mental and physical entities in the representation of linguistic expressions has also been given due attention in FG and FDG (e.g. Vet 1998), and is also touched upon in this book (see, for example, the contributions by Escribano, Keizer and Rijkhoff).

Having different variables for the various kinds of entities offers several advantages for the representation of linguistic expressions. To mention one that is relevant for the current volume, they make it possible to distinguish between nouns that are used to talk about different kinds of entities (Dik 1989: 180-181). Thus, an NP headed by a noun denoting a concrete object like *table* (a first-order noun) contains an x-variable, as in (d1 x_i: table$_N$ (x_i))[18] *the table*, whereas an NP headed by an event noun such as *meeting* (a second-order noun) will contain an e-variable as in (d1 e_i: meeting$_N$ (e_i)) *the meeting* (Dik 1997a: 214-216).

The use of different variables for different kinds of entities is also motivated by the fact that different kinds of entities are specified for different kinds of properties. Thus, a first-order noun like *table* can be specified for spatial properties (such as weight, size, or colour – *a heavy/large/black table*), whereas a second-order noun like *wedding* can be characterized in terms of temporal properties (e.g. duration, as in *a quick wedding*; cf. Rijkhoff 2001).[19] There are also other grammatical phenomena that can be accounted for by using separate variables for distinct categories, such as the fact that languages may employ different anaphoric pronouns for different kinds of entities (Dik 1997b: 223-228). For example, English uses anaphoric *it* for spatial objects (symbolized by the x-variable), whereas anaphoric *so* is used for possible facts (here symbolized by the X-variable; notice that we only use skeleton representations to bring out the contrast):

(28) a. *Cherie dropped [the briefcase]$_i$, but Tony picked **it**$_i$ up*
      b. drop (Cherie) (x_i: the briefcase), but
         pick_up (Tony) (Ax_i)

(29) a. *John thought that [Bill would win]$_i$ and Peter thought **so**$_i$ too*
      b. think (John) (X_i: [Bill would win]) and
         think (Peter) (AX_i) too

In addition to the categories listed in (27), variables have been proposed for places, times, manners and quantities and it seems that "the FG ontology of entities" (Anstey and Mackenzie eds. 2005: 166) will continue to be expanded.[20] The current list of variables for semantic categories in FDG at the Representational Level is as follows (Hengeveld and Mackenzie 2006: 673):[21]

(30) | SEMANTIC CATEGORY | VARIABLE | EXAMPLES (NOUNS) |
|---|---|---|
| Individual | x | *chair, brother-of, writer* |
| State-of-Affairs | e | *meeting, cause_of, game* |
| Propositional content | p | *idea, belief_in, hope* |
| Property/relation | f | *color, fond_of, kindness* |
| Location | l | *garden, top_of, brewery* |
| Time | t | *week, end_of, daytime* |

Notice furthermore that linguistic expressions such as NPs and clauses can be regarded as constituting a separate ontological category with their own set of variables. This makes it possible to distinguish between linguistic expressions and the referents of those expressions (Rijkhoff 2002: 228).[22] For example, one could argue that in (31) the pronoun *her* refers to the referent of *Sophia*, but that the pronoun in boldface *that* refers to the name *Fietje* rather than the referent of that name:

(31)   A: *I used to call Sophia 'Fietje'.*
       B: *When did you stop calling her **that**?*
       (i.e. "When did you stop calling her **by that name**?")

In FDG anaphoric reference to linguistic forms or constructions is accounted for at the morphosyntactic level, where they are provided with an index (Hengeveld and Mackenzie 2006: 675; Hengeveld this volume).

2.2. Layering in the noun phrase

The most significant development in FG was Hengeveld's proposal to analyse the clause as a hierarchically organized layered structure, in which each layer defines a different kind of entity. Furthermore, each individual layer comes with its own set of operators and satellites, symbolized by indexed variables π and σ (representing various kinds of grammatical and lexical modifiers respectively; Hengeveld 1989; Dik 1989: 50).

