

CHAPTER 3

The clause in Functional Grammar

An introduction

This chapter has two aims: firstly, to provide a somewhat more detailed account of the underlying goals of FG, in terms of the criteria of adequacy which underpin the theory, as sketched briefly in Chapter 2; and secondly, to present a preliminary survey of the proposals which have been made for the structure and meaning of the simplex clause in FG. This latter part of the chapter will begin with the account given by Dik (mainly Dik 1997a). I shall then discuss more briefly a number of areas in which proposals have been made which differ significantly from, but are still closely related to, Dik's model. Some of these are very recent, and are likely to prove influential in making substantial changes to some of the key assumptions and claims of FG.

3.1 Underlying goals

Dik states:

... 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. Such a grammar should be able to specify all the linguistic expressions of a language by means of a system of rules and principles in which the most significant generalizations about the language are incorporated. Thus a functional grammar should conform to the standards of adequacy (in particular, descriptive adequacy) such as have been formulated for transformational grammars by Chomsky (e.g., 1965). (Dik 1997a: 12–13)

He goes on to say, however, that there will be differences between Chomskyan and functional approaches in the interpretation of what has been called **explanatory adequacy**, concerned with criteria which will allow us to decide which of a set of descriptively adequate grammars is to be preferred. We saw in §2.3 that FG is committed to three types of criteria of explanatory adequacy: pragmatic, psychological and typological. In this section, I shall examine these criteria in rather more detail than has so far been necessary.

3.1.1 Pragmatic adequacy

In Dik's work, we find two rather different kinds of statement about pragmatic adequacy. A strong position on this issue is suggested by the following statements, in which italics have been added to indicate sections which are particularly relevant to this point:

Since a natural language is an instrument used for communicative purposes, there is little point in considering its properties in abstraction from the functional uses to which it is put. The system underlying the construction of linguistic expressions is a functional system. *From the very start, it must be studied within the framework of the rules, principles, and strategies which govern its natural communicative use.* In other words, the question of how a language is organized cannot be profitably studied in abstraction from the question of why it is organized the way it is, given the communicative functions which it fulfils.

This means that linguistic expressions can be understood properly *only when they are considered as functioning in settings, the properties of which are codetermined by the contextual and situational information available to speakers and addressees.* Language does not function in isolation: it is an integrated part of a living human (psychological and social) reality." (Dik 1997a:6)

... the basic requirement of the functional paradigm is that linguistic expressions should be described and explained *in terms of the general framework provided by the pragmatic system of verbal interaction.* (Dik 1997a:4)

... we must not think of linguistic expressions as isolated objects, but as instruments which are used by a Speaker in order to evoke some intended interpretation in the Addressee, *within a context defined by preceding expressions, and within a setting defined by the essential parameters of the speech situation.* (Dik 1997a:13)

A careful reading of Dik's book, however, reveals that this strong position is not consistently adopted. First, Dik separates pragmatics from the grammars of languages by proposing two distinct sets of rules, one of which is concerned with the specification of the make-up of linguistic expressions, the other with "patterns of verbal interaction":

From the functional point of view, then, linguistics has to deal with two types of rule systems, both ratified by social convention:

- (i) the rules which govern the constitution of linguistic expressions (semantic, syntactic, morphological, and phonological rules);
- (ii) the rules which govern the patterns of verbal interaction in which these linguistic expressions are used (pragmatic rules). (Dik 1997a:3–4)

Dik then goes on to present a much weaker version of pragmatic adequacy than that which I have interpreted from the quotations given earlier. In the following, the italics are again my own:

... although in itself a theory of linguistic expressions is not the same as a theory of verbal interaction, it is natural to require that it be *devised in such a way that it*

can most easily and realistically be incorporated into a wider pragmatic theory of verbal interaction. (Dik 1997a: 4)

We saw above that a functional grammar must be conceptualized as being embedded within a wider pragmatic theory of verbal interaction. Ultimately, it would have to be capable of being integrated into a model of NLU [the Natural Language User (CSB)]. *We shall say that the degree of pragmatic adequacy of a functional grammar is higher to the extent that it fits in more easily with such a wider, pragmatic theory.* (Dik 1997a: 13)

Here, the ‘pragmatic theory of verbal interaction’ is not seen as determining the shape of the theory of linguistic expressions, but as providing a framework with which the theory of expressions should be compatible. In practice, as we shall see in later chapters of this book, it is the second of these views which Dik adopts in *TFG1* and *TFG2*.

At the beginning of *TFG1* (Dik 1997a: 1–2), there is a list of the various capacities which are necessary for the user of language to be able to communicate successfully, and which Dik incorporates into his Model of the Natural Language User (MNLU), described further in Dik (1987, 1988, 1989b, 1989c, 1990a, 1990b).¹ This model includes not only the linguistic capacity modelled in FG itself, but also an epistemic capacity concerned with the creation, maintenance and exploitation of a knowledge base: a logical capacity concerned with inference; a perceptual capacity concerned with the acquisition and use of information from perception of the environment; and a social capacity, underlying the language user’s ability to use language appropriately in particular communicative situations. We shall see, in the course of the two volumes of the present work, that while certain of these capacities have been explored to some extent, others remain virtually uncharted territory. We shall also see that there is a recent trend towards the idea that a separate pragmatic/discoursal module might be responsible not only for aspects of language use so far relegated to the ‘pragmatic theory of verbal interaction’, but also for some phenomena currently handled within the grammar itself.²

3.1.2 Psychological adequacy

In §2.3.4 we saw that Dik’s commitment to **psychological adequacy** is expressed in the following terms:

... such a grammar must also aim at *psychological adequacy*, in the sense that it must relate as closely as possible to psychological models of linguistic competence and linguistic behaviour. (Dik 1997a: 13)

Note that as with the *de facto* interpretation of pragmatic adequacy, the criterion is that the theory should be compatible with what is known about the actual processing of language, rather than that it should be formulated on the basis of our psycholinguistic knowledge.

1. See also §3.6. The computational implementation of this model will be discussed in Chapter 5 of Part 2.

2. See Part 2, especially Chapter 1.

In constructing his model of the Natural Language User, referred to above, Dik hypothesises that conceptual knowledge should be represented in the same format as underlying predications in language:

- (H1) Underlying linguistic structures, pieces of non-perceptual knowledge, and logical forms can be expressed in one and the same unified cognitive representation language.
- (H2) The representation language used for underlying predications in FG is a good approximation to this cognitive representation language. (Dik 1990b:234)

As we shall see in §3.6, this claim has been the subject of severe criticism, largely by Nuyts (1990, 1992a, 2001a) and Hesp (1990a, 1990b).

An area which has received considerable attention from cognitively-oriented linguists is the inherent non-discreteness of many linguistic categories, which is claimed to have its basis in the properties of human cognition. Despite the commitment of FG to psychological adequacy, there is virtually nothing about this in Dik's own work, and even Nuyts' (1992a) 'cognitive pragmatic theory of language', which he calls Functional Procedural Grammar,³ contains no references to work on prototypes or other models of non-discreteness. In other respects, however, Nuyts fully takes on board the commitment to cognitive adequacy:

The cognitive and the pragmatic or functional dimensions of language are not just two separate issues, however. They are two faces of one phenomenon, which must be mutually interrelated and interdependent. The cognitive-pragmatic perspective takes this observation to heart: it assumes that an adequate account of language in general, or of any linguistic phenomenon in particular, has to do full justice to both dimensions simultaneously, in an integrative way. That is, understanding language means 'unearthing' the cognitive infrastructure responsible for producing and perceiving linguistic acts of communication. Ultimately, we do not need different theoretical models explaining different dimensions of this, but one model which coherently integrates both in one encompassing account. That is, ultimately, the functional and the cognitive traditions in language research will have to join hands and agree upon a common explanatory framework. (Nuyts 2001a: 3)

Nuyts (2001a:7) also notes the general lack of concern with matters of conceptualisation in mainstream FG (apart from a small amount of work by Dik himself), RRG and SFG.

Suggestions have, however, been made for the importation of prototype theory into FG in the areas of reference (see Chapter 7), representing situations (states of affairs: see Chapter 8) and illocution (see Chapter 1 of Part 2).

3.1.3 Typological adequacy

As we shall see later, the commitment to pragmatic and psychological adequacy made by Dik has been seen by some as somewhat limited, since it requires only **compatibility** be-

3. See §3.6.

tween the grammar, what is known of the mechanisms of production and understanding, and the ‘theory of verbal interaction’. The commitment to typological adequacy, on the other hand, shows much less reserve: throughout Dik’s own work and that of many of his colleagues there is an ever-present concern for the specification of the grammar in terms which will allow discussion of similarities and differences across a very wide range of language types. In addition to work on individual languages from an FG perspective, there is a considerable number of studies, especially by scholars such as Hengeveld, Rijkhoff, Bakker and Siewierska, in which particular areas of the grammar are studied in relation to a set of languages selected to be representative of a wide typological range.

3.1.4 A note on recent proposals in relation to standards of adequacy

Boland (1999: 12–13) has suggested the addition of a fourth standard, that of acquisitional adequacy, on the grounds that acquisition involves both psychological and pragmatic factors.⁴ She goes on to make an interesting proposal for a division of the four standards into two sets, claiming that pragmatic and psychological criteria restrict possible models of language, while typological and acquisitional criteria act as testbeds for the output of the theory. Boland postulates a link between typological and acquisitional standards in that the psychological complexity of linguistic phenomena should be related to both: psychologically simpler phenomena should be more frequent across the world’s languages and would also be expected to appear before more complex phenomena during language acquisition. Similarly, it is expected that implicational hierarchies will be valid not only across languages, but also in terms of sequencing in acquisition.⁵

Hengeveld & Pérez Quintero (2001: 104), building on Boland’s ideas, suggest that psychological and pragmatic standards are extralinguistic and explanatory, restricting possible theories of grammar in terms of cognitive and socio-communicative factors respectively, while typological and acquisitional standards are intralinguistic and descriptive, being concerned with the evaluation of a grammatical theory in terms of its ability to make correct descriptions of synchronic and diachronic facts in single languages and across languages. As Hengeveld & Pérez Quintero observe, such a position entails that the descriptions of a wide range of linguistic facts, from various languages, different varieties of language, language pathologies, etc. should all be compatible, in that all would be subject to the same set of restrictions. Note that these proposals have the effect of shifting the role of typological adequacy from an explanatory to a descriptive criterion.

4. A very similar proposal is also made, in relation to structural-functional grammars in general, in Butler (1991b: 63–64).

5. Boland’s work on language acquisition within the framework of FG will be described in Chapter 5 of Part 2.

3.2.1 Within and outside the simple clause

A few examples from English are given below:

- Firstly, there are both top-down and bottom-up dependencies within the grammar: for example, as Dik (1997a:56) points out, the choice of an imperative clause (which, as we shall see, occurs at a relatively high level in the model for clause structure) constrains the choice of a State of Affairs type for that clause (a lower level choice), since it must be a controllable State of Affairs in which the Addressee occupies the first argument position. Looking at it the other way round, if we choose, as the nucleus for our clause, a predicate

6. Extracausal constituents will be discussed in more detail at appropriate points in this book and also in Part 2, where I deal with matters related to information structuring.

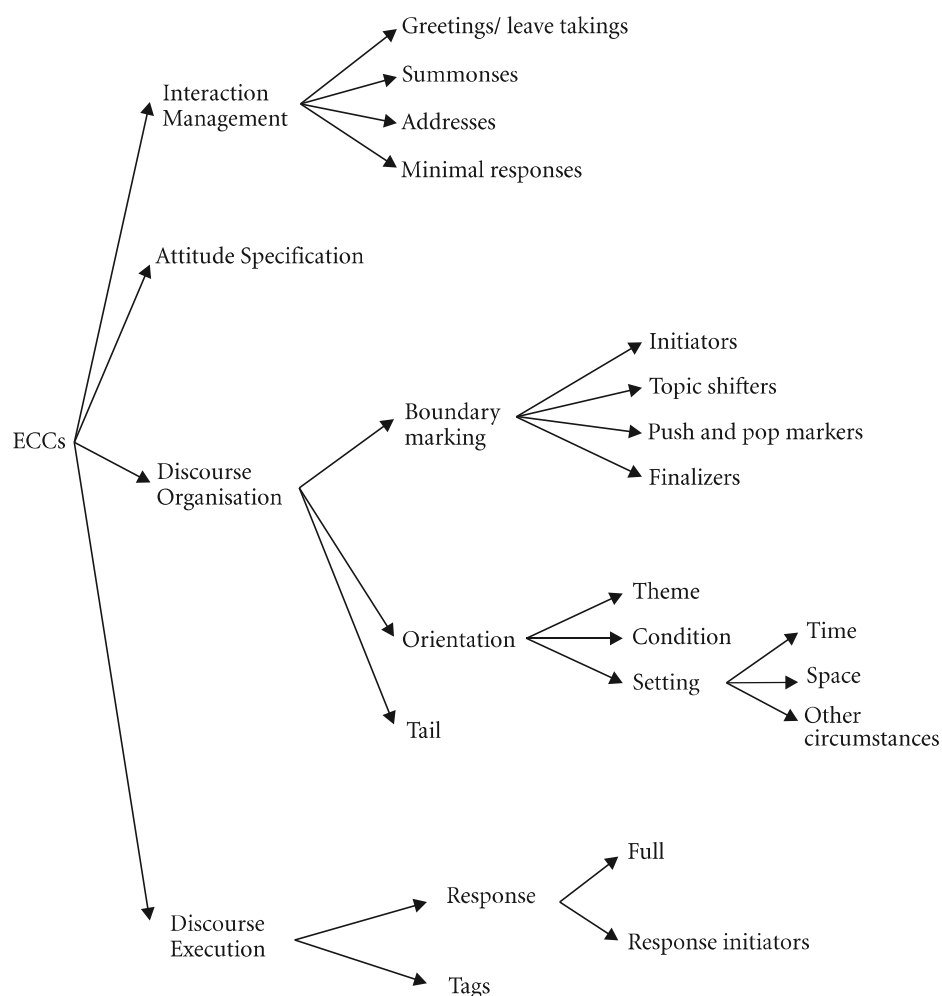


Figure 3.1. Classification of Extraclausal Constituents according to Dik (1997b: Chapter 17)

representing a non-controllable State of Affairs, then we are barred from choosing imperative as an illocutionary force. Secondly, any psychologically adequate model will have to serve for both production and understanding of natural language.

Dik (1997a: 57) makes it clear that the mode of presentation is only **quasi**-productive, in that the order of presentation is not claimed to mirror the actual sequence of operations which occurs in language production by a speaker. A totally adequate model for actual production would need to contain both a knowledge base and an expression generator, together with an interface between the two. Furthermore, Dik believes that there may be more than one possible sequence of operations for actual generation: a speaker might start with a predicate, or with one or more arguments of the eventual predicate, and fill

in the rest accordingly. There is also the possibility of parallel processing in sentence generation. The relationship between the grammar and online processing is expressed by Dik as follows:

In a sense we could say that the theory defines a complex instrument, and that additional psycholinguistic theories of text production and interpretation are required in order to specify in what different ways natural language users can play on that instrument. (Dik 1997a: 58)

The process of generating the full structure of the clause (see Dik 1997a: 49) has two main parts. First, the underlying clause structure (UCS) is generated. This is an unordered, basically semantic structure, though with some syntactic and pragmatic functional information included. The UCS is then subjected to a set of expression rules, which translate it into the final clause structure, by specifying the form of constituents, their ordering, and the appropriate prosodic patterns (accentuation, intonation).

An important property of the UCS is that it is built up in layers, which are motivated in terms of the different types of phenomena they are concerned with, and in terms of scope relations. The following summary is based on Dik (1997a: 50):

predicate	represents	property/relation
term	represents	entity
nuclear predication	represents	state of affairs
core predication	represents	qualified state of affairs
extended predication	represents	located, qualified state of affairs
proposition	represents	possible fact
clause	represents	speech act

3.2.2 Generating the underlying clause structure

3.2.2.1 *Predicates and predicate frames*

The basic elements of the schema for generating the UCS are described in Chapter 3 of Dik (1997a), on which the following account is based. The process begins with the selection of a **predicate**.⁷ Predicates, which as we saw above designate properties or relations, may be verbal, nominal or adjectival. Basic predicates are those which must be known by a language user in order to be deployed appropriately (e.g. *arrive*, *window*, *large*); derived predicates are those which can be formed from basic predicates by means of productive predicate formation rules (e.g. the Agent Noun Formation rule which derives nouns such as *writer*, *holder* from verbs (*write*, *hold*) (Dik 1997b: 3)). All predicates are lexical items of the language.⁸ Each predicate can be applied to an appropriate number of **terms**, which refer to entities in the mental (rather than physical) world. A typology of entities is pre-

7. For a clear and detailed survey of FG views of the predicate, see Mackenzie (2002).

8. These may include multi-word items such as idiom chunks, etc.

sented by Dik (1997a: 136–147). Terms, like predicates, can be basic or derived. Basic terms can be used only as terms, and need to be known by the speaker if they are to be used correctly. Proper names and personal pronouns are thus basic terms. Most terms, however, are derived through the application of productive term formation rules (see Chapter 7) which may generate fairly simple term structures (e.g. *the boy*) or complex ones (e.g. *the boy over there in the red sweater* or *anyone in the university who thinks functional linguistics is too boring to be worth studying*). Basic predicates and basic terms are listed in the **lexicon**; predicates and terms, both basic and derived, together constitute the **fund**.