Hengeveld's early version of the layered clause model was as follows (Hengeveld 1990: 3-6, 12):

(32) $(E_i: \pi_4 \text{ ILL}: \sigma_4 \text{ (S) (A) } (\pi_3 X_i: \text{ ---- } (X_i): \sigma_3 (X_i))] (E_i): \sigma_5 (E_i))$ IL

$(\pi_2 e_i: [\pi_1 \text{ Predicate}_\beta: \sigma_1 (\Omega x_i) \ldots (x_n)] (e_i): \sigma_2 (e_i))$ RL

layers and frames	*operators*	*satellites*
x_i: term	Ω: term operators	
pred: predicate frame	π_1: predicate operators	σ_1: predicate satellites
e_i: predication	π_2: predication operators	σ_2: predication satellites
X_i: proposition	π_3: proposition operators	σ_3: proposition satellites
ILL: illocution frame	π_4: illocution operators	σ_4: illocution satellites
E_i: clause		σ_5: clause satellites

To illustrate this proposal with a concrete example, let us consider the representation of *Probably, the three big dogs were barking in the garden*. At the Representational Level (RL), the speaker describes one event in which three big dogs engage in the activity of barking. This is constructed on the basis of the predicate frame (roughly, argument structure) of the lexeme *bark*, which offers one slot for the agent of the action. It is in that position that the NP representation in (23) is inserted. The verbal predicate is furthermore modified by the π_1 operator Prog (progressive aspect), and the whole predication is located in time by the π_2 operator Past and in space by the σ_2 satellite *in the garden*:

(33) $(\text{Past } e_i: [\text{Prog bark}_V (d3x_i: \text{dog}_N (x_i): \text{big}_A (x_i))_{\text{Agent}}] (e_i):$
       $(d1x_j: \text{garden}_N (x_j))_{\text{Location}} (e_i))$

At the Interpersonal Level (IL), the speaker evaluates the actual occurrence of the State of Affairs described in (33) as probable through the σ_3 proposition satellite *probably*. Finally, the whole linguistic expression is characterized as a declarative speech act, which is represented through the π_4 illocution operator DECL:

(34)   (E$_i$: DECL ILL (S) (A) (X$_i$: -------- (X$_i$): (probable$_A$)$_{Manner}$ (X$_i$))] (E$_i$))

(Past e$_i$: [Prog bark$_V$ (d3x$_i$: dog$_N$ (x$_i$): big$_A$ (x$_i$))$_{Agent}$] (e$_i$): (d1x$_j$: garden$_N$ (x$_j$))$_{Location}$ (e$_i$))

Hengeveld's layered structure of the clause was adopted by Dik (1989, 1997a), but not in its entirety. One major difference concerned the way speech acts are represented in FG: as an E-variable in Dik (1989: 50; 1997a: 66) and as a predicate in Hengeveld's original proposal and in current FDG. The schema in (32) shows that Hengeveld's illocutionary predicate ILL takes the speaker (S), the addressee (A) and the proposition (X) as its arguments and in this schema the E-variable stands for the utterance rather than the speech act. The illocutionary predicate frame is maintained in FDG, as we saw in section 1.1.1, although the variable for speech participants is now "P", which is provided with a subscript for the speaker or the addressee.

Hengeveld's original proposal already distinguished between the Interpersonal Level and the Representational Level, a distinction due to Bühler ([1934] 1999) and Halliday ([1985] 2004). Even though there are obvious similarities between the schema in (32) and the schemas that are used at the interpersonal and representational levels in FDG (section 1), there are also certain differences, in particular with respect to the distribution of layers and entities. In current FDG, for example, the proposition (now symbolized by the p-variable) is an entity that is specified at the Representational level, as shown in (9), rather than the Interpersonal Level, as in FG (shown in (32) above).

Inspired by Hengeveld's (1987a-b, 1988, 1989) first proposals for a layered analysis of clausal structures and by some of Aristotle's categories (*Physics* V. II), Rijkhoff (1988) subsequently proposed a layered model of the noun phrase. Initially only three layers were recognized: the innermost layer for qualifying modifiers (*Quality Layer*), the outermost layer for localizing modifiers (*Location Layer*) and in between a *Quantity Layer* to accommodate quantifying modifiers (it is important to point out that in this approach "modifier" subsumes both grammatical and lexical modifier categories, i.e. operators and restrictors or satellites). It was argued from the very beginning that the three-layered analysis of NPs also applied to clauses, indicating that NPs and clauses (or rather "predications") can be analysed in a similar fashion. To emphasize parallels between the underly-

ing structure of the NP and the clause, non-first restrictors were analysed as satellites.[23] In Figure 3 the hierarchical organization of the layers is represented in a concentric fashion, showing more clearly that modifiers at an outer layer have semantic scope over material specified at the inner layer or layers (σ = clause satellite, τ = NP satellite). Recall that there is no one-to-one relationship between form and function and this is especially true for satellites (as was shown in examples (16-21) above). Consequently, semantic modifier categories such as *tense* or *definiteness*, which are expressed by affixes, function words or other grammatical markers, can still be more or less profitably connected with a certain layer, but in the case of satellites the relation between form and function is so indirect that we can only list the various forms or constructions that are used as modifiers in the clause or NP (e.g. adverb(ial), adjective, relative clause).

The three-layered NP structure also contained a slot for nominal aspect markers, a new grammatical category whose members further specify the *Seinsart* of a noun (i.e. lexicalized nominal aspect or "mode of being"), indicating that the entity it denotes is, for example, a singular object rather than a collective entity (Rijkhoff 1991; 2002: 100-121; this volume).[24] Nominal aspect is, of course, the counterpart of verbal aspect: perfective or imperfective aspect markers further specify the *Aktionsart* of a verb (lexicalized verbal aspect or "mode of action").

As in the case of Hengeveld's layered analysis of the clause, the three-layered analysis of NPs (and clauses or rather "predications") was largely adopted by Dik (1997a), in particular the distinction between qualifying, quantifying, and localizing operators (Dik 1997a: 163, 218).

(35)   a.   *Underlying Clause Structure*
            π_2-Loc π_2-Quant e_i: [π_1-Qual pred [V/A] (args)]

       b.   *Underlying Term Structure*
            ω_2-Loc ω_2-Quant x_i: [ω_1-Qual pred [N]   (args)]

Notice, however, that both localizing and quantifying operators are treated as "second layer" operators, since Dik (1997a: 219) believed "more research should be done on the interaction between Quantification and Localization of SoAs".

Grammatical expression of Kind, Quality, Quantity and Location in the clause

Lexical expression of Kind, Quality Quantity and Location in the clause

Figure 3.   Symmetry in the underlying structure of the clause and the NP: 1992 version

Since then Rijkhoff has added two layers of modification to his version of the layered NP/clause model, one for *discourse-referential modifiers* in the outer periphery (layer number 4), the other for *classifying modifiers* close to the core (layer number zero). Figure 4 shows how the five layers distinguished in Rijkhoff's proposal (plus two additional clausal layers) are distributed over the Interpersonal and the Representational Levels in FDG (notice that in this model all four entities have an intersubjective dimension).