Predicates are not listed in the lexicon in total isolation, but as **predicate frames**, which specify the syntactic category, or ‘Type’ (V, N, A) of the predicate, the number of arguments (quantitative valency), their semantic functions (qualitative valency) and any semantic selection restrictions imposed on those arguments in non-metaphorical usage.⁹ Some examples from Dik (1997a) are given below:¹⁰

- (5) *eat* [V] (x_1 : <anim>)_{Ag} (x_2 : <food>)_{Go} (Dik 1997a: 95)
- (6) *give* [V] (x_1 : <anim>)_{Ag} (x_2)_{Go} (x_3 : <anim>)_{Rec} (Dik 1997a: 91)
- (7) *die* [V] (x_1 : <anim>)_{Proc} (Dik 1997a: 101)
- (8) *pretty* [A] (x_1 : <fem>)_Ø (Dik 1997a: 96)

Expressed in ordinary English, (5) tells us that *eat* is a verbal predicate with two arguments, the first of which must be animate, and acts as the Agent, while the second acts as the Goal¹¹ of the action of eating, and must be an item of food. (6) tells us that the verbal predicate *give* has three arguments: an animate Agent, a Goal, and an animate Recipient. (7) gives the information that *die* is a verbal predicate with a single animate argument, with the semantic function Processed. (8) shows that *pretty* is an adjectival predicate, with a single argument which has Zero semantic function and must (in one meaning of the predicate) refer to a female entity.¹²

The specifications in (5)–(8) are in fact simplified forms of representations which include a **predicate variable**, symbolised as ‘f’.¹³ The full representation for (8) is shown in (9):

- (9) (f_i : *pretty*) [A] (x_1 : <fem>)_Ø

9. Dik (1997a: 94–95) claims that certain types of metaphorical interpretation can be accounted for in terms of the relaxation of selection restrictions.

10. Dik (1997a: 86) contemplates the inclusion of other, partially redundant information within the Type specification, for certain purposes. I shall not go further into these matters here.

11. Goal, as used by Dik, is what is referred to as Patient in many other approaches: indeed, in Dutch writings, Dik uses the term *Patiens*.

12. The semantic functions postulated in FG (such as Agent, Goal, Recipient, Processed, Zero) will be discussed in Chapter 8.

13. The concept of the predicate variable was introduced by Dik (1989a: 50), and then developed by Hengeveld (1992a) and Keizer (1992a).

The need for a predicate variable is shown by the possibility of referring anaphorically to the predicate, as in the Spanish example in (10), where the *lo* in bold type refers back to the predicate *moderno*, so that the structure would have the ‘f’ variable for the adjectival predicate *moderno* as the content of the anaphor.

- (10) ... *yo no sé si mi padre es moderno, pero*
 I NEG know-PRES.1SG if my father be-PRES.3SG modern but
*desde luego si no **lo** es, lo siento mucho por él*
 of course if not it be-PRES.3SG it feel-PRES.1SG much for him
 ‘...I don’t know if my father is modern, but of course if he isn’t, I’m very sorry
 about it for him.’ (HCM 19, 356)

Dik (1997a:83) remarks that in most cases, the simplified form of representation, without the ‘f’ variable being shown, is adequate. I shall follow this practice here.

Also accompanying the predicate frame is a set of **meaning postulates** which, taken together, provide a meaning specification for the predicate in terms of entailment relations. For instance, Dik (1997a:97) proposes the following meaning postulate to account for part of the meaning of the word *bachelor*:

- (11) (= Dik’s (44)) $bachelor(x) \rightarrow not (married(x))$

Note that meaning postulates relate one predicate to another, being expressed entirely in terms of predicates existing in the language. Thus this classical version of FG postulates no abstract semantic primitives such as the components of componential analysis. Dik points out that meaning postulates cannot be expected to provide complete meaning definitions in all cases. He gives the example of the word *geranium*, where what differentiates a geranium from other plants is something which the average user of the word would probably be unable to explain technically. Dik (1997a:98) suggests that in such cases we may operate with a mental image which may allow us to differentiate between that particular type of object and other types. In cases where complete definitions can be provided, they take the form of bilateral entailment (equivalence):

- (12) (= Dik’s (45)) $bachelor(x) \leftrightarrow unmarried\ man(x)$ (Dik 1997a:98)

The predicates involved in the definition are, however, themselves complex, in that both *unmarried* and *man* can be further defined as ‘not having a spouse’ and ‘adult male person’ respectively. Semantic specification in FG follows the principle of **stepwise lexical decomposition**, discussed extensively in Dik (1978b), according to which each predicate is defined in terms of the ‘highest’ available predicate of the language. Dik (1997a:100) illustrates this principle with definitions for the predicates *assassinate*, *murder*, *kill* and *die*:

- (13) (= Dik’s (54))
- | | |
|---------------------|----------------------------------|
| <i>assassinate:</i> | murder in a treacherous way |
| <i>murder:</i> | kill a human being intentionally |
| <i>kill:</i> | cause an animate being to die |
| <i>die:</i> | become dead |

3.2.2.2 Building the nuclear predication

Insertion of terms into the argument slot(s) of the predicate frame, in accordance with any selection restrictions, produces a **nuclear predication**. (14) and (16), with analyses in (15) and (17) respectively, show examples with the predicate *give* (note that we are not concerned here with the internal structure of terms, covered in Chapter 7, nor with tense, which is discussed briefly in §3.2.2.4 and in much more detail in Chapter 9):

(14) *So they gave him milk ...* (BNC CJT 55)

(15) *give* [V] (*they*)_{Ag} (*milk*)_{Go} (*he*)_{Rec}¹⁴

(16) *Richard Gere gives money to Tibetan refugees ...* (BNC HSJ 800)

(17) *give* [V] (*Richard Gere*)_{Ag} (*money*)_{Go} (*Tibetan refugees*)_{Rec}

As dictated by the predicate frame given in (6), a term referring to an animate entity has been substituted for the x_1 variable (*they*, *Richard Gere*) to act as Agent, a term has also been inserted into the x_2 slot (*milk*, *money*) to act as Goal, and finally a term representing an animate entity has been substituted for the x_3 variable (*he*, *Tibetan refugees*) to act as Recipient. Note that there is no specification of the order in the final clause of the noun phrases acting as arguments, nor is there any indication that if the Recipient NP comes after the Goal NP, it must be marked by a preposition (in this case, *to*): these are matters for the expression rules, not for the UCS.

The nuclear predication designates a **State of Affairs (SoA)**, that is, “the conception of something which can be the case in some world” (Dik 1997a: 105). Note that SoAs are not real-world but mental entities, as also are the entities designated by predicates and terms. The classification of SoAs will be discussed in Chapter 8.

3.2.2.3 Operators and satellites: from nuclear to core predication (Level¹⁵ 1)

The nuclear predication has no specification of properties like tense and aspect. The next stage is to specify the predication further by means of **predicate operators** (Dik 1997a: 219–225) and **predicate satellites** (Dik 1997a: 225–232). Operators are used for those phenomena which get expressed **grammatically**, while satellites are used where the expression is **lexical**. Predicate operators further define the internal structure of the SoA, and include, for example, phasal aspect distinctions such as progressive in English, as exemplified in (18) below:¹⁶

(18) *What **are** you **doing**?* (BNC GUK 630)

Satellites differ from arguments (although the borderline is fuzzy) in that they are always optional, and are thus not required by the semantics of the predicate. Examples of satellites

14. The personal pronouns in this clause would actually be given a more abstract representation in a full FG structure: see §7.2.1.4 for details.

15. Although Dik writes of layers in the structure of the clause, he uses the term ‘level’ when referring to the stages in the build-up of the clause. But see also §3.3.

16. For discussion of aspect in FG, see Chapter 9.

which can get added at this stage, because they modify the State of Affairs itself, are those which specify Manner, Speed or Instrument. The relevant satellites are highlighted in the examples given below:

- (19) *I wandered **aimlessly** around the National Gallery just for something to do and then went home.* (BNC A0F 911)
- (20) *The answer **quickly** became apparent: ...* (BNC A15 1383)
- (21) *When dry, remove grease by wiping **with a fluff-free cloth dipped in methylated spirit**.* (BNC C8A 1214)

L1 satellites also include those of Direction ('place to/towards which'), Source ('place from which') and Path ('place through which'), as well as optional participants in the SoA, such as Beneficiary ('person/institution for whose benefit something is done') and Company ('entity together with whom/which'). Finally, Dik also locates at L1 those modality distinctions which reflect inherent characteristics of a participant such as willingness or ability. The result of adding operators and/or satellites at the predicate level (Level 1 in the hierarchy) is a **core predication**.

3.2.2.4 *From core to extended predication (Level 2)*

The core predication is now supplied with a variable, symbolised as **e**, representing the SoA whose nature is specified by that predication. This variable is needed for a number of reasons (Dik 1997a:232–236). Firstly, we need to be able to disambiguate sentences such as (22), where both *the drawing of it* and *his drawing* could theoretically refer to an entity (the product of drawing, symbolised by **x** in the FG representation) or to a State of Affairs (the act of drawing, symbolised by **e**), though the context disposes us, in this particular example, to treat the former expression as referring to a State of Affairs and the latter as referring to an entity:

- (22) *A child will learn far more about a dandelion if he has to draw it because to draw it he must observe it very carefully and **the drawing of it** will implant the shape and colour and texture firmly in his mind, even though **his drawing** may not be very good or life-like.* (BNC EVH 822)

Secondly, nominals which on the surface appear to represent entities may in fact be used to represent States of Affairs, as in (23):

- (23) *The following year, Jasper Johns began his series of American flags and targets: ...* (BNC A7M 184)

Here, *his series of American flags and targets* represents the activity of the painter Jasper Johns in painting pictures representing flags and targets, and so encodes a SoA, requiring the **e** variable.

Another argument for the SoA variable is that we may need to refer anaphorically to an SoA:

- (24) *And he's crafty; you can see **it** in his face.* (BNC CFY 456)

Here, if, as seems reasonable, *see* is interpreted in its visual sense, then *it* refers to the SoA encoded as *he's crafty*.

The core predication is expanded into an **extended predication** by means of **predication operators** and further **satellites**, operating at Level 2 (Dik 1997a: 232–245). The difference between the operators and satellites at L1 and L2 is that the L1 add further details to the SoA itself, whereas the L2 leave the SoA intact, but situate it with respect to time, space and cognitive co-ordinates. So tense operators such as Past work at L2, as do temporal satellites:

- (25) *Individual colleges then **presented** their proposals to SCOTVEC **at the end of February** ...* (BNC HBN 991)

Satellites encoding spatial Location, Circumstance (concurrence of two SoAs), Result, Purpose, Reason and Cause are also located at L2. Some examples follow:

- (26) ***In London** an increasing amount of space is being mothballed ...* (BNC AHJ 593) (Location)
- (27) *... this gradually fed through into more academic forms of research, virtually fed through into popular consciousness **so that erm you end up with, particularly in the late eighties early nineties, erm a great deal of interest in the media, a great deal of interest among professionals in [s] child sex abuse and child abuse generally.*** (BNC KGW 22) (Result)
- (28) *Tom wouldn't wear rain gear **because he couldn't find a set to really fit his 6ft 3in frame**, ...* (BNC ASA 1138) (Reason)

Also at L2 are quantificational aspect operators which deal primarily with frequency (e.g. whether the SoA occurs once, several times, many times, etc.), and perspectival aspect operators, concerned with whether an SoA is presented prospectively (e.g. as signalled by *going to* in English) or retrospectively (e.g. Perfect Aspect in English, signalled by *have* + past participle).

Dik also locates at Level 2 those 'objective' modalities which express speakers' assessments of the likelihood of occurrence of the SoA, in terms of their knowledge of SoAs in general (epistemic modality) or of a prevailing system of norms (deontic modality). Polarity distinctions are seen as the logical extremes of epistemic objective modality.¹⁷

It is important to note that operators at Level 2 have scope over those at Level 1: indeed, more generally, we can say that an operator at any given level has scope over those at lower levels (see Dik 1997a: 381, based on the proposals in Hengeveld (1989)).

3.2.2.5 Perspectivising the SoA: Subject and Object assignment

In FG, the assignment of the syntactic functions Subject and Object is seen in terms of alternative perspectives or 'vantage points' on the SoA (Dik 1997a: Chapter 10). Consider again Example (16), repeated for convenience as (29) below:

17. Modality and polarity distinctions in FG will be discussed in more detail in Chapter 9.

- (29) *Richard Gere gives money to Tibetan refugees.* (BNC HSJ 800)
S O

To this active structure correspond the two passives in (30) and (31):

- (30) *Money is given by Richard Gere to Tibetan refugees.*
S
(31) *Tibetan refugees are given money by Richard Gere.*
S

In (29), the assignment of Subject function to the Agent *Richard Gere* means that the SoA ‘give (*Richard Gere*_{Ag}, *money*_{Go}, *Tibetan refugees*_{Rec})’ is presented from the standpoint of the Agent, while in (30) the Goal is chosen as the participant from whose standpoint the SoA is presented, and in (31) the Recipient.

Consider now (32):

- (32) *Richard Gere gives Tibetan refugees money.*
S O

Whereas in (29) the Object function is assigned to the Goal *money*, in (32) it is assigned to the Recipient *Tibetan refugees*. This is seen in FG as a secondary perspectivisation of the SoA, once the primary perspective has been fixed in terms of Subject assignment.

It is important to realise that this is not the only kind of perspectivisation which is imposed on the clause: later, we shall see that there is an additional set of **pragmatic functions** which offer further options for perspectivisation, but this time in terms of the overall informational status (topicality, focality) of the referents in relation to the discourse context.

Dik (1997a:252–253) presents a number of reasons why a speaker might want to perspectivise an SoA in a particular way: empathy with a particular entity; the preference of some languages for definiteness in Subjects; the desire to leave an entity unspecified (e.g. omitting *by Richard Gere* in (30) or (31)); restrictions on the formation of relative clauses in some languages, necessitating the reformulation of a clause into a form in which the constituent to be relativised is in Subject position; politeness conventions barring direct address of the Addressee in directives and so leading to preference for passive forms.

Dik (1997a:254–257) demonstrates that the syntactic functions Subject and Object cannot be reduced to (combinations of) semantic or pragmatic functions. The whole point of syntactic function assignment is that Subject or Object function can be applied to different semantic functions – e.g. Subject to the Agent in (29), the Goal in (30) and the Recipient in (31); Object to the Goal in (29) and the Recipient in (32). And although, as we shall see later, there are unmarked correspondences between Subject and particular options within the area of pragmatic function (Topic and/or Focus), independent choice is nevertheless possible; furthermore, S/O assignment has to do with perspectivising the

SoA itself, while Topic/Focus assignment is concerned with matching the information presented in the clause with the discourse context.¹⁸

It should be noted that the FG treatment of Subject and Object differs from the traditional account, and from the approach in many other grammars, in that a given language may have Subject assignment, Subject and Object assignment, or neither. Further, the function Object is not assigned to items such as *to Tibetan refugees* in (29) or (30), which in some traditional accounts would be treated as Indirect Object.¹⁹ The criterion for assignment of Subject is that the language must exhibit at least one active/passive distinction, where

- the passive expresses the same content as the active but in an alternative way;
- the passive contains a non-first argument which shares coding properties with the first argument of the corresponding active (e.g. in English, occurrence in Subject position, absence of a preposition, nominative case if a pronoun, person and number agreement with the finite verb);
- this non-first argument also shares behavioural properties with the first argument of the corresponding active, i.e. where Subjects control such processes as reflexivisation, relativisation, raising, etc.

Similarly, Object assignment is relevant to a language only if that language has at least one active/passive distinction in which the identity of the SoA is preserved, and a non-second argument in the passive shares relevant coding and behavioural properties with the second argument of the active (e.g. in English, position just after the verb – as for *Tibetan refugees* in (32), but not in (29)).

Finally, note that accessibility of various constituents to Subject and Object assignment differs across languages. In some languages, such as Dutch, only the Agent or the Goal can have Subject function; in others, such as English and Japanese, the Recipient may also get Subject function, and in yet others, such as the Philippine language Cebuano, even locative and temporal satellites may be converted into Subjects. Multiple possibilities for Subject assignment (e.g. in Philippine languages) may give rise to voice systems which are much more complex than that of English and other familiar Indo-European languages. Building on earlier work, Dik (1997a: 266, example (41)) postulates a **Semantic Function Hierarchy** which restricts possible language systems in terms of a set of implicational universals. The hypothesis is that if, in a particular language, Subject function can combine with a particular semantic function in the hierarchy in Fig. 3.2, it will also combine with all the semantic functions further left in the hierarchy, and similarly for Object.