INTERPERSONAL LEVEL ('LANGUAGE AS EXCHANGE')
At the *Interpersonal Level*, modifiers are concerned with the
Interpersonal Status of **four** kinds of entities in the *World of Discourse*:
[i] clauses (or rather the messages contained in the clauses),
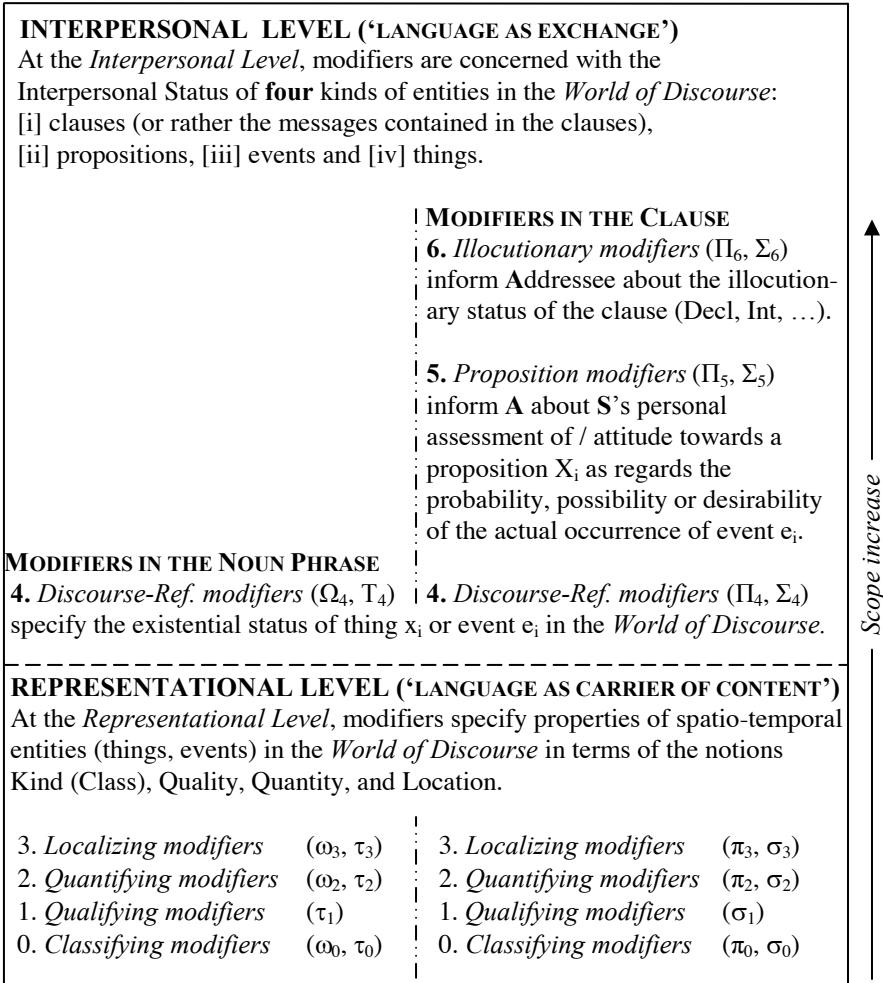[ii] propositions, [iii] events and [iv] things.

MODIFIERS IN THE CLAUSE
6. *Illocutionary modifiers* (Π_6, Σ_6)
inform **A**ddressee about the illocution-
ary status of the clause (Decl, Int, …).

5. *Proposition modifiers* (Π_5, Σ_5)
inform **A** about **S**'s personal
assessment of / attitude towards a
proposition X_i as regards the
probability, possibility or desirability
of the actual occurrence of event e_i.

MODIFIERS IN THE NOUN PHRASE
4. *Discourse-Ref. modifiers* (Ω_4, T_4) **4.** *Discourse-Ref. modifiers* (Π_4, Σ_4)
specify the existential status of thing x_i or event e_i in the *World of Discourse*.

- -

REPRESENTATIONAL LEVEL ('LANGUAGE AS CARRIER OF CONTENT')
At the *Representational Level*, modifiers specify properties of spatio-temporal
entities (things, events) in the *World of Discourse* in terms of the notions
Kind (Class), Quality, Quantity, and Location.

3. *Localizing modifiers* (ω_3, τ_3) 3. *Localizing modifiers* (π_3, σ_3)
2. *Quantifying modifiers* (ω_2, τ_2) 2. *Quantifying modifiers* (π_2, σ_2)
1. *Qualifying modifiers* (τ_1) 1. *Qualifying modifiers* (σ_1)
0. *Classifying modifiers* (ω_0, τ_0) 0. *Classifying modifiers* (π_0, σ_0)

Scope increase

Figure 4. Parallels in the layered model of the noun phrase and the clause
(Rijkhoff to appear, this volume).[25]

The 5-layered NP model can be formally represented as the structure in
(36), in which each operator (ω, Ω) or satellite (τ, T) takes a certain layer
(L) as its argument. Notice that in this representation the Interpersonal and
the Representational levels do not clearly co-exist as separate entities (as in
current FDG) and that the f-variable has been omitted (see note 17).

(36) NP_i: $\Omega_4[\ \omega_3[\ \omega_2[\ \omega_0[\ NOUN(x_i)\ ]_{L0}\ \tau_1(L_0)\ ]_{L1}\ \tau_2(L_1)\ ]_{L2}\ \tau_3(L_2)\ ]_{L3}\ T_4(L_3)$

A somewhat simplified representation of the NP *those three black sniffer dogs* looks like this:

(37) NP_i: Def [Dem_{Remote} [3 [ω_0 [dog(x_i)]$_{L0}$ sniffer(L_0)]$_{L1}$
        black(L_1)]$_{L2}$ $\tau_3(L_2)$]$_{L3}$ $T_4(L_3)$

In this schema, x_i symbolizes the referent of the NP and L stands for "layer" (e.g. L_3 is the layer accommodating localizing modifiers ω_3 and τ_3). Operators and satellites of layer N take the same argument (i.e. information specified in Layer$_{N-1}$). The indexed variable NP_i allows for reference to the noun phrase as such.

Rijkhoff argued that certain localizing modifiers, such as definite articles and noun modifiers like *same* or *other*, are better analysed as discourse-referential operators (Ω_4) or satellites (T_4), in that they are directly concerned with the status of an entity in the shared world of discourse (Rijkhoff 2002: 229-238). Instances of discourse-referential modifiers in the clause are realis/irrealis markers (Π_4) and adverbials such as *actually* or *really* (Σ_4). The claim that articles and (ir)realis markers should occupy the same kind of modifier slot in a layered representation of the NP and the clause is substantiated by the fact that some languages use the same marker for spatial and temporal entities to indicate that an entity is grounded in the world of discourse (Rijkhoff 1990; Rijkhoff and Seibt 2005). In these examples from Fongbe the element in question is glossed as DET ("determiner"):[26]

Fongbe (Lefebvre 1998: 94, 99; see also Lefebvre and Brousseau 2002)
(38)   *N   ɖù   àsɔ́n   ɔ́*
        I   eat   crab   DET
        'I ate the crab (in question/that we know of)'

(39)   *Jan   wá   ɔ́*
        John   arrive DET
        'Actually, John arrived'

Further research into the layered NP structure and similarities between the underlying structure of the NPs and the clause has resulted in a schema that also has a special layer for classifying modifiers (Rijkhoff to appear, forth-

coming a-b; this volume). Classifying modifiers (ω_0/τ_0, π_0/σ_0) indicate what *kind* of entity is being denoted, specifying features that (sub)-categorize entities into a system of smaller sets, as in (40a-b):

(40)   a. *a **corporate** lawyer*
      b. *a **boy's** shirt*[27]

There is no longer a complete symmetry between operators and satellites in the 5-layered NP/clause model (Figure 4). It has emerged that the elements that were originally categorized as *qualifying* operators are actually *classifying* operators and that "true" qualifying operators probably do not occur (this is explained in Rijkhoff this volume).

2.3.   The noun phrase in Functional Discourse Grammar.

We have seen two major developments in the representation of the NP in F(D)G. One was Rijkhoff's proposal to extend Hengeveld's layered analysis of clausal structures to the NP, first suggested in 1988 and later partly adopted by Dik (1997a). The other major change occurred with the introduction of FDG (Hengeveld 2004a-b, 2005; Hengeveld and Mackenzie 2006). As mentioned in section 1, in certain respects FDG is a continuation of FG, in particular with regard to the basic assumptions, methods and goals that characterize structural-functional approaches to grammar (Butler 2003). But we can also see a clear break between FDG and its predecessor: the top-down organization, the focus on discourse acts rather than sentences as the basic unit of analysis, and the strictly modular approach with respect both to the four main components in FDG (grammatical, conceptual, contextual, output) and to the four levels inside the grammatical component (pragmatic, semantic, morphosyntactic, phonological).

    As to the NP, some features of the way NPs were analysed in FG have been adopted in FDG, albeit perhaps in some modified form, but there are also some important differences. First of all, we find a strict separation between the four levels in the grammatical component mentioned earlier. This is shown in (41) and (42) for the interpersonal and the representational levels (Hengeveld this volume):

(41)   *Interpersonal Level:*
       ($\Pi^R R_I$:   ....   (R_I): Σ^R (R_I))

(42)   *Representational Level:*
   $(\pi^x x_i: (\pi^f f_i: Lex_N (f_i): \sigma^f (f_i)) (x_i): \sigma^x (x_i))$