This basic hierarchy is modified during later discussion in *TFG1* (Dik 1997a: Chapter 11). Space precludes detailed discussion here: basically, the arguments presented by Dik lead to the following refinements:

18. Of course, choices in the perspectivisation of the SoA itself, by S/O assignment, may themselves also be ultimately related to the discourse context.

19. See, however, Martín Arista (1994), where it is argued that a distinction between Direct and Indirect Objects can be motivated pragmatically and semantically as well as syntactically.

	Ag	>	Go	>	Rec	>	Ben	>	Instr	>	Loc	>	Temp
Subj	+	>	+	>	+	>	+	>	+	>	+	>	+
Obj			+	>	+	>	+	>	+	>	+	>	+

Figure 3.2. The Semantic Function Hierarchy

- Subject assignment to Loc and Temp is reconsidered. As Dik (1997a: 271–272) points out, the quality of the SoA is defined only by arguments and Level 1 satellites, and we would therefore expect that the SFH should affect only these. Loc and Temp, however, are normally Level 2 satellites. Dik (1997a: 272–275) argues that the cross-linguistic evidence for Subject assignment to Temp is very weak, and that assignment to Loc may be confined to ‘inner locatives’ of Source, Path or Direction, which are very close in status to arguments.
- Agent and Goal functions are replaced by the more general ‘first argument’ (A1) and ‘second argument’ (A2) functions and a ‘third argument’ (A3) position is also recognised (see also Dik (1997a: 119–120)).²⁰
- Dik develops a multi-factor approach which recognises that accessibility may be conditioned not only by the hierarchy A1 > A2 > A3 > Level 1 satellites, but also by other factors such as preference for definite over indefinite Subjects, for 1st and 2nd persons over 3rd, for human over other animate and then inanimate entities, for concrete over abstract, for first order over second order, and for terms from the same predication over those from a subordinate predication.

Further discussion of the Semantic Function Hierarchy can be found in *TFG2* (Dik 1997b: 365–376).

3.2.2.6 From predication to proposition (Level 3)

So far, we have seen how an extended predication can be built up by means of the following steps:

- selection of a **predicate**;
- selection of terms to fill the arguments slots of the predicate frame, in accordance with the selection restrictions imposed, so giving a **nuclear predication**;

20. For more detail on these semantic functions see Chapter 8. Mention of ‘first argument’, ‘second argument’, etc. should not, of course, be taken to imply linear ordering of the elements of the predicate frame. As we have seen, the underlying representation of the clause is unordered, matters of ordering being the province of the expression rules, so allowing statements of considerable cross-linguistic validity to be made at the underlying level, language-(group) specific matters of sequence being separately dealt with in the expression component. Ordering in the predicate frame reflects a hierarchy of importance of semantic functions within the predication, Agents being more central than Goals, and these in turn more central than, say, Recipients (Dik 1997a: 80).

- expansion of the nuclear predication into a **core predication** by means of **Level 1 operators and satellites**;
- further expansion into an **extended predication** by means of **Level 2 operators and satellites**.

We have also seen how, once the SoA itself has been completely specified, it can be perspectivised by means of the assignment of Subject and Object syntactic functions.

The next step in the construction of underlying semantic structure of the clause is the conversion of the extended predication into a **propositional structure**, at **Level 3** in the hierarchy. The difference between a predication and a proposition, in Dik's model, is that:

- a **predication** represents a **State of Affairs**, which occurs in time, space, etc. and can be seen, heard, etc.;
- a **proposition** represents a **possible fact**, which can be known, remembered, believed, etc.

Consider the following examples:

(33) *We knew that they were testing them ...* (BNC KCN 1858)

(34) *We saw them testing them ...*

(35) *We saw that they were testing them ...*

In (34), what is seen is the physical situation represented by the SoA, viz. someone testing something; the complement of *saw* here is a predication. However, in the original sentence from which the others are adapted, (33), the complement clause represents a situation which is conceptualised as a fact, and so is at the propositional level. We can now see that (35) is ambiguous: if *saw* represents a visual process, then the complement clause is predicational; if it represents a cognitive process, roughly equivalent to 'realise' or 'understand', then the complement clause is at the propositional level.

Just as there is a variable, *e*, representing the SoA at the predicational level, so there is a variable, *X*, which represents the propositional content. This is necessary because we can refer anaphorically to this content, as in (36):

(36) *They were testing them, and he knew it.*

Here, *it* refers anaphorically to 'what he knew', i.e. the fact that 'they were testing them'.

Just as operators and satellites at Levels 1 and 2 modify the SoA, so operators and satellites at Level 3 modify the proposition, providing details of the speaker's attitude towards the propositional content. Here belong subjective and evidential types of modality, evaluations of the content in terms of its wisdom, expectedness, and so on. These may be expressed grammatically (i.e. by means of operators), lexically (as satellites) or both, according to the language. Some examples from English are given below:

(37) *She was seventeen or eighteen and **certainly** pretty.* (BNC J2G 206)

(38) ***In my opinion**, we have not seen the last of this matter.* (BNC GVP 238)

(39) ***But apparently** it was stolen last week.* (BNC KB8 11152)

3.2.2.7 From proposition to clause (Level 4)

The final level in Dik's account of the underlying structure of the clause is Level 4, at which the proposition is converted into a full clause, representing a speech act. An illocutionary variable, E, is needed in order to account for the ability to refer anaphorically to the speech act, as in (40) below, where *that* in B's comment could be interpreted as relating to the whole of A's speech act:

- (40) A. *That was just plain bloody-minded of you.*
B. *Coming from you, **that's** ridiculous.* (BNC AB9 690)

Dik's analysis of illocution, summarised briefly in *TFG1* (Dik 1997a:300–307) and discussed in much more detail in *TFG2* (Dik 1997b: Chapters 11 and 12), is confined to illocution as encoded in linguistic expressions, leaving to pragmatic interpretation any mismatches between coded illocutionary force and the force intended by the speaker, or understood by the hearer.²¹ Starting from the fact that certain types of illocution are widely coded in the world's languages, Dik proposes four illocutionary operators: Decl(arative), Int(errogative), Imp(erative) and Excl(amative). These basic illocutions, Dik proposes, can undergo a process of 'illocutionary conversion', which may be pragmatic (i.e. purely in terms of intention and interpretation, and so handled by a wider theory of verbal interaction rather than by the grammar itself), lexical (the use of explicit performatives),²² or grammatical (e.g. tag questions on declaratives in English).

Illocutionary (Level 4) satellites allow the speaker to comment lexically on the speech act. Compare (41), with *frankly* as a Level 4 satellite, with (42), where *frankly* is a manner satellite at Level 1, forming part of the SoA itself:

- (41) ***Frankly** it's rather monotonous.* (BNC EEL 723)
(42) *"It's more than possible," Doreen admitted **frankly**.* (BNC HHB 2262)

3.2.2.8 Pragmatic function assignment

Consider the following stretch of dialogue:

- (43) A. *What is a wok?*
B. *A wok is one of those big Chinese frying pans ...* (LLC 2 7 1299–1300)

Theoretically, there are various ways in which B's reply could be delivered, differing in intonation placing and contours, among which are the following, in which underlining is intended to mark the intonational nucleus:

- (44) *a wok is one of those big Chinese frying pans*
(45) *a wok is one of those big Chinese frying pans*

21. FG approaches to illocution will be discussed in detail in Chapter 1 of Part 2.

22. We shall see in Chapter 1 of Part 2 that Dik in fact drops the category of lexical illocutionary conversion in *TFG2*.

- (46) *a wok is one of those big Chinese frying pans*

Note that in the context of the exchange in (43), only (44) is appropriate: (45) is inappropriate because it appears to contrast big Chinese frying pans with smaller ones, rather than to define a wok as a frying pan of some kind; (46) is odd because *wok* is singled out for focus, although this word conveys information which, after A's question, forms part of the negotiated background to the discourse at this point.

Now consider (47) and (48):

- (47) *There came a muffled exclamation and a curse.* (BNC B20 2780)
 (48) *A muffled exclamation and a curse came.*

The original version, (47), is very much more acceptable than the alternative (48). When a new referent (in this case the double referent, a muffled exclamation and a curse) is introduced into the discourse, in English and in many other languages, it typically takes up a late position in the clause, which is salient in processing terms. (47) uses the existential *there* construction as a device for ensuring the late placement of such material; (48), on the other hand, places the expression encoding the new referent in the normal, early Subject position.

What is at issue in these examples is the way in which the information encoded in the clause is presented, in relation to the ongoing discourse context. For a rather different kind of example, we may turn to Hannay's (1993) discussion of sentences from his corpus of English as produced by advanced Dutch learners. One of the examples he presents is given below:

- (49) (= Hannay's 19a) *In unruptured tubal pregnancies, frequently a single MTX course results in a resolution of the ectopic pregnancy.*
 (50) (= Hannay's 19b) *In unruptured tubal pregnancies, a single MTX course frequently results in a resolution of the ectopic pregnancy.*

As Hannay points out, the second (rewritten) version is to preferred over the first (which actually appeared in his learner corpus), and Hannay interprets this in relation to the informational function of satellites in pre-Subject position in such examples, which can be seen as that of providing a setting for interpreting the core of the proposition. In (49), there are two such settings, and this leads to a confusing effect on the reader, while in (50) there is a single setting, the frequency adverbial being placed later in the clause.

In FG, matters concerned with alternative presentations of information in the clause, in relation to the discourse context, are handled by means of a set of **pragmatic functions** assigned right at the end of the process for building underlying clause structure. Distinctions such as those in (44)–(46) are concerned with the allocation of the pragmatic function Focus; (47) and (48) are concerned with the introduction of material bearing the pragmatic function New Topic; and the distinctions in (49) and (50) are handled by Hannay in terms of a pragmatic function which he calls Setting.

Note that these pragmatic functions represent a further perspectivisation of the information in the clause, additional to the perspective on the SoA provided by the assignment of the syntactic functions Subject and Object.²³

Dik's preliminary account of pragmatic functions in *TFG1* (Dik 1997a: Chapter 13) is greatly amplified in *TFG2* (Dik 1997b: Chapters 13 and 14). In addition to clause-internal functions (different types of Topic and Focus), Dik postulates a number of pragmatic functions relating to extracausal constituents (1997b: Chapter 17). FG approaches to pragmatic functions will be discussed in more detail in Chapter 2 of Part 2.

3.2.2.9 An example derivation

For purposes of illustration, I shall now present a skeleton derivation (omitting details of term structure, which will be discussed in Chapter 7) of the underlying structure of the clause in (51), taken from (39) with the omission of the linking conjunction *but*:

(51) *apparently it was stolen last week* (BNC KB8 11152)

The predicate *steal* may be taken to have the predicate frame in (52):

(52) *steal* [V] (x_1 : <anim>)_{Ag} (x_2)_{Go} (x_3 : <anim>)_{So}

Although no Agent or Source is overtly expressed in the clause, there is still an underlying Agent and Source in the semantics. We can insert *it* into the Goal slot, giving the nuclear predication in (53):

(53) *steal* [V] (x_1 : <anim>)_{Ag} (*it*)_{Go} (x_3 : <anim>)_{So}

There are no Level 1 operators or satellites, so we provide the SoA with its *e* variable and proceed to add the Level 2 Past Tense operator and the temporal satellite, showing the nuclear predication by bracketing:²⁴

(54) Past *e*_i: [*steal* [V] (x_1 : <anim>)_{Ag} (*it*)_{Go} (x_3 : <anim>)_{So}] (*last week*)_{Temp}

To generate the correct alignment of semantic and syntactic functions in the passive, we assign Subject function to the Goal constituent:

(55) Past *e*_i: [*steal* [V] (x_1 : <anim>)_{Ag} (*it*)_{GoSubj} (x_3 : <anim>)_{So}] (*last week*)_{Temp}

We can now add the variable, *X*, for the propositional content, and also the Level 3 inferential satellite *apparently*:

(56) X_i : [Past *e*_i: [*steal* [V] (x_1 : <anim>)_{Ag} (*it*)_{GoSubj} (x_3 : <anim>)_{So}] (*last week*)_{Temp}] (*apparently*)_{Inferential}

23. Note, however, that Haberland & Nedergaard Thomsen (1994) and Martín Arista (2001: 125) consider the concept of perspectivisation which underlies the syntactic functions to be motivated by information structural considerations.

24. Many representations in this book, as in Dik's work, will be simplified by omission of detailed bracketing where this is unlikely to lead to misinterpretation.

The speech act variable E is added, and also the Decl illocutionary operator at Level 4:

- (57) $E_i: [\text{Decl } [X_i: [\text{Past } e_i: [\text{steal } [V] (x_1: \langle \text{anim} \rangle)_{\text{Ag}} (it)_{\text{GoSubj}} (x_3: \langle \text{anim} \rangle)_{\text{So}}] \\ (\text{last week})_{\text{Temp}}] (\text{apparently})_{\text{Inferential}}]]]$

Finally, we can add the pragmatic functions Topic and Focus. We shall assume that the pronominal Goal it is likely to be Topic (in fact, the subtype of Topic labelled Given Topic, since it carries already negotiated information). We shall also assume that the clause arises in discourse as a reply to a question about when the item was stolen, so that *last week* is Focus, in fact the type which Dik calls Completive Focus.

- (58) $E_i: [\text{Decl } [X_i: [\text{Past } e_i: [\text{steal } [V] (x_1: \langle \text{anim} \rangle)_{\text{Ag}} (it)_{\text{GoSubjGivTop}} (x_3: \langle \text{anim} \rangle)_{\text{So}}] \\ (\text{last week})_{\text{TempFoc}}] (\text{apparently})_{\text{Inferential}}]]]$

The underlying structure in (58) would then form the input to the expression rule component, to which I now turn.

3.2.3 Expression rules

As we have seen, FG is presented, in *TFGI*, in a quasi-productive mode, in which the underlying structure of the clause is input to a set of expression rules, which “determine the form, the order, and the intonation contour of the constituents, given their structural and functional status within the underlying structure of the clause” (Dik 1997a:339). Dik also observes that in a complete model of the Natural Language User, these rules should be able to work also in the reverse direction, working out the underlying structure from a given linguistic expression. Such two-way expression rules have been specified in the computational implementation of FG known as ProfGlot (see Dik 1992).²⁵ An important feature of FG is that no rule is allowed to change some ‘basic’ structure into a ‘derived’ structure,²⁶ or to delete already generated material, as is the case in Chomskyan grammars.

There are interactions between expression rules determining the form of constituents, the order of these constituents, and prosodic contours. In some cases, form may be independent of order, but in others certain aspects of form may be dependent on ordering, or *vice versa*, so that two types of expression rule may need to be interleaved.

A fundamental distinction is made in FG between forms which a native speaker of the language must learn in order to use them correctly, and those which can be predicted by a productive rule. For instance, the past tense of a regular verb in English is entirely predictable from the infinitive, but verbs such as *begin*, *know*, *bring* have past tense and past participle forms which are not predictable by any fully productive rule, even though there may be a small set of verbs which share a set of patterns. Forms which cannot be

25. For discussion of ProfGlot, see Chapter 5 of Part 2.

26. There is, as Dik (1997a:21) notes, one area of FG in which transformations of a kind are indeed postulated: that of predicate formation, which derives predicate frames from other such frames. Dik notes that this is confined to the Fund.

predicted by productive rules are listed in the lexical entry for a predicate, as in the entry shown in (60) for the predicate in (59):

(59) *swim* [V] (x_1 : <anim>)_{Ag}

(60) *paradigm*(*swim*, [Past=*swam*, PaP=*swum*])

In order to prevent regular rules from applying to such cases, the principle of **lexical priority** states that when a rule is encountered in which some modification to an item occurs (e.g. formation of the past tense form), the lexicon must first be checked to see if the relevant form of the item is stated there. If so, that form is used; if not, the regular rule is applied. This will prevent the incorrect formation of words such as **swimmed* as the past tense of *swim*, since the past tense expression rule will check and find that the form *swam* is already stated in the lexical entry, as shown above.

The general form of form-determining expression rules is as in (61):

(61) *Operator*[*Operandum*] = *Value*
if *Condition(s)*

As an example, Dik gives the rule for the formation of regular noun plurals in English:

(62) (= Dik's (22), 1997a: 351)

- a. *pl* [*pred*[N]] = *pred*-/iz/
if last phoneme of *pred* is sibilant.
Otherwise,
- b. *pl* [*pred*[N]] = *pred*-/s/
if last phoneme of *pred* is voiceless.
Otherwise,
- c. *pl* [*pred*[N]] = *pred*-/z/

This set of rules correctly predicts that the plural of *kiss* is /kɪsɪz/, that of *cake* is /keɪks/, and that of *nib* is /nɪbz/.

The operators which play a part in expression rules of this type are clearly different from those involved in determining the underlying structure of the clause: the morpho-syntactic operators involved in expression rules are known as μ -operators; those which specify underlying properties at the predicate, predication, proposition and clause level as π -operators; while operators involved in term structure (see Chapter 7) are Ω -operators. The full set of μ -operators includes the other two types.