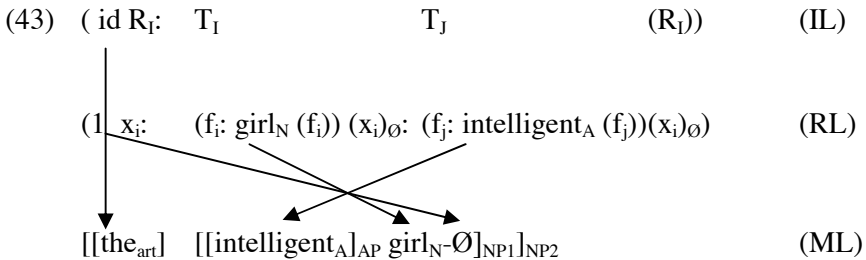| *Operators*	*Modifiers*
Π^R Identifiability, Specificity	Σ^R Subjective attitude
π^x Location, Number	σ^x Referent modification
π^f Shape, Measure	σ^f Reference modification

Since discourse units are now analysed at four distinct levels, we also get four representations of the same NP:

– at the Interpersonal Level (IL)
– at the Representational Level (RL)
– at the Morphosyntactic Level (ML)
– at the Phonological Level (PL).

If we temporarily ignore the Phonological Level, the NP *the intelligent girl* is represented as follows in FDG (Hengeveld this volume; R = referential subact, T = ascriptive subact):

(43)   (id R_I: T_I T_J (R_I))   (IL)

   (1 x_i: (f_i: girl$_N$ (f_i)) (x_i)$_\emptyset$: (f_j: intelligent$_A$ (f_j))(x_i)$_\emptyset$)   (RL)

   [[the$_{art}$]   [[intelligent$_A$]$_{AP}$ girl$_N$-Ø]$_{NP1}$]$_{NP2}$ (ML)

The same unit would be represented in classical FG as follows:

(44)   (d1x_i: girl$_N$ (x_i): intelligent$_A$ (x_i))

The most conspicuous difference between the two models resides in the greater degree of exhaustiveness of the FDG representation thanks to the separation of levels. The FG representation in (44) comes close to the Representational Level in (43), but again, there are some significant differences. Definiteness, symbolized by "d" in (44), is specified at the Interpersonal level in FDG and represented through the combination of the Identifiability operator ("id") and the Referential subact variable "R". This

opens the way to a search for more interpersonal modifiers in the NP, a topic which is touched upon by several authors, especially Butler, in their contributions to this volume.

Another obvious difference results from the addition of the morphosyntactic level in FDG. FG representations show semantic rather than syntactic properties and relations and, consequently, there is no underlying syntactic structure. Differences in constituent order across languages are accounted for through general principles, which restrict the range of possible syntactic configurations. FDG, however, assumes that general principles of word order impose restrictions not on semantic representations, but on syntactic configurations, and thus restrict the potential set of templates which are available as primitives in the grammar of languages.

The representations in (43) also show that, strictly speaking, we cannot use labels such as "noun phrase" at the Interpersonal and the Representational Levels in FDG. At the Interpersonal Level we only know that the linguistic expression to be produced in the output component is the result of a definite referential subact (R_I), which contains the two ascriptive subacts T_I (girl$_N$) and T_J (intelligent$_A$). The Representational Level just gives us a semantic schema or frame in which the "first restrictor slot" is filled with the nominal predicate *girl*.

Another important contrast, this time with Rijkhoff's proposal, concerns the way layers are organized in FDG, which uses the same basic format at all levels (Hengeveld and Mackenzie 2006: 671):

(45) $(\Pi/\pi\ \alpha_1: [\text{head}]\ (\alpha_1): \Sigma/\sigma\ (\alpha_1))_\varphi$

In this structure, α_1 symbolizes some variable (e.g. R "referential subact", x "first order entity" or f "property/relation"), which is

– *specified* by operator Π/π (and function φ), and
– *restricted* by the head and optional modifiers Σ/σ.

By contrast, Rijkhoff's model has satellites (instead of non-first restrictors) and both operators and satellites basically serve as predicates that take a certain layer in its scope (rather than a variable). Nevertheless, one could still argue that at some abstract level of representation NPs and clauses are assigned the same underlying structure both in Rijkhoff's NP/clause model and in FDG (even though this is perhaps not always evident from the names used for same-level operator and modifier categories in FDG, as shown in (42)).

Notice, finally, that the superscripts on the variables for operators and modifiers in (40) and (42) indicate that FDG layers are not so much established on the basis of scopal differences between the various kind of operators and satellites, as in Rijkhoff's model, but is rather motivated by the availability of a variable for a particular kind of entity (R, x, f).

3.   The present volume

The previous sections have shown that there are basically three proposals concerning the way NPs should be analysed in F(D)G:

1. the analysis according to "classical FG" (Dik 1997);
2. the analysis proposed in FDG (Hengeveld this volume; Hengeveld and Mackenzie 2006);
3. the combined NP/clause analysis put forward by Rijkhoff (this volume; to appear).

FDG, as the natural successor to FG, has adopted some aspects of the way NPs have been analysed in FG, but as we saw above, the new architecture has also made it possible, and sometimes even necessary, to come up with some new features (notably the strict separation between levels). To what extent FDG can or will accommodate Rijkhoff's proposals depends on several factors. One of the major obstacles seems to be that in FDG layering is intricately connected with variables for entities at the representational level, whereas in Rijkhoff's approach the various layers reflect differences in the semantic scope of operators and satellites.

As may be expected, some of the papers in the present volume (those by Hengeveld, Escribano, Rijkhoff and Keizer) primarily deal with matters of representation. Others, however, are more concerned with the practical application of the model with regard to discourse-interpersonal matters (Butler, Connolly), whereas the contributions by Bakker and Pfau and by García Velasco mainly deal with morphosyntactic issues. It is also true, however, that one cannot make a very strict thematic division between the chapters in this volume, as one of the advantages of the FDG model is precisely the fact that grammatical phenomena can be treated from different perspectives (pragmatic, morphosyntactic, etc.) in a coherent fashion.

In the opening article, Kees Hengeveld (University of Amsterdam, the Netherlands) lays bare the analysis of the NP within the general structure of FDG. He argues that the separation between the interpersonal, the repre-

sentational, and the morphosyntactic levels of analysis in FDG allows for a more transparent and systematic treatment of noun phrases. Hengeveld takes the prototypical noun phrase as his point of departure, which he defines as an NP with a nominal head that denotes a concrete, first-order entity by lexical means and is used referentially rather than ascriptively. He then discusses examples of non-prototypical NPs from various languages and shows how they can be analysed in FDG.

Jan Rijkhoff (University of Aarhus, Denmark) puts forward an alternative, 5-layered model of the NP (with parallels in the clause) within the general framework of FDG, which has separate layers for classifying, qualifying, quantifying, localizing and discourse-referential modifiers (in this approach the term "modifiers" includes both grammatical and lexical modifier categories). In his view, there should be no special slot for a modifier that specifies a subjective attitudinal meaning (Hengeveld's R-modifiers), since such meanings can be expressed in many different ways (e.g. lexically, grammatically, morphosyntactically, prosodically – or a combination of these). Rijkhoff then suggests that all components of the FDG model represent some kind of context and argues that a separate *External/Situational Component* ("E-context") should be added to accommodate elements from the extra-linguistic context (notably the speech situation, including the speech participants), which in current FDG are represented in the *Contextual Component* and at the Interpersonal level in the *Grammatical Component*.

José Luis González Escribano's article (University of Oviedo, Spain) provides a critical assessment of the ways the NP has been analysed in FG and FDG. He observes a number of inconsistencies in the way FDG uses variables, operators and scope, which, he argues, can be eliminated if a hierarchical, binary-branching NP structure is assumed. He suggests FDG should reintroduce Dik's idea of *Dynamic Term Construction* and extend the current ontology of entities. The result would be a more cogent treatment of scope and NP syntax, which does not force the theory to abandon any of its fundamental methodological principles.

Evelien Keizer (University of Amsterdam, the Netherlands) also deals with matters of representation in her analysis of the notions of reference and ascription in FDG. She argues that variables at the representational level represent the "mental extension set" of the entity described, rather than the intended referent. As a consequence, a clear separation is established between the grammatical component and the contextual component in FDG. She tests the validity of her proposal against a wide variety of