Form-determining expression rules may effect various kinds of change in their operands (Dik 1997a: 352–353), including: full or partial reduplication of material; mutation of one or more segments, the introduction of an auxiliary form (such as an auxiliary verb or inflectible adposition²⁷) which is further processed by later expression rules; the introduction of a terminal form, which is not further processed by later rules, and may

27. The term 'adposition' covers prepositions and postpositions.

be an affix, particle or non-inflectible adposition; and the introduction of an auxiliary μ -operator, which will act as an operator in some later rule.

Dik (1997a:353) thus distinguishes between two types of μ -operators: primary μ -operators (those involved in underlying clause structure, including π - and Ω -operators, and also semantic, syntactic and pragmatic functions), which make a direct contribution to the meaning of the clause; and auxiliary μ -operators which, as we have just seen, are introduced by one expression rule in order to trigger later ones, and which themselves have no unitary semantic interpretation. Good examples of auxiliary μ -operators can be found in the case systems of many languages. Dik (1997a:354–355) gives examples from Latin; here I shall illustrate from Finnish.²⁸ The adessive case in Finnish is indicated by the ending *-lla/-llä*²⁹ on the noun. This case has a wide range of semantic interpretations, including position in space, certain types of location in time, an activity in which someone is engaged, weather conditions under which something occurs, mental states in which we find ourselves, the means or instrument with which something is accomplished, or to indicate possession. This case is thus very far from having a unified semantic import, and cannot occur in underlying clause structure. Since, however, the allocation of adessive case has a predictable effect on the form of the noun, irrespective of semantic function, economy of generalisation demands that we map the various underlying semantic functions on to the auxiliary μ -operator Adessive, and then allow this operator to determine the form of the noun, rather than linking the varying underlying semantic functions directly to the form.

More than one μ -operator can apply to a given operandum, and the application may be sequential or simultaneous. For instance, in both Finnish and Russian, the form of a noun is determined by number (singular/plural) as well as case, but the application of the relevant operators differs because Finnish is an agglutinative language, with an accumulation of separate morphs for each grammatical property, whereas Russian is an inflecting language, in which more than one grammatical property may be fused into a single realisation. As an example, the Finnish noun *talo* (house) has the form *talolla* in the adessive singular, but *taloilla* in the adessive plural. The plural is thus marked by *-i-* and the adessive case by *-lla*, and in order to generate the correct form for the adessive plural, the operator for plural must apply before that for adessive case. On the other hand, in Russian, the genitive singular of *дом* (house) is *дома* and the genitive plural *домов*, so that the two properties, genitive case and number, are fused into one realisation rather than independently expressed. In this case, the case and number operators apply simultaneously to produce the correct output.

Space precludes the further discussion of form-determining expression rules here: interested readers should consult *TFG1* (Dik 1997a: Chapter 15), in which Dik discusses how expression rules affect the forms of predicates, terms and the clause as a whole.

28. See Whitney (1956:89).

29. The alternative forms arise because of the phenomenon of vowel harmony in Finnish.

I turn now to a brief consideration of expression rules involved in the ordering of constituents in the clause, presented and argued for in much greater detail in Chapters 16 and 17 of *TFGI*.³⁰ This type of expression rule specifies the placement of constituents, but the ban on transformation-like changes in FG means that they are not allowed to specify movement of a constituent from a previously determined position. So, for example, the ordering differences between declaratives and polar interrogatives in English are captured, not by generating a ‘basic’ declarative word order and then moving a constituent to arrive at the interrogative order, but rather by alternative placements dictated by differences in the underlying semantic structure of the clause. It follows that constituent order is seen not as a ‘deep’ property of languages, but as one of a number of devices for the expression of underlying relationships. No single basic word order for a given language need be postulated, and no ‘deep’ division is made between languages with relatively fixed and relatively free word order patterns. Finally, no language has absolutely free word order, since there are always some permutations of orderings which do not occur, and those which do occur normally signal communicative differences of some kind.

Dik proposes a multifunctional theory of constituent ordering, in which ordering is the product of a number of interacting principles, each of which can be functionally motivated, and which may reinforce each other or be in competition. Competing principles may lead to tensions in the constituent ordering system of a particular synchronic state of a language, and changes in the priority accorded to particular principles during the evolution of a language may lead to important changes in constituent ordering. Below are summarised the main general principles put forward by Dik (1997a: 399–404).

- **The Principle of Iconic Ordering** applies whenever constituent ordering reflects semantic content. For instance, if a main clause in English is ordered before a temporal clause with *before*, then the ordering reflects iconically the sequence of events, while the reverse ordering inverts the ‘natural’ sequence.
- **The Principle of Linear Ordering** applies when the linear order of constituents is fixed, wherever they may be in relation to the head of the construction: that is, we find orders such as *xyzH*, *xyHz*, *xHyz*, *Hxyz*.
- **The Principle of Centripetal Orientation** applies when ordering is determined by relative distance from the head, with the possibility of mirror image ordering around the head, so that we may get orders such as *zyxH*, *zyHx*, *yxHz*, *zxHy*, *zHxy*, *yHxz*, *xHyz*, *Hxyz*.
- **The Principle of Domain Integrity** applies when constituents prefer to remain within a particular domain (e.g. the clause as a whole, the term phrase, the adjectival phrase), not interrupted by constituents from other domains.
- **The Principle of Head Proximity** applies when the constituent ordering rules are such as to keep the heads of different domains as close together as possible.
- **The Principle of Functional Stability** applies when constituents with the same functional specification are put in the same position.

30. For a review of Dik’s work on linearisation rules, see Siewierska (1988: Chapter 3).

- **The Principle of Pragmatic Highlighting** applies when constituents with particular pragmatic functions are placed in clause-initial position or in other special positions.
- **The Principle of Cross-domain Harmony** applies when there is consistency, in a language, between a preference for pre-head ('Prefield') or post-head ('Postfield') ordering in different ordering domains.

Dik (1997a:405–416) also argues for a number of more specific principles:

- Languages tend to have either Prefield or Postfield ordering with respect to the heads of various types of construction.
- Subjects tend to precede Objects.
- Relators (such as conjunctions, adpositions or case markers) prefer to be between the two elements they relate, or, if they form a constituent with one of the two elements, then at the periphery of this element.
- Clause-initial (P1) position is used for special purposes, including the placement of Topics and Focus-bearing constituents.
- As Subject is often also Topic, it will also often be in P1.
- There is usually less complexity in the Prefield than in the Postfield, and this will lead to strategies, in Prefield languages, for reducing this complexity.
- Constituents will, *ceteris paribus*, prefer placement in order of increasing complexity. Clitics normally come before pronouns, and these before noun phrases, then adpositional phrases and finally subordinate clauses. This is referred to as the 'Language-Independent Preferred Order of Constituents' (LIPOC).
- π -operators prefer to be expressed in the Postfield in Prefield languages, and in the Prefield in Postfield languages, or in second position in the clause.
- There is a tendency for expression of π -operators to reflect iconically their scope differences, by showing a centripetal kind of organisation: $\pi_4 \pi_3 \pi_2 \pi_1$ [stem] $\pi_1 \pi_2 \pi_3 \pi_4$.
- Term operators prefer to be expressed in the Prefield.
- Relative constructions prefer the Postfield.

Dik (1997a:Chapter 17) also discusses a number of further complications with respect to constituent ordering, which I cannot go into here. Some of these, however, will be discussed in Chapter 2 of Part 2 in relation to pragmatic functions.

Before we leave the constituent ordering rules, it should be noted that Bakker (Bakker & Siewierska 1993, Bakker 1994) has systematised and expanded Dik's list of general and specific ordering principles. He postulates (1994:145) that they can be accounted for by four types of force: iconicity, cross-level consistency, general processing principles and frequency. These four forces are used as the starting points for a hierarchy (see Bakker's Figure 17, 1994:146) in which Dik's principles are located, together with other related principles derived from the typological literature. The elements of the hierarchy are linked by two types of relation: 'is a type of' and 'is explained by': for instance, cross-domain harmony is a type of consistency, while the phenomenon of grammaticalisation is taken to be explained by frequency.

Iconicity gives rise to the principles of centrality, scope, domain integrity, head proximity and the relator principle. Centrality, not itself one of Dik's categories, is "the set of principles that determine closeness to the speaker, physical, temporal, social or cultural" (Bakker 1994: 148), and in turn gives rise to more specific principles of orientation towards speaker or hearer, pragmatic highlighting, syntactic perspectivising (i.e. Subject/Object patterns) and the role of semantic factors such as animacy, humanness, person, definiteness and specificity. The factor of scope gives rise to the principle of centripetality, preferred orderings of components of the noun phrase, and the ordering of π operators. Domain integrity is the source of additional principles concerned with discontinuity, extraposition, raising, and left and right dislocation. The general principle of consistency is the one which underlies cross-domain harmony and the tendency of certain elements to be located in characteristic positions in the clause. In turn, cross-domain harmony underlies the distinction between prefield and postfield languages, type of adposition and affix, the location of arguments in relation to the verb, and that of term modifiers in relation to the head of the term; while the principle of fixed positions gives rise to more specific principles concerned with positions for clitics, expressions of tense/mood/aspect and elements with specific syntactic, semantic or pragmatic functions. Processing constraints are the source of principles relating to the planning of the clause during language production, the reconstruction of underlying clause structures during comprehension, and principles concerning ordering according to structural complexity, including LIPOC, which in turn is taken as the basis of a number of principles to do with the placement of elements in the prefield or postfield. Finally, processing factors are seen as resulting in correspondences of particular ordering patterns with the medium of language expression, and also with the text type for written texts. Bakker's hierarchy of principles has been implemented in a computer program, the Explanatory Network Processor, which is able to test the hypotheses represented, against a database of observations on a number of languages. In a study using about 200 word order variables in a sample of 84 languages, processing was found to be more important than iconicity, and iconicity much more important than centrality, in accounting for word order.

I turn now to expression rules specifying the prosodic contours of expressions (tone in so-called tone languages, accent, and intonation): for further detail, see Dik (1997a: Chapter 18).

Dik (1997a: 452–454) distinguishes between two fundamental types of function for prosody: it may serve to distinguish between segmentally identical words (e.g. in tone languages, or where the position of the main accent distinguishes one word from another, as in English *up'set* vs. *'upset*); or it may serve a characterising function, in that any given predicate may have a characteristic accent position (e.g. on the first syllable in the English word *comfortable*, on the second in *ridiculous*). If there is a fully productive relationship between segmentally identical pairs of words with distinct prosody (e.g. if in a given language all verbs consisting of two syllables X and Y, with the main accent on X, correspond to nouns with accent on Y), then we may postulate a predicate formation rule to capture the regularity. More usually, however, such regularities are not fully productive, and so the characteristic accent position must be included in the lexical entry for the predicate.

Dik (1997a:455–464) goes on to outline very briefly the contribution of prosody to the expression of pragmatic functions (the various kinds of Topic and Focus),³¹ the ‘articulation’ of the clause into segments by means of prosodic subcontours (e.g. between the clauses in a compound or complex clause, or between Subject and Predicate), and the expression of illocutionary operators. He also comments on the elusive nature of certain other effects which may be expressed prosodically, such as politeness, irony, sarcasm, anger or disappointment.

Dik (1997a:464–466) also sets out, even more programmatically, the procedure he envisages for the generation of prosodic contours. Basically, this consists in: the determination of the characteristic accent positions of predicates, from the lexicon itself or from predicate formation or inflectional expression rules; mapping of rises and falls in intonation on to the characteristic accent positions of constituents bearing particular intonationally-expressed pragmatic functions; the placing of internal intonational movements to reflect clausal ‘articulation’; the determination of an overall pitch range, which may be conditioned by conventionalised pragmatic effects or emotional colouring; the mapping of the structure generated up to this stage into the pitch range; and finally the insertion of pitch lines to connect the previously determined intonational movements. Dik himself comments that “it is much easier to formulate some procedure such as the above than to actually implement it in a satisfactory way” (1997a:466).

Finally, I shall sketch informally the expression rules needed to convert the underlying clause structure of example (51) to its final realisation. The underlying structure developed earlier (see (58)) is repeated for convenience below:

- (63) E_i : [Decl [X_i : [Past e_i : [*steal* [V] (x_1 : <anim>)_{Ag} (*it*)_{GoSubjGivTop} (x_3 : <anim>)_{So}] (*last week*)_{TempFoc}] (*apparently*)_{Inferential}]]

As the Subject is not a first argument, the expression component assigns the auxiliary operator Pass(ive) to the predicate *steal*. The rule in (64) is then invoked:

- (64) $\text{Pass}[\text{Pred}[V]] = [\text{be } [V]] \text{ PaP}[\text{Pred}[V]]$

The normal rule for formation of the past participle is:

- (65) $\text{PaP}[\text{Pred}[V]] = \text{pred-ed}$

However, the principle of lexical priority states that we must check in the lexicon to see if the relevant form of the predicate *steal* is listed. It is indeed listed, as *stolen*, so this is chosen and the regular rule does not apply.

In order to effect the proper agreement of Subject and finite verb, the person and number of the Subject (3rd singular) is copied to the predicate. The tense operator would normally trigger the following rule:

31. Keijsper (1990) feels that FG needs a clearer account of the semantic contributions made by prosody (and also by word order) to the expression of pragmatic functions, and Gebruers (1994:138) also wonders “whether FG has not actually missed a chance to make a more substantial contribution in the area of prosody and its relation to grammatical structuring”.

(66) Past[Pred[V]] = pred-ed

But once again the principle of lexical priority prevails, since the past tense of *be* in the 3rd person singular is listed in the lexicon as *was*. We therefore get *was stolen* in the output.

The pronoun *it* is Given Topic and Subject, and this, as we have seen, will normally put it at the beginning of the clause. So far, then, we have *it was stolen*. The principle of increasing complexity in the linear ordering of the clause predicts that the adverbial phrase *last week* will come late in the clause. The attitudinal adverbial *apparently* is more of a problem, since it can occur initially, medially or finally: Dik's presentation does not make it clear how these possibilities would be distinguished. Assuming that some expression rule places it initially, in front of the Subject, we now have the final segmental form of the clause: *apparently it was stolen last week*.

The characteristic accent positions for the lexical items are attached to their entries in the lexicon, so that we get a default accentuation pattern of the following kind:

(67) *ap'parently it was 'stolen 'last 'week*

The placement of an attitudinal adverbial in initial position will trigger a rule giving it a separate intonational subcontour, and the Completive Focus function of *last week* will assign intonational prominence to the head of this constituent. The declarative illocutionary operator will be expressed as falling intonation on this constituent, while the internal nature of the break between *apparently* and the rest of the clause will trigger a 'non-final' type of intonation (a rise or fall-rise) on the initial adverbial.

3.3 Alternative proposals for the layering of underlying clause structure

Although most of the proposals made by Hengeveld (1987, 1988, 1989) were incorporated into Dik's model of the underlying structure of the clause, there is one important suggestion which is strikingly absent from Dik's account of the clause, though as we shall see in §4.2.3.1 of Part 2, it does appear in Dik's programmatic proposals for a functional grammar of discourse. Hengeveld (1989) uses the term **layer** to refer to what Dik has called levels of organisation, and proposes to group these layers into two **levels**: the predicate and predication layers form the **representational** level, while the proposition and clause layers form the **interpersonal** level. The difference between the two levels is explained as follows:

At the representational level a SoA is described in such a way that the addressee is able to understand what real or hypothesized situation is referred to. At the interpersonal level this situation is presented in such a way that the addressee is able to recognize the communicative intention of the speaker. Thus the representational level is concerned with the narrated event, the interpersonal level with the speech event ...
(Hengeveld 1989: 128)

This dual level analysis is seen in the representation of utterances shown in Figure 3.3, taken from Hengeveld (1990a: 3, Figure 1). The higher level in the structure represents the interpersonal level, the lower the representational.

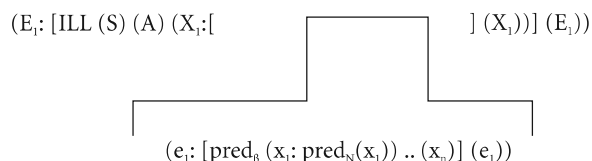


Figure 3.3. The layered representation of utterances

The representation of illocutionary force is in terms of an illocutionary frame, represented by ILL with specifications for Speaker and Addressee, rather than an illocutionary operator, as in Dik's model.³² In Hengeveld (1992b: 34) it is suggested that by analogy with variables assigned to concrete predicates, illocutionary predicates should also be restricted by a variable (F), so that the equivalent of Figure 3.3 would now read $(E_i : [(F_i: ILL (F_i)) (S) (A) \dots$

Hengeveld (1989: 151) also suggests a fifth type of satellite, σ_5 , the function of which is to allow the speaker to indicate how the utterance is situated within the context of the discourse as a whole. One type of σ_5 satellite is exemplified by adverbials such as *firstly*, *secondly*, *finally* which serve to enumerate points in a list.

Further modifications of the layering of underlying clause structure have been suggested in the work of Rijkhoff (1990, 1992, 2002), Vet (1992, 1997, 1998a), Moutaouakil (1996) Cuvalay (1995), Nuyts (1992a, 1993b, 1994, 2001a), Bolkestein (1992), Anstey (2002) and van der Auwera (1990a). In general, the modifications proposed tend in the direction of added complexity in terms of the number and type of layers recognised and/or types of element within layers. I can do no more here than outline the various proposals, especially as some of the issues will come up for discussion in Part 2: further research will no doubt lead to yet more suggestions, and it may be some time before we have available a model which does full justice to the complexity of the issues involved.

Rijkhoff (1990, 1992) presents an account in which parallels are drawn between the structure of predication and that of terms. These parallels lead him to propose three layers within the representational level rather than just two as in Hengeveld's scheme. As in the Hengeveld/Dik proposals, the layer closest to the predicate is concerned with qualitative properties of the SoA, such as certain aspectual features (Imperfective/Perfective, Ingressive, Egressive). There is also a layer at which the SoA is localised in time (by tense) and space, again in accordance with the former proposals. Between the two, however, Rijkhoff sites a separate layer concerned with Quantificational Aspect (Iterative, etc.), which Dik puts in the same layer as tense. Recently, Rijkhoff (2002) has modified and extended his model of the noun phrase and, in parallel, that of the clause. As these modifications arise from work on the noun phrase, they will be considered in Chapter 7.

Vet (1992), while retaining the four-layer hierarchy, also proposes additional quantifying elements at all but the lowest layer. He applies this proposal to the analysis of tense

32. Dik's reasons for rejecting the concept of an illocutionary frame will be discussed in Chapter 1 of Part 2.

and aspect (Vet 1992) and modality (Vet 1997) in French.³³ These are essentially operators, but are intended to modify the effects of the basic π -operators. For instance, while the π -operator at the outermost layer specifies the basic illocutionary force of the utterance, the corresponding quantifying element deals with mitigation of that force (e.g. softening of an imperative force).

The work of Bolkestein (1992) on direct and indirect speech complements of verbs of saying also presents challenges to the layering proposals of Hengeveld and Dik. Bolkestein (1992:398–404) suggests that in English some extraclausal constituents (e.g. Themes in Dik's classification), style disjuncts (e.g. *frankly*) which are purportedly σ_4 , and even satellites giving the status of the utterance in the discourse (σ_5), can be included in indirect reported speech. This is clearly problematic for the view of such clauses as propositional entities (Hengeveld 1989:147, Dik 1989a:251), capable of including operators and satellites at the propositional layer or lower in the hierarchy, that is only up to σ_3 .

In later work, Dik has presented a somewhat confusing account of indirect speech complements. In the second edition of *TFG1* (Dik 1997a:295) we have exactly the same situation as in the first edition, namely that the complement clause in *John didn't believe what Peter said* is regarded as having an underlying structure in which what was said by Peter is a propositional entity. In *TFG2*, however (Dik 1997b:102), it is claimed that both direct and indirect speech are to be analysed as full clauses, the difference being that in direct speech the clause is an immediate complement to the matrix verb, whereas in indirect speech it is embedded in a clausal term functioning as complement to the matrix verb. However, no justification for the proposed difference is offered. If we accept Dik's later proposal, clearly the phenomena described by Bolkestein become less problematic.

However, Bolkestein (1992:398–404) also makes the point that there are some elements (e.g. exclamations, certain biclausal constructions which seem to have a single illocutionary force, some discourse particles in Dutch and Latin, and extraclausal constituents such as Themes) which can appear in direct speech but not in indirect speech complements. This, clearly, is problematic for Dik's later proposals. Dik (1997b:103–105) offers a partial response to Bolkestein's claims. He first warns against generalising too readily across languages or varieties of the same language. He then offers evidence that discourse particles and Themes in Dutch do indeed occur in indirect speech in spontaneous conversation. He recognises, however, that extraclausal constituents are harder to subordinate than intraclausal elements, and that elements involved in direct address (vocatives, certain politeness markers) are difficult to subordinate. His view is that even if there are differences in direct and indirect speech complements, this need not be taken as evidence against the claim that both are embedded speech acts.

Bolkestein (1992:401–403) also points out that there are elements (such as the Latin implication-checking discourse marker *an*) which are difficult to locate at a particular layer, as they do not conform to the criteria for illocutionary conversion operators, illocution satellites or propositional satellites.

33. Vet's work on tense, aspect and modality is discussed further in Chapter 9.

Moutaouakil (1996) argues that sentence type and basic illocution, which are equated in Dik's model, have different properties and so should be distinguished. He offers two possibilities for incorporating this distinction into the underlying structure of the clause: the illocutionary operator can be split into two sub-operators, one for sentence type and the other for illocution; or a fifth layer of organisation can be postulated, at which the sentence type operator applies. Though appearing to favour the first solution as less disruptive to the model as a whole, Moutaouakil does not rule out the second. In addition, Moutaouakil argues that only declarative clauses contain a propositional layer,³⁴ and that there are also types of expression which do not have a predication layer.

Cuvalay (1995) takes over many of the foregoing suggestions and builds them into a comprehensive model of underlying structure with six levels, corresponding to the predicate, core predication, extended predication, proposition, clause and expression. The term 'expression' here refers to a linguistic unit with a single illocutionary force, and includes any extraclausal constituents which do not interfere with the illocution. The term 'clause' is then reserved for the expression minus the extraclausal constituents.

Vet (1998a) has recently offered more far-reaching modifications of underlying structure. He argues that the Hengeveld/Dik proposals fail to account satisfactorily for reports of direct speech. Since direct speech consists of one or more clauses, as defined within the Hengeveld/Dik schemes, and since clauses refer to speech acts, it follows that direct speech should refer to one or more speech acts. However, in constructions involving direct speech, the speech act as such is referred to not by the direct speech itself but by the matrix clause (*X said/asked*, etc.). This leads Vet to propose that both the reports of speech acts and independent clauses should be regarded as utterances, i.e. as the products of speech acts. He also argues that the utterance itself should be separated from the pragmatic, communicative factors which result in the speaker producing the speech act. Vet therefore proposes two separate but interacting modules, one pragmatic and one grammatical. The pragmatic module contains the representation of the speech act itself and the type of speech act (e.g. REQUEST), together with variables for the speaker, addressee and message to be conveyed. The grammatical module specifies the illocutionary operator, which characterises an utterance content rather than a speech act. There is also an interface consisting of the speaker's unconscious or conscious decisions about how to link communicative intention to form.³⁵

The work of Nuyts (1992a:196–197, 1993b:956–965, 1994:174–181, 2001a:§6.5, §6.6) also presents some radical challenges. Nuyts has a number of objections to Hengeveld's stacked system of interpersonal and representational levels. Firstly, he claims that since the interpersonal level is seen as concerned with the utterance as speech event, it is essentially concerned with a 'role function', i.e. the role of the utterance in commu-

34. In Chapter 1 of Part 2, we shall see that Dik and Hengeveld postulate that imperatives lack the propositional layer, but that no parallel claim is made for interrogative or exclamative clauses.

35. The work of Vet and of Moutaouakil will be reviewed in more detail in Chapter 1 of Part 2, with regard to its relevance for the treatment of illocution in FG.

nication. On the other hand, representing an SoA is an ‘organic function’ of language.³⁶ This leads Nuyts to claim that Hengeveld is “using functional notions from two different and non-conjoinable dimensions to characterize two parts of one single structure” (Nuyts 1992a: 196). Related to this is the view that at the conceptual level, at least, the speech act has a rather different status from various qualifications of SoAs, in that illocution is concerned with the speaker’s intentions towards the hearer, whereas qualifications of the SoA are concerned with assessing the position of that SoA. Nuyts’ second objection is to the distinction drawn by Hengeveld between a speech event and a narrated event, or between a SoA and a potential fact, which is part of the basis for the interpersonal/representational split. His own view (Nuyts 1992a: 197, 1994: 175, 2001a: 349) is that a potential fact is itself a SoA, and *vice versa*, and that the representation of a potential fact is the same as the designation of a SoA, so that one does not need two levels here. Nuyts also demonstrates, in his work on modality (see especially Nuyts 1994, 2001a), that the layering system proposed in mainstream FG is too coarse to do justice to the linguistic facts in this area, a more gradual type of layering being needed. Goossens (1996) reaches the same conclusion on the basis of his study of the English modals. Detailed discussion of this area must wait until Chapter 9.

The recent work of Anstey (2002) also offers radical revisions of the layering model. Anstey sees two important problems with regard to layering. Firstly, there is a positional problem, in that different FG scholars distribute operators and satellites differently in the layered structure (e.g. what for Dik (1997a) are level 4 satellites in the normal satellite position are restrictors to an ILL predicate in Hengeveld’s (1990a) scheme); furthermore, some operators (e.g. the progressive) are located within different layers in different accounts. Secondly, we have what Anstey dubs the typological problem, which is that the theory does not show explicitly the conceptual similarity between operators and satellites in a particular semantic area (e.g. location in time); Anstey further observes that there are modes of expression which are neither wholly grammatical nor fully lexical, and which therefore fall between the categories of operator and satellite. Anstey argues that the positional problem is symptomatic of a fundamental flaw in the design of the FG layered structure, namely the combining of semantic and syntactic aspects of patterning.

Anstey illustrates the positional problem by presenting a useful tabular summary (Table 1, p. 3) of operator and satellite positions in eight FG publications. Although there are, of course, some obvious areas of agreement, there are also many disagreements. Anstey goes on to demonstrate the clear linkage, in Hengeveld’s (1989) original layering proposals, between semantics and syntax, claiming that “operators for Hengeveld are a minimal grammatical unit in a language representing a unitary semantic concept” (p. 5). He points out that this makes it difficult to explain syntactic phenomena which cannot be reduced to semantic effects, or to demonstrate the priority of semantics over syntax: indeed, too strict a linkage between levels can seriously undermine the claim for semantic priority, since there may well be a tendency to base semantic description on morphosyntactic realisations for a language. As a clear exception to this tendency, Anstey mentions Cuvalay-

36. For the concepts of role function and organic function, see §1.2.

Haak's (1996) dissertation on the Arabic verb, in which she describes the wide range of tense/mood/aspect distinctions which can be realised by just two basic verb forms.

In order to separate semantics and syntax more clearly, Anstey proposes to define operators and satellites (collectively labelled ' λ specifiers') in terms of the semantic domain they relate to, rather than the layer they modify or any grammatical category they correlate with. These semantic domains, however, do relate to the FG entity typology in that they are characterised by features of prototypical examples of this typology. For instance properties, corresponding to the λ_0 domain, are characterised by telicity, dynamicity, duration, degree, phasal aspect, directionality, etc. and objects/substances (λ_1) by shape, size, object quantification, etc., while events (λ_2) are characterised by time, objective modality, event quantification, (im)perfectivity, etc. The application, or scope, of such features is to denotations of the appropriate entity: λ_0 features are applied to properties, λ_1 to objects/substances, λ_2 to events, λ_3 to propositions and λ_4 to messages. Thus operators and satellites no longer have a particular semantico/syntactic element of clause structure as their scope, but rather a particular signification. This, according to Anstey, has two important consequences: firstly, there is, strictly speaking, no layered clause structure as such; secondly, because operators and satellites are defined purely according to the semantic domain (λ_n) to which they apply, they can appear only in one particular position in the semantic structure, so solving the positional problem. Anstey (Table 6, p. 9) reanalyses the various operators postulated in FG, according to his purely semantic criteria.

Anstey goes on to elaborate a layered semantic structure (LSS) by means of a bottom-up procedure, relying on Searle's (1998) idea that the construction of social reality works by means of the iterative application of a constitutive rule of the form 'X counts as Y in context C'. Anstey combines this rule with a general schema for denotation (in a rather wide sense of this term), consisting of a specification (λ_n) which has scope over the signification of an entity τ_n , with a particular content consisting of "the full inventory of meaning-contributing entities for that level: lexical, grammatical, and relational (such as X is an Agent in relationship to Y)" (p. 9). In other words, simpler denotations can count as more complex denotations in certain linguistic contexts. As an example, consider how individual words can contribute to the content of an event (p. 11). A zero order denotation consists of the application of a zero-level specifier to a predicate, with a word counting as the content, in the context of an utterance. Similarly, a first order denotation consists of the application of a first-level specifier to an object or substance. We can now say that, prototypically, one or more first order denotations combines with a zero-order denotation, to count as the content of an event, again in the context of an utterance. In a similar way we can build up the structure of propositions and then whole messages. Anstey develops a notation for his schemas and then goes on to discuss a number of extensions to his basic proposals: the structure of denotations involving restrictors of various orders, the distinction between arguments and satellites, the designation of non-first order entities, non-verbal predication, and complex structures. He also discusses the effect of varying the orders of designations which can contribute to the content of a predication, postulating a hierarchy of degrees of predicability for the various types.

After very brief comments on the ordering of operators within a layer, Anstey (pp. 20–28) extends his proposals by suggesting that the LSS is itself a reflection, or product, of an underlying layered cognitive structure (LCS), which converts communicative intentions into the LSS of a particular utterance, through the formulation of discourse moves containing speech acts, each of these typically containing a proposition. The LCS manipulates concepts, which are claimed not to constitute a universal metalanguage, but “stand for the sense of the lexical item that will be selected to represent them”, although they differ from words in that “we can not (and should not) assume that the individual’s inner language links up seamlessly with the speech community’s outer language” (p. 22). Provisionally, the layering of the LCS is assumed to mirror that of the LSS: cognition is seen as at the service of the semantics, just as semantics is at the service of syntax. Pragmatics can thus be seen primarily as “the translation from cognitive information to grammatical semantic information” (p. 24).

Anstey proceeds (pp. 24–28) to outline very briefly how he believes the postulation of the LCS can afford a more satisfactory treatment of three types of phenomena (head-marking vs. dependent-marking, semantic and syntactic functions, predicate formation) than has so far been achievable. I shall deal here only with the issue of functions. Anstey suggests that semantic functions should be assigned at the conceptual level, and that during the process of conversion from LCS to LSS the various specific semantic functions are channelled into a small number of generalised functions, along the lines of the macroroles of RRG (see §4.10).

Finally, Anstey (pp. 28–30) discusses briefly the relationship between his proposals and Hengeveld’s Functional Discourse Grammar, outlined in §3.7.1. He sees the LSS of his scheme as corresponding to the representational level of FDG, but goes on to argue that just as there is a cognitive structure underlying the LSS/representational level, so there is a cognitive precursor to the interpersonal level. His final model for the amalgamation of his proposals with FDG thus consists of four components: the grammar contains both a layered interpersonal structure (equivalent to Hengeveld’s interpersonal level) and a layered semantic structure (equivalent to the representational level of FDG), and the cognitive level contains cognitive precursors to both of these, the interface between the cognitive and the grammatical being what is involved in pragmatics. Such a model clearly leaves a number of questions for further investigation, and Anstey lists some of these in his conclusion.

In the course of his article, Anstey makes proposals for the assignment of operators and satellites to particular semantic domains, and I shall mention these at appropriate points in later chapters dealing with specific areas.

Finally, we should note work by van der Auwera (1990a: 19–30), which goes against the general trend, in proposing a model of layering which is rather simpler than the Hengeveld or Dik versions. His arguments are offered in the context of a discussion of the status of predication terms such as the one in bold type in (68) (interpreted as direct perception) and of propositional terms such as that in (69).

(68) *McLeish saw **that she was crying again**, ...* (BNC AB9 137)

- (69) *And everyone knew that now it was time for Madame's famous song.*
(BNC AR2 602)

He suggests that we abandon the *e* and *X* variables, arguing that the terms in (68) and (69) both have the type of structure shown in generalised form in (70), where Ω represents one or more term operators.³⁷

- (70) $(\Omega x_1 : [\pi_2[\pi_1 \text{ Pred } (x_2) \dots (y_1) (y_2) \dots]] (x_1))$

Whether a structure such as that in (70) counts as a predication or a propositional term depends solely on the slot which it fills in the higher structure of which it forms a part.

3.4 Other work on expression rules

Dik's own account of the expression component did not change substantially between the publication of the first edition of *TFG1* in 1989 and the second edition in 1997. There has, however, been work by other scholars in this area.

Connolly (1991) discusses FG expression rules with particular reference to word order, and suggests that since in certain languages the rules for the order of constituents are sensitive to syntactic function assignment, this latter could with advantage be included within the expression component.

Martín Arista (1999), basing his arguments to a large extent on an illuminating comparison of FG with Construction Grammar (see e.g. Goldberg 1995), suggests that the expression component should be constrained by two kinds of motivation, this term being used in the sense of relationships between constructions, or form/meaning pairings. The principle of internal motivation (Martín Arista 1999:211) states that expression phenomena require semantic or pragmatic motivation, the consequence of this being that they must correspond to some element(s) in the underlying structure of the clause. The principle of external motivation (1999:213) states that formal and semantic adjustments of prototypical patterns produce marked constructions. In connection with this principle, Martín Arista proposes to include in the expression component rules which relate unmarked and marked variants of constructions: for instance, extrapositional structures are seen as marked variants of the corresponding non-extraposed constructions, and existential *there* constructions as the marked equivalents of the corresponding plain constructions without *there*.

The most far-reaching revisions of the expression rule component of FG are those proposed by Bakker (Bakker 1994, 1999, 2001), who rightly notes that expression rules have not received the attention which has been paid to underlying structures, and remarks that "no fully worked out example of a complete expression may be found at all, not even of the simplest 'John gives a book to Mary' type" (1999:1). Bakker (1999:1–2, 2001:16) adduces a number of very cogent reasons for the rectification of this situation: FG aims

37. For discussion of term operators, see §7.2.1.3.

to be a complete theory of language, not just a semantic theory, so that it is important to work on all components of the model and the relationships between them; we need to be able to justify our underlying structures by showing that they trigger expression rules correctly; much knowledge about syntax is now available outside functional models, and needs to be taken into account in FG; the three-part division of FG expression rules into generation, linearisation and phonematisation is demonstrably unworkable; and finally, FG expression rules are basically ordering rules, and do not involve the postulation of any kind of syntactic structure as such, a position with which Bakker takes issue. Bakker's own approach attempts to redress the balance in the respects outlined above, and differs markedly from Dik's scheme in that the computation of forms and their linearisation are conflated, and in that a hierarchical syntactic structure is postulated.

In his critique of the current proposals for the expression component, Bakker (1999: 11–19, 2001: 24–30) makes a number of trenchant observations. Firstly, there are very few constraints on expression rules, compared with those on underlying structure: they are not permitted to involve deletion, and must operate on non-null elements which can be identified in the underlying representation of the clause. The rules are thus very powerful, and this would have effects on their acquisition, as well as on the potential for massive overgeneration of forms which are not attested in any language. Secondly, the expression rules also undergenerate, in that there are some structures which are quite frequently found in the world's languages, but which cannot be accounted for in terms of the current model.³⁸

In Bakker's own model (summarised in Bakker 1999: 19–21, 2001: 30–32; Bakker & Siewierska 2002, forthcoming), the concept of templates with functional positions is used, but the templates are hierarchically structured. If, say, a clause is being generated, then the appropriate template will have slots for all the elements that can occur in the clause: main predicate, its arguments, satellites and operators from the various layers of the underlying structure. Material is put into the correct slots in left-to-right order. Elements in slots may select templates for their own structure: for instance, a term might select a term template of category NP. Any auxiliary operators needed are generated as expression proceeds. Grammatical elements are inserted in response to local combinations of μ operators, and the process ends when all such operators have achieved their effect. In this way, a syntacto-morphological tree structure is built up.

The syntacto-morphological constituent structures are thus developed top-down and left-to right, in a depth-first fashion (i.e. if there are two adjacent slots, the left-hand one is developed fully before the right-hand one gets filled out). This mechanism is less costly on short-term memory than a breadth-first approach in which nodes are expanded simultaneously. Any node can, in principle, inherit features located on a path from that node to the top of the tree. Auxiliary operators may also percolate upwards to higher nodes. These characteristics of the model are intended to contribute to its psychological and typological

38. We might also add, as does Cornish (1994: 262), that the principles proposed by Dik in his multifunctional theory of word order are rather vaguely and generally formulated, and that their interaction to give the word orders actually found in particular languages is not systematically demonstrated.

adequacy. Bakker also discusses the nature of nodes in the tree structure and their branching, and the kinds of information which are associated with nodes. For details, the original papers should be consulted.

Before we leave Bakker's work, a further advantage of his model for the expression component should be mentioned. Bakker & Siewierska (2002) observe that the strict distinction in FG between open word class elements, which are in the lexicon, and closed class elements such as auxiliaries, adpositions and articles, which are assumed to arise purely as a result of expression phenomena, is problematic in a number of ways: auxiliaries behave like verbal predicates in many respects; adpositions share properties with nouns and verbs in many languages; and both auxiliaries and adpositions often arise from full open-class categories, over long periods of time, through a gradual process of grammaticalisation. Bakker & Siewierska point out that the new model of the expression component is consonant with the postulation of a more graded conception of lexical and grammatical elements, both in the synchronic description of a language and in its diachronic development. In particular, the vertical position of an element in the hierarchical tree structure correlates with its position on a cline from fully lexical to fully grammatical: fully specified lexical predicates of a language will be present in the underlying semantic structure of the clause before expression rules apply; fully grammatical elements such as past tense or plurality affixes occur right at the bottom of the tree, as components of templates; between the two extremes, we may find intermediate types which are specified for some of the kinds of information present for a full predicate, but not others. It is also postulated, in the interests of greater psychological adequacy, that not only all irregular forms, but also frequently used derived and inflected forms, which have been shown to be very rapidly retrieved during processing, are present in the lexicon, a clear deviation from the position taken by Dik. Bakker & Siewierska illustrate their proposals by means of an account of grammaticalisation processes as applied to adpositions.³⁹

We should also note that the work of van der Auwera (1990a), although not dealing with the nature of expression rules as such, discusses the relationships of both similarity and discrepancy between underlying structure and 'expression structure' (i.e. the formal structure of the expression realising the underlying structure), with specific reference to terms. Proposals for the expression of term structures have also been made by Connolly (1994, 1995) for temporal satellites in English and by Moutaouakil (1994) for Modern Standard Arabic.

3.5 The Functional Lexematic Model

As we have seen, the lexical component is fundamental to Dik's account of FG, in that the generation of the underlying structure of the clause begins with the selection of a predicate, in its predicate frame, from the lexicon. The potential of the lexicon was, however,

39. This work will be discussed again in relation to FG accounts of adpositions in §7.3.1.

never fully developed by Dik himself: in particular, Dik's writings do not exploit the meaning definitions associated with predicate frames, in order to give a principled account of the structure of the lexicon. This aspect of the theory has been developed largely by scholars working in Spain, initially under the leadership of Martín Mingorance, and has given rise to what is now known as the Functional Lexematic Model (FLM).

The development of the FLM is in line with the trend, in the 1990s, towards lexically-based grammars. Its basis is a synthesis of the FG of Dik with the lexematics of Coseriu, developed also by Geckeler (see especially Coseriu 1981). Lexematics, as an elaboration of the structural semantic model, provides what is lacking in Dik's account: a principled way of relating meaning definitions of predicates, in order to map the structure of the lexicon of a language in terms of lexical fields, or 'domains'. In Coseriu's model, the first task in linguistic analysis is a description of the paradigmatic patterning within the lexicon, the primary structures being lexical fields and lexical classes. Fields are structured in terms of lower level 'semes' and higher level 'classemes', while 'dimensions' "lie halfway between minimal groups of lexemes and the lexical field proper" (Martín Mingorance 1990:236). The organisation of the lexicon is thus onomasiological rather than alphabetical, as in an ordinary paper dictionary. Once the paradigmatic structure has been discovered, the syntagmatic potential of each lexeme can be investigated, in terms of semantic and syntactic selection restrictions. Examples of such analyses can be found throughout the work of Martín Mingorance and his research group (see e.g. the collected papers of Martín Mingorance (1998)).

The FLM has been developed further, in recent years, by Faber & Mairal Usón (see especially Faber & Mairal Usón 1994, 1998a, 1998b, 1999; Mairal Usón 1994). They stress that the lexicon should not be conceived as a static entity, but rather as a "dynamic, text-oriented network of information about words and their contexts" (Faber & Mairal Usón 1999:57), serving as the basis for a speaker's mental lexicon, the lexical component of a language model, a component in Natural Language Processing, and a dictionary. In concordance with the ideas of Martín Mingorance, this dictionary is itself seen as a grammar, in that within it, words will be specified with all their syntactic, morphological, semantic and pragmatic properties.

Faber & Mairal Usón show that criteria for membership within a particular lexical field can be derived from the meaning definitions of lexemes themselves, so providing a principled way of structuring the vocabulary in accordance with the tenets of lexematics. Hierarchies are elaborated by extracting meaning components from entries in a range of monolingual dictionaries, so working upwards from individual lexemes to the fields of which they form a part. Lexical dimensions within a field are established by means of the contrasts found in the definitions for lexemes, so that all lexemes within a field are characterised by the same nuclear word, or *definiens*, while the various lexical dimensions isolated allow for differentiation among the lexemes (Faber & Mairal Usón 1999:61). This methodology is, of course, totally consonant with Dik's adoption of the principle of stepwise lexical decomposition.

An example of the type of analysis proposed is given in Figure 3.4, taken from Faber & Mairal Usón (1999:137–138). The overall domain to which this hierarchy belongs is that

- To think carefully about something [COGNITION]
- a. **consider** to think carefully about something in order to make a future decision.
 - contemplate** to consider doing something in the future.
 - meditate** to consider something carefully and seriously as a possible course of action.
 - ponder** to consider something carefully, weighing it in one's mind.
 - debate** to consider the arguments for and against doing something in the future.
 - b. **plan** to think about something (a method/way of doing something) carefully and deliberately in order to carry it out in the future.
 - design** to plan something, making it a picture of it in one's mind.
 - plot** to plan something secretly.
 - conspire** to plot together secretly usually something illegal/harmful.
 - connive** to plot secretly and dishonestly for something to happen.
 - scheme** to plot something secretly in a devious way.
 - intrigue** to plot something secretly to gain something for oneself/somebody else.

Figure 3.4. Example of a lexical hierarchy from Faber & Mairal Usón (1999: 137–138)

of cognition, within which there is a subdomain 'to think about something in order to make a decision in the future'. Within this subdomain there are two superordinate terms, *consider* and *plan*, differing in that the latter is concerned with thinking about the best way to carry out a decision which has already been made. Within the *consider* group, all the other lexemes are defined in terms of *consider*; within the *plan* group, *design* and *plot* are defined in terms of *plan*, and *conspire/connive/scheme/intrigue* are in turn defined in terms of *plot*, so illustrating the principle of stepwise lexical decomposition. Lexemes at the same level are differentiated in terms of various parameters such as the manner of thinking and the nature of what is planned.

Faber & Mairal Usón's work develops in some detail two further aspects of the FLM: the syntagmatic patterning of lexemes, in terms of the form and meaning of complementation patterns; and the relationships between the paradigmatic and syntagmatic behaviour of lexemes, on the one hand, and the cognitive aspects of categorisation in the human mind, on the other. Faber & Mairal Usón demonstrate that the complementation patterns of lexemes are not arbitrary, but on the contrary are strongly motivated semantically (Mairal Usón 1994; Faber & Mairal Usón 1999: 121–140).

The first step in the codification of the syntagmatic axis is an analysis of the semantic potential of the complementation pattern/s of a given verb. This is necessary in order to be able to place the semantics of the complement phrase within the wider context of the lexical subdomain to which the lexeme belongs. With this information, it is then possi-

ble to establish explicit connections between the semantic hierarchies and the syntactic typology of each lexical subdomain (Faber & Mairal Usón 1999:121). In discussing the semantics of complementation and its relationship with syntax, they take into account the obligatoriness of arguments, the form of the complement(s) and tense-aspect-modality distribution.

Faber & Mairal Usón demonstrate that lexemes within a given segment of the lexical hierarchy tend to share some basic complementation patterns, but more general lexemes (i.e. those further up the hierarchical structure) generally show a greater range of complementation patterns than the more specific lexemes (further down the hierarchy). This is the Principle of Lexical Iconicity, and is stated in more general terms as follows:

The greater the semantic coverage of a lexeme, the greater its syntactic variations.
(Faber & Mairal Usón 1994:211, 1998a:8)

As an example, let us consider again the *plan* part of the subdomain of the domain of cognition relevant to thinking about something in order to make a decision in the future. Faber & Mairal Usón (1999:139) point out that whereas the superordinate lexeme *plan* can take zero complementation, a NP, an infinitive clause, a gerund clause, a finite *that*-clause or a prepositional phrase with *for/against*, the more specific members of the group have more restricted complementation patterns: *plot* and *scheme* take only zero, NP, infinitive clause and PP; while *conspire*, *connive* and *intrigue* are even more restricted, in that they cannot take a NP as complement. The lexeme *design*, on the other hand, can take only a NP.⁴⁰

In order to reflect the enrichment of the predicate frame inherent in their proposals, Faber & Mairal Usón set up the category of **predicate schema**, which is applicable to domains, subdomains and individual lexemes. The domain-level predicate schema is defined (after Langacker's (1987:371) definition of the schema) as follows:

... a predicate schema can be defined as a modular, dynamic characterization that subsumes linguistic symbolic units obtained through the activation of lower-level schemas. These schemas are linguistically motivated and reflect our perceptions of reality. (Faber & Mairal Usón 1999:213).

Two points are especially worthy of note here, in addition to the features of Faber & Mairal Usón's model already mentioned. Firstly, schemata are seen as dynamic rather than static, in the sense that they can change, and also set up connections with other schemata. Indeed, the authors outline what they term **semantic macronets** in which connections between schemata are made explicit: for instance, the domain of cognition can be shown to have links with change/perception (through the concept of 'becoming aware' of something), visual perception (in verbs such as *show*), light (*enlighten*, *illuminate*), possession (e.g. *grasp*), and so on. Secondly, as might be expected from the influence of the work

40. Note that since *design* is at the same level in the hierarchy as *plot*, one might, according to the general principle, expect it to have a similar range of complementation patterns, greater than those for *conspire*, etc. Clearly, the principle is just that: a tendency rather than an absolute rule.

Subdomain-level schema 1	Subdomain-level schema 2
Lexeme Schema	Lexeme Schema
Lexeme Schema	Lexeme Schema
Lexeme Schema	Lexeme Schema
Subdomain-level schema 3	Subdomain-level schema 4
Lexeme Schema	Lexeme Schema
Lexeme Schema	Lexeme Schema
Lexeme Schema	Lexeme Schema

Figure 3.5. Macrostructure of a lexical domain

of Langacker, predicate schemata are cognitively oriented structures, reflecting our understanding of reality. Indeed, Faber & Mairal Usón go so far as to claim that “predicate schemata establish a semantic network which can be called a sketch of the map of human thought” (Faber & Mairal Usón 1998a: 11).⁴¹

As can be seen from the quotation given above, subdomain-level schemata are obtained by the bottom-up process of factoring out those elements which are common to the lexemes within a subdomain. Similarly, factorisation of the elements of a group of subdomains gives rise to a domain level predicate schema. This gives the macrostructure for a lexical domain shown in Figure 3.5, from Faber & Mairal Usón (1999:218). Subdomain-level predicate schemata are regarded as the most central to the lexicon, since they often represent metaphorical and metonymic processes, and are the vehicle for mapping conceptual/semantic values from a source domain to a target domain (Faber & Mairal Usón 1998a: 10, 1999:228).

An example of a subdomain-level predicate schema, that for the subdomain ‘to think about something in order to make a future decision’ is shown in (71).

- (71) (= Faber & Mairal Usón’s (284), 1999:250)
 Predicate schema: *consider, meditate, ponder, debate, contemplate*
 $[(x_1: \text{human})_{\text{Ag}} (e_1)_{\text{Go}}] \text{Activity} + \text{Cognition (VISION)}$
 $\text{df} = [\text{think}[V] (x_1: \text{prototyp. human})_{\text{Ag}} (e_1)_{\text{Go}} (\sigma_1: \text{carefully})_{\text{Manner}} (\sigma_2: [\text{make} (x_1) (e_2: \text{decision})_{\text{Go}} (\sigma_4: \text{future})_{\text{Time}}]_{\text{Purpose}}]$

This schema specifies that the verbs in the subdomain have an Agent who is carrying out a cognitive activity, with connections to the field of VISION. The semantics basic to all these verbs includes a prototypically human Agent who is thinking carefully for the purpose of making a decision at some future time.

Further detail of these proposals, with extensive exemplification, can be found in Faber & Mairal Usón (1999). We shall see in §6.2.2.3 that even more recent develop-

41. For further discussion of links between the FLM and the cognitive models of Langacker, Lakoff and others, see Sánchez García (1999).

ments in the FLM are leading the model further away from the mainstream FG position, in particular by questioning the validity of stepwise lexical decomposition.

Before we leave the FLM, a few words should be said about the approach to word formation in this model. A concise account of this area can be found in Mairal Usón (1999:88–96); for more detailed accounts, see Cortés Rodríguez (1994, 1997a, 1997b, 1997c, 1997d), Mairal Usón & Cortés Rodríguez (2000–2001). As Cortés Rodríguez (1997a:169–170, 1997b:82) observes, predicate formation, which is the component responsible for the productive formation of complex lexemes in Dik’s account of FG, imposes an unwarrantedly syntactacist perspective on word formation by assimilating it to other processes of a more regular nature, while also reducing the descriptive power of the grammar by not foregrounding the establishment of morpholexical relationships between different forms. Following a suggestion by Martín Mingorance (1985), the derived lexicon is seen in the FLM as a separate component, running parallel to the grammatical one, and having its own system of production and interpretation rules. This component formalises the concept of word formation as both grammaticalisation of the lexicon and lexicalisation of the analytic syntactic structures of the grammar. The FLM model of word formation invokes two procedures, one analytic, the other synthetic. In the analytic phase, the derivational schemas corresponding to different complex lexical units are drawn up; in the synthetic phase, these schemas for individual complex lexemes are reduced and generalised through rule application.

The word formation component of the model presupposes that the fund contains a lexicon of affixes, treated as lexical units which have their own morphophonological and lexico-semantic structure, their own constraints and combination rules. Also in the fund are the derivational schemas corresponding to each affix, representing the meanings of the classes of words they can be used to derive. From these sets of derivational schemas we can derive further schemas which relate to the various types of derived lexemes which are possible in a language. Finally, by a process of factorisation, we can arrive at a set of cognitive-conceptual schemas which underlie the complex lexical units of the language. The following example (cited in greater detail by Mairal Usón 1999:91–93) is taken from Cortés Rodríguez (1997a:200–203). The Spanish noun *recaudador* means ‘tax collector’, and its meaning definition can be stated as shown in (72) (Cortés Rodríguez 1997a:200, with translation of linguistic terminology from Spanish into English):

- (72) $\text{def} = \text{recaudador}^i_n [\text{HACER } (x^i_1: \text{NP} <+\text{Hum}> (x^i_1))_{\text{Agent}} \\ (x_2: [\text{recaudar}_V (x^i_1: \text{NP} <+\text{Hum}> (x^i_1))_{\text{Agent}} \\ (x_3: \text{“impuestos” } (x_3))_{\text{Goal}}]]_{\text{Action}} (x_2))_{\text{Goal}} (\sigma_1: \text{“repetidamente” } (\sigma_1))_{\text{Manner/Frequency}} \\ (\sigma_2: \text{“como ocupación” } (\sigma_2))_{\text{Manner}}]]_{\text{Action}}$

The essence of this formula is that it defines *recaudador* as referring to a human Agent who carries out the action of collecting (*recaudar*), the Goal of this action being taxes (*impuestos*); furthermore, the action occurs repeatedly (*repetidamente*) and as the occupation (*como ocupación*) of the human Agent under specification. By comparison of vari-

ous structures for derived nominals of this kind, a more general formula may be derived (Cortés Rodríguez 1997a:201), as shown in (73):⁴²

- (73) Φ_n^i [HACER (x_1^i : NP <+Hum> (x_1^i))_{Agent}
 (x_2 : [Φ_V (x_1^i : NP <+Hum> (x_1^i))_{Agent}
 (x_3 : |Concrete| (x_3))_{Goal}]]_{Action} (x_2))_{Goal} (σ_1 : “repetidamente” (σ_1))_{Manner/Frequency}
 (σ_2 : “como ocupación” (σ_2))_{Manner}]]_{Action}

This general formula is the derivational schema which underlies a whole range of words such as *deshollinador* (chimney sweep), *pintor* (painter), *vendimiador* (grape harvester), and so on. Cortés Rodríguez (1997a:201–203) also proposes to add pragmatic functions to the formula, indicating topicality and focality of the material within the definition.

The analytic procedures summarised above are necessarily prior to the synthetic phase, whose object is to take the underlying structures permitted by a language, and to specify the steps which link these structures to the morphosyntactic patterns expressed by complex lexemes. As Cortés Rodríguez (1997a:180) observes, while the analytic perspective allows us to establish the various possibilities for the creation of complex lexical units, the synthetic perspective gives information on the syntactic correlates of such units, establishing a hierarchy of possibilities for the expression of a given schema. Martín Morillas (1984), aspects of whose work are summarised by both Cortés Rodríguez and Mairal Usón, presents a detailed account of how an underlying schema can be expanded and altered, in a series of steps, by insertion of elements which expand a predication or substitute lemmas for variables in the schema. For instance, the meaning structure of the Spanish verb *alfombrar* (meaning ‘to cover something with a carpet’) is derived from a basic causative formula through a series of stages from ‘cause X to have a carpet on top of it’, through to the final fully lexicalised verb.

3.6 Modelling the natural language user in Functional Grammar and Functional Procedural Grammar

As was mentioned briefly in §3.1.1, Dik (see especially 1987, 1988, 1989b, 1989c, 1990a, 1990b) attempts to go beyond the specification of a Functional Grammar, to develop a model of the natural language user:

A more ambitious aim for functional linguistics is to try and develop a model of the natural language user M[NLU] which describes and explains how NLUs go about in [*sic*] communicating with each other through linguistic means. The best M[NLU] is that model which most closely and ‘naturalistically’ approaches the communicative performance of ‘real’ NLUs. The best M[NL] is that model of the grammar of a language which fits in most easily with an adequate M[NLU]. (Dik 1990b:233)

42. The vertical bars around |Concrete| are intended to mean that the restriction to concrete entities is prototypical rather than absolute.

This model of the natural language user reflects the various capacities involved in linguistic communication: the ability to produce and interpret linguistic expressions correctly (**linguistic** capacity); the ability to set up and use a knowledge base (**epistemic** capacity); the ability to infer new information from that already available (**logical** capacity); the ability to derive knowledge from the world around us and to use this knowledge in communication (**perceptual** capacity); and the ability to adapt one's language to the social situation in order to attain communicative goals (**social** capacity) (Dik 1990a:204, 1990b:234). Dik's work concentrates on the first three of these capacities, and builds in a Functional Logic (Dik 1988, 1989b:21–23, 1990b:234–236, 1989c), which is a system for deriving new predications from sets of known predications by means of inferential rules. Functional Logic expressions are interpreted in terms of individual-dependent, dynamic, finite mental representations called **pictures**, which consist of perceptual representations (**images**) and conceptual representations.

Central to Dik's MNLU, as we saw in §3.1.2, are two hypotheses regarding conceptual representations:

- (H1) Underlying linguistic structures, pieces of non-perceptual knowledge, and logical forms can be expressed in one and the same unified cognitive representational language.
- (H2) The representation language used for underlying predications in FG is a good approximation to this cognitive representation language. (Dik 1990b:234)

Dik's reasons for postulating these hypotheses are, briefly, as follows:

- they lead to a much simpler system than one in which there are separate linguistic and conceptual representations;
- even when conceptualisation is discussed in putatively non-linguistic terms, people seem to have difficulty in freeing themselves from linguistic labels for the conceptual categories;
- a non-linguistic view of conceptualisation usually goes hand in hand with the idea that conceptualisations are to some extent universal, but this flies in the face of the large degree of variability between languages;
- connected with the previous point, if conceptualisation is language-dependent rather than universal, this corresponds to the strongly culture-bound nature of language and to the difficulty of translating between one language and another.

These arguments are succinctly summarised by Nuyts (1992a:224) who, however, argues convincingly against them. Nuyts' own model, which is still closely related to FG, is known as Functional Procedural Grammar (henceforth FPG), useful overviews of which are available in Nuyts (1994:159–164) and Nuyts (2001a:272–279), a somewhat fuller picture in Nuyts (1989), and a detailed treatment in Nuyts (1992a).

Nuyts' own proposals arise out of a conviction that a truly functional grammar must take very seriously its commitment to both pragmatic and psychological adequacy. He therefore develops a model which, as its name suggests, is concerned with the procedures involved in the production of utterances by speakers, not just with the linguistic

resources available for the formulation of such utterances. His model is “intended to provide a (rough) working hypothesis concerning the organization of the cognitive systems involved in a language user’s production of discourse” (Nuyts 1994: 159). It thus attempts to build in not only the way in which single utterances are constructed, but also the appropriate situation of these utterances within the discourse of which they are a part, and the ways in which they are adapted to their situation in discourse.

FPG also seeks to model the cognitive systems which act as a link between linguistic structure and a deeper level of conceptual structure which, unlike that in Dik’s model of the Natural Language User, is not assumed to have the same format as that used for the representation of predications. Nuyts (1990, 1992a: 223–236, 2001a: 290ff., forthcoming) presents detailed arguments in favour of his position as against Dik’s. Nuyts (1992a) points out that Dik’s proposal runs counter to the prevailing view in Artificial Intelligence, the psychology of language and semantics. He then summarises Dik’s own defence of his position and goes on to present a number of arguments against this position.

Firstly, Nuyts (1992a: 224–225) cites the fact that operators, realised by grammatical means, and satellites, realised lexically, often express meanings which are very similar, differing only in specificity, as, for example, in the expression of time, where tense conveys only general meanings (e.g. past relative to some orientation point), but further specification can be achieved by means of temporal satellites.⁴³ He suggests that such meanings, though appropriately treated as separate at the level of the predication, should be unified at a conceptual level which is ‘deeper’ than the linguistic level. Similarly, the various possible expression types for epistemic modality in Germanic languages require very different treatment in the grammar, but have an underlying unity at the conceptual level, the differences in expression being motivated by factors such as perspectivisation and information structure (Nuyts forthcoming).⁴⁴

Secondly, Nuyts (1992a: 225–229) mentions the way in which FG deals with situations where there are marked variants of more neutral constructions (e.g. passives versus actives, clefts, right dislocations, etc.). In all these cases, FG would have different representations for the unmarked and marked variants, despite their arguable unity at a deeper level. Again, an underlying conceptual level different from the linguistic representation would be a solution to the problem.

Nuyts (1992a: 229–230) also summarises the evidence showing that language users tend to remember the underlying meaning, rather than more precise verbal structure, of utterances, again suggesting that conceptualisation is not lexical in nature. A further argument (1992a: 230–231) comes from translation. While, as Dik points out, this is indeed both difficult and culture-bound, the fact that it is very often possible to find translations even where the target language does not lexicalise the concept in question suggests that there is some deeper level of conceptualisation beneath the purely linguistic.

43. A similar situation has been noted in more recent work on modality (Vet 1997); Kwee (1996: 7) also remarks that the difference between operators and satellites in the theory “seems to be accidental, in fact just formal and superficial”.

44. For discussion of Nuyts’ account of modality within FPG, see §9.2.3.5.

Nuyts (1992a: 232–236) also rehearses a number of arguments against the relationship between conceptual and perceptual knowledge proposed by Dik.⁴⁵ He concludes:

It seems more reasonable to assume that conceptualization is a matter of developing a representational system which is not specifically determined by, and thus not biased toward, one specific mode of perception and behavior such as the linguistic or visual one, but which steers a path between the different channels ... (1992a: 234)

Nuyts' overall conclusion is that:

... it seems impossible to avoid a higher degree of abstractness in representing conceptualization than Dik would be willing to grant (1992a: 236).

This conclusion is also strongly supported by the work of Hesp (1990a, 1990b), who shows that a model such as Dik's makes predictions, about what people should and should not remember about an utterance, and about inferencing from simple and more complex sentences, which are not borne out by the psycholinguistic evidence. He also presents evidence (from the non-reportability of procedural knowledge, the lack of complete separation between the conceptual systems of bilinguals, the difficulty of making a clean separation between conceptual and perceptual knowledge, and the apparent universality of aspects of processing in certain semantic domains) that militates against the modified view that input sentences might be translated into more abstract, but still linguistic, structures before storage in memory and retrieval for reasoning processes.

The overall architecture of FPG is shown in Figure 3.6, from Nuyts (2001a: 273, Figure 6).⁴⁶ The 'universe of interpretation' (UI) for a speaker/hearer (S/H) is:

... the stock of world knowledge which is activated in the current communicative setting and which is an integral part of the speaker's encyclopedia (his/her entire 'inventory' of long term knowledge about the world, in its widest sense: the physical world, the social world, the psychological world, and any imaginary world).
(Nuyts 1994: 161)

The UI not only provides direct input for the construction of the message, but can also be consulted for information on any knowledge required, such as knowledge of social conventions and of one's social relationship with the hearer.

The first stage towards the production of the final (series of) utterance(s) is 'textualising', by which is meant the construction of a conceptual structure (the 'situational network' (SN)) which includes the information about the state of affairs (SoA) which

45. Bakker & Siewierska (forthcoming) also point out that there is no evidence for any difference in mental storage or processing between conceptual and perceptually-acquired information, or between declarative and procedural information. They also observe that there must be, at a prelinguistic stage in the development of human language capacities, some way of bootstrapping the brain into thinking and knowledge acquisition.

46. In Nuyts' schema, italics represent series of procedures resulting in particular kinds of representational structures, which are given in normal type. The dotted box at the bottom represents the limits of what is usually regarded as the grammar.

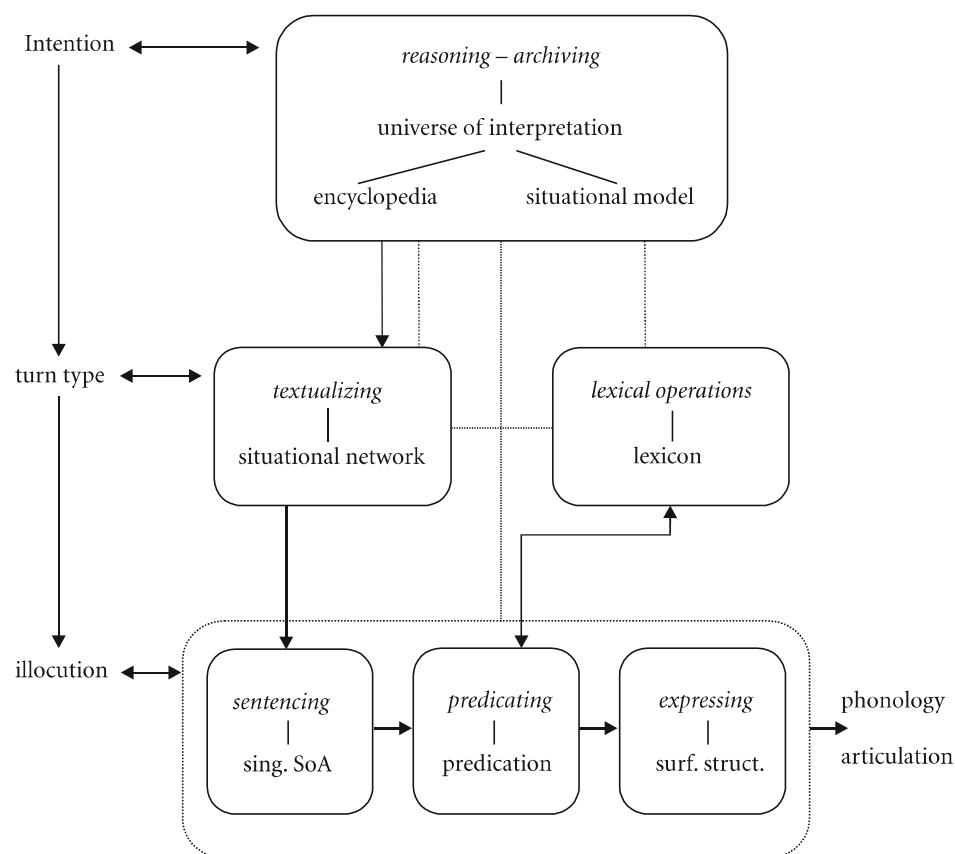


Figure 3.6. Outline of Functional Procedural Grammar (Nuyts 2001a: 273, Figure 6)

S/H considers may relevantly be communicated to the addressee within one turn in discourse. The SN may therefore contain more material than will eventually be packaged into one utterance, and its construction must include the planning of the discourse turn. The speaker's intention in contributing this particular turn, and his or her model of the hearer's knowledge in relation to the relevant SoAs, are important factors in SN construction.

Textualising involves at least two types of procedure. Firstly, appropriate material must be selected from the UI for encoding in the current turn, and the various pieces of information must be put together into a coherent conceptual structure, while maintaining an appropriate relationship with other information within or outside the discourse. This information may need to be qualified in terms of concepts relating to, for example, time, aspectual meanings, polarity, modality and purposive function. Secondly, the information structuring of the components of the turn must be decided on.

The conceptual representation in the SN is then converted into actual linguistic utterances in three further phases, as shown in Figure 3.6. Sentencing procedures involve

the isolation from the SN of conceptual information units (termed ‘singular SoAs’ (SSA)) which can be packaged as single utterances, and each of which has its own status within the turn. Each SSA needs to be organised both internally and in relation to other SSAs (e.g. by assignment of topic and focus), so that the resulting units will fit into the discourse, and the complex of SSAs needs to be appropriately sequenced. Predication procedures involve choosing a predicate and its arguments, determining predicate and term operators, selecting an appropriate pattern type, and assigning syntactic functions. Finally, expression procedures specify the surface output in terms of morphosyntactic form and intonation.

We are now in a position to compare Nuyts’ model with Dik’s in relation to their treatment of the simplex clause. Clearly, it is only when we get to the predication and expression procedures that we enter the realm of FG as conceived by Dik – and after that point, Nuyts assumes that FG is a broadly adequate basis. There are nevertheless some highly significant differences, in terms of the level in the overall system at which particular phenomena are to be accounted for. For instance, Nuyts (2001a: 8) argues that the selection restrictions imposed on predicates in FG should be accounted for not in the grammar itself, but in the conceptual system, as an aspect of our knowledge of the world. Another important difference is concerned with the stage at which pragmatic functional information, and also qualifications in terms of such things as time and modality, are introduced. In Nuyts’ model, in the interests of cognitive plausibility, decisions in these areas are, as we have seen, made at an early stage, during textualisation, which gives rise to the conceptual structure in the SN.⁴⁷ One of the consequences of this is that, according to Nuyts (1992a: 280, 1999: 183, 2001a: 320–321), pragmatic function assignment disappears from what in Dik’s model would be seen as the build-up of underlying clause structure (Nuyts’ predication procedures).

There is a further important difference between the two models, concerned with the concept of layering. As noted briefly in §3.3, Nuyts’ work on particular areas of conceptualisation and linguistic structure within the FPG model has led him to the conclusion that the layering scheme proposed by Hengeveld and taken over by Dik is too simple to account for the linguistic facts, which require a much more gradual layering system; in FPG, on the other hand, layering at the level of linguistic structure is likely to be rather simpler than assumed in current FG (see Nuyts 1998, 2001a: 334–366, forthcoming).⁴⁸ Indeed, as Nuyts’ (1992a: 258–260) observes, much complexity which is at present handled in the grammar itself in FG (e.g. that concerned with meaning definitions and selection restrictions) would be handled at the conceptual level in the FPG model.

47. For a similar view on the psychological implausibility of assigning pragmatic functions at a late stage, see Bakker (1994: 424), where it is also pointed out that the building up of clause structures starting from the predicate runs counter to the proposed direction of scoping of operators. Kwee (1997: 203) also argues, from the point of view of computational implementation, that assignment of pragmatic functions should precede that of syntactic functions. Junger (1987), too, suggests that pragmatic functions should be the first rather than the last type of function to be assigned.

48. For more detailed and critical comment see Chapter 6 and also the discussion of modality in Chapter 9.

3.7 Two recent proposals

Very recently, several quite radical proposals have been made within FG, making sweeping changes to the overall model. Certain of these involve the importation of ideas from Role and Reference Grammar, and so will be described in Chapter 6, where models are explicitly compared. Recent work by Hengeveld and by Mackenzie will be summarised briefly in what follows.

3.7.1 Recent proposals by Hengeveld

Hengeveld (1997a) presents a new model which extends the grammar upwards to accommodate discourse structures. As the innovations are largely concerned with the modelling of discourse, they will be described in more detail in Chapter 4 of Part 2. It will suffice to say here that a third level, the rhetorical, is added to the interpersonal and representational levels, and that a modification is made to the interpersonal level such that the underlying structure indicates which interactant in a dialogue is speaking at the time the utterance is formulated.

Hengeveld (forthcoming a) has recently put forward a model (Functional Discourse Grammar, FDG) which will be reviewed here because it makes important changes to his earlier layering proposals. An important difference between FDG and the earlier model is that the new model has a top-down rather than a bottom-up orientation: that is, it works from intention to articulation, while still retaining many of the essential properties of Dik's account. Hengeveld gives two connected reasons for this: firstly, in the model proposed by Levelt (1989), speech production is seen as a top-down process going from intention to articulation; secondly, in such a model, the ways in which underlying structures are generated, and especially the interfaces between levels, can be seen in terms of the decisions taken by the speaker in constructing an utterance.

From 'top' to 'bottom', the model distinguishes three interacting levels: the **interpersonal** level, concerned with language as communicational process; the **representational** level, concerned with language as a carrier of content; and the **expression** level, concerned with the way in which communicated content is represented at the surface of language. The three levels of the linguistic model interact with two other components of the overall model, the cognitive and communicative. The **cognitive** component is concerned with the long-term knowledge of the speaker (communicative and linguistic competence, knowledge of the world) while the **communicative** component is concerned with the short-term linguistic information available from the previous discourse and non-linguistic (perceptual) information derivable from the situation in which communication is occurring.

Within the linguistic component, mapping rules link the interpersonal level to the representational, in those situations in which communication involves the transmission of semantic content, and expression rules link both the representational and interpersonal levels to their realisation at the expression level, the latter link being needed in cases where only pragmatic information is conveyed, as with, for example, expletives such as *Damn!*

Each level of the linguistic component is organised hierarchically according to its own independent layering model. The interpersonal level has the schematic structure shown in (74):

$$(74) \quad (M_1: [(A_1: [ILL (P_1)_{Sp} (P_2)_{Addr} (C_1: [... (T_1) (R_1) ...] (C_1))] (A_1))] (M_1))$$

where ‘M’ represents a move (a minimal free unit of discourse), ‘A’ a discourse act, ‘ILL’ the illocution encoded in the expression, ‘P’ a participant in the speech event (differentiated into speakers and addressees), ‘C’ the communicated content, ‘T’ an ascriptive act and ‘R’ a referential act. Here, I shall concentrate on the changes in the modelling of the underlying structure of the clause, leaving more discourse-oriented aspects for Chapter 4 of Part 2. One significant change from earlier accounts is the Searlian position taken with respect to the distinction between two kinds of interpersonal act, ascriptive and referential; another is the splitting of the erstwhile propositional variable ‘X’ into two components, one of which, that for the speaker-bound communicated content ‘C’, is included in the interpersonal structure. The other component is part of the representational level, whose schematic structure is shown in (75):

$$(75) \quad (p_1: [(e_1: [(f_1) (x_1)] (e_1))] (p_1))$$

Here, ‘p’ is the propositional content, ‘e’ the State of Affairs; as before, ‘f’ represents a property or relation, and ‘x’ an individual. Hengeveld notes that the distinction between ‘C’ at the interpersonal level and the entity type at the representational level allows for the possibility of communicating content simply by referring to, for instance, a first order entity rather than producing a full propositional structure. Similarly, ‘T’ at the interpersonal level allows for a distinction between the act of ascription by the speaker and the type of entity described, and ‘R’ for the distinction between an act of referring and the entity type referred to.

Finally, the expression level has the type of representation shown in (76), which is recognised to be an oversimplification, since different languages have different possibilities for expression, and a given language usually has a more complex set of possibilities than those shown here. Note that the expression model appears to be based on the written language, though no clear statement is made by Hengeveld to this effect.

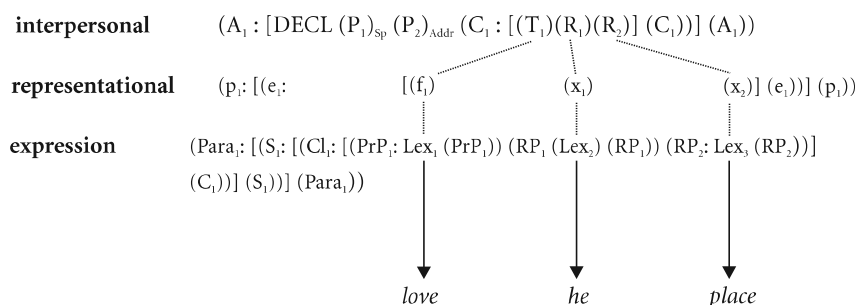
$$(76) \quad (Para_1: [(S_1: [(Cl_1: [(PrP_1: [(Lex_1)] (PrP_1)) (RP_1: [(Lex_2)] (RP_1))] (Cl_1))] (S_1))] (Para_1))$$

‘Para’ represents the paragraph, ‘S’ the sentence, ‘Cl’ the clause, ‘PrP’ the predicate phrase, ‘RP’ the referential phrase, and ‘Lex’ a lexeme.

Hengeveld suggests that referents from both the interpersonal and expression levels need to be copied into the representational level, via the communicative context, so that they can be referred to in the subsequent discourse. He shows that information from the interpersonal level is required, for example, to account for phenomena such as hedged performatives, while units from the expression level are required for reflexive language such as metalinguistic expressions and direct speech.

Below, I analyse one complete example and parts of a few others to show the kind of layered structure Hengeveld proposes. The boxed analyses in (78)–(80) refer to the constituents in bold type in each example.

(77) *He loves this place.* (BNC B1X 524)



(78) *I don't know whether I could afford all those leather jackets.* (BNC ARJ 1701)

interpersonal	$(A_1 : [\text{DECL } (P_1)_{\text{Sp}} (P_2)_{\text{Addr}} (C_1 : [(R_1)] (C_1))] (A_1))$		
representational		(p_1)	
expression		(Cl_1)	

(79) *Hell!* (BNC AN7 2396)

interpersonal	$(A_1 : [\text{EXPR } (P_1)_{\text{Sp}} (P_2)_{\text{Addr}} (C_1 : [(C_1)] (A_1))$	
representational		—
expression		(Lex_1)

(80) *Andrea!* (BNC ARB 1744)

interpersonal	$(A_1 : [\text{VOC } (P_1)_{\text{Sp}} (P_2)_{\text{Addr}} (C_1 : [(R_1)] (C_1))] (A_1))$		
representational		—	
expression		(Lex_1)	

The Functional Discourse Grammar model is further elaborated in Hengeveld (forthcoming b), in response to reactions to the original proposal, as represented by the various contributions to the volume edited by Mackenzie & Gómez-González (forthcoming). The model is now situated within a wider model of verbal interaction consisting of four components: the **conceptual** component which drives the creation of linguistic expressions; the **grammatical** component which subsumes the interpersonal and representational levels of the original version and incorporates a further structural level; the **acoustic** component (or, in different media, an orthographic or sign component) which subsumes the expression level; and the **contextual** component. The conceptual component drives the formation of both interpersonal and representational aspects of the grammatical component, and the underlying representation deriving from this process is then encoded at the structural level. The structural and interpersonal levels determine the expression proper-

ties (phonetic, graphic, etc.) of the utterance. The contextual component is in interaction with all levels and is also involved in developing new conceptualisations.

The system of levels is also relevant to the classification of functional information and of items in the fund. As noted by Anstey (forthcoming), the ordering of interpersonal, representational and structural levels reflects Dik's claim that the pragmatics should have priority over the semantics, and the semantics over the syntax. Following suggestions by Cornish (forthcoming) and Mackenzie (forthcoming), Hengeveld proposes that pragmatic functions are situated at the interpersonal level; semantic functions, on the other hand, are at the representational level as in earlier versions of FG, and syntactic functions at the structural level. Syntactic functions are thus seen in this model in purely grammatical terms, their perspectivising role arising from the pragmatic and semantic information which triggers their assignment.

As far as the fund is concerned, the position taken is that each level in the model contributes its own set of basic units. At both the interpersonal and representational levels, we have lexemes, operators and frames; in the case of the interpersonal level the frames are illocutionary, while at the representational level they are predication frames.⁴⁹ The structural level contributes templates and morphemes to the fund, while the acoustic level has sounds and prosodic patterns.

3.7.2 Mackenzie's Incremental Functional Grammar

Finally, we should note that Mackenzie (1998a, 2000, forthcoming) has recently proposed a model, referred to as Incremental Functional Grammar (IFG⁵⁰), which foregrounds the importance of what have often been considered incomplete or elliptical utterances, not only in children's speech but also in adult language, and expands on the suggestion in Dik (1997a: 329) that such utterances might be expanded into 'full' ones, rather than being derived from them by ellipsis.⁵¹ I shall refer to this model again at appropriate points in this book and in Part 2, but for now it will be sufficient to note certain key aspects which bear on clausal organisation. The following summary is based closely on Mackenzie (2000).

The aim of IFG is

to bring FG closer to work in the modelling of production and comprehension and thereby to increase its claim to psychological adequacy. (Mackenzie 2000: 34)

For this reason, Mackenzie claims it has a close relationship with Nuyts' Functional Procedural Grammar (see §3.6). The concept of temporal succession is central to the model, in that individual utterances, as well as larger stretches of discourse, are analysed as a succession of units in time. Every discourse act consists of a sequence of subacts, which may be

49. For discussion of the replacement of predicate frames by predication frames, see §6.2.2.3.

50. Not to be confused with (italicised) *IFG*, the abbreviation often used in this book for Halliday's *An Introduction to Functional Grammar*.

51. For further work on special utterance types needing a discourse sequence for their interpretation, see Ziv (1994).

concerned with reference, predication or the organisation of the discourse. These subacts are recognised functionally: although they have a rough correspondence with the main constituents of syntactic structure, there are some types (e.g. multi-word lexical units) which may not correspond with constituents in this way. The emphasis on left-to-right, temporally organised sequencing is seen as a development of Dik's earlier-to-later ordering of elements in structural templates, and also as consonant with Bakker's work on expression rules (see §3.4).

Mackenzie takes up the basic framework provided in Hengeveld's 1997 model as a way of representing holophrases and their expansions in FG. On the principle of including in the underlying representation of an utterance only that information which is necessary to allow the expression rules to produce that utterance, he proposes that holophrases lack layers for illocution, proposition and predication, since they do not manifest any features of these kinds. One example will suffice for the present. The holophrase in (81) is analysed as having the structure shown in (82), where 'M' stands for Move, 'P' for a participant in the interaction, 'U' for Utterance (cf. Mackenzie's example (7c), 1998a: 277).

(81) *Coffee?* (BNC ASS 1867)

(82) (M₁: [OFFER (P₁)_{Sp} (P₂)_{Ad} (U₁: [(ix_i: coffee_N)_{Foc}])])

In Incremental Functional Grammar, then, holophrases such as the above are minimal utterances, often acting, for example, as answers to questions, greetings or calls, among many other functions. It is assumed that the P1 position (see §3.2.3) must be filled⁵² in any utterance in English, so that, trivially, a one-constituent holophrastic expression must be in this position. Furthermore, since it can be assumed that there is always some 'point' to an utterance, and since the most salient information is focal in the FG model, it also follows that the holophrase carries Focus. The model then postulates expansion of such holophrases by the filling of positions after P1 in the template, bringing with it the possibility of relocating the Focus, which, although it can still be placed in P1 according to the principle of 'task urgency' (Givón 1989) tends to take a late, often final, position in accordance with the principle that the most recently presented information is the most easily retained. In this way, IFG assigns particular importance to both first (P1) and late/last (focal) positions in an utterance.

3.8 Conclusion

I shall conclude by summarising, in relation to FG, the answers to the questions raised at the end of Chapter 2.

52. As we shall see in Chapter 2 of Part 2, this is a matter of controversy in FG at the present time.

3.8.1 The relationships between levels of linguistic patterning

As we have seen, the building up of the underlying structure of the clause in classical FG begins with the selection of a predicate from the lexicon. Lexical patterning is thus at the heart of FG, even in the Dik model, and even more so in the Functional Lexematic Model, with its concept of predicate schema. The underlying structure generated is fundamentally a semantic structure, with no specification of syntactic realisation. It is, however, enriched by the allocation, where appropriate, of syntactic functions (Subject, Object) and pragmatic functions (Topic, Focus, etc). The morphological form of items, the insertion of adpositions, the syntactic ordering of constituents, agreement phenomena, and prosodic contours are all introduced by the expression rule component.

3.8.2 Mechanisms for specifying clause structure

The model is generative, and the mechanism for generation is two-stage: the output of the procedure for generating the underlying structure of the clause is input to the expression rules, which produce the final output. In Functional Procedural Grammar the generation of underlying clause structure itself belongs to the predication procedures.

3.8.3 Layering

Dik postulates a layered underlying structure for the clause, consisting of predicate/term, predication, proposition and clause levels, each of which has its own operators (for grammatically expressed modifications) and satellites (for lexically expressed material). Operators at a given level have scope over those at lower, inner levels. Following Hengeveld, who in turn derives his idea from Halliday, present-day FG recognises the grouping of the predicate and predication levels (which Hengeveld renames 'layers') into a representational level, and the propositional and clausal into an interpersonal level. A number of proposals for modification of the Hengeveld/Dik structure have been made: most involve extra layers and/or elements within layers; some, such as those of Nuyts, offer more radical challenges. The latest work by Hengeveld and Mackenzie, while preserving many of the principles and insights of earlier FG, also presents radically new perspectives, which have yet to be followed through in detail.

3.8.4 Syntactic, semantic and pragmatic functions

The semantic functions of the arguments of a predicate (e.g. Agent, Goal) are specified in the lexical entry for that predicate.

The syntactic function Subject may or may not be relevant in a particular language, depending on the availability of voice options in which the passive encodes the same representational content as the active, and has a non-first argument which shares at least some coding and behavioural properties with the first argument of the active. Subject assignment is seen in terms of the perspectivisation of the State of Affairs, and oper-

ates when all the representational information about the clause has been specified, i.e. at the end of Level 2. In languages which have Subject assignment, there may be a secondary perspectivisation, achieved by Object assignment. FG has no category of Indirect Object. Accessibility to Subject and Object assignment, if relevant, is conditioned by a set of hierarchies, concerned with semantic function, definiteness, animacy, person, etc. In Hengeveld's Functional Discourse Grammar syntactic function assignment is purely grammatical, its perspectivising role arising from the semantic and pragmatic factors which motivate it.

A variety of pragmatic functions is postulated in FG. The clause-internal pragmatic functions are the various types of Topic and Focus, which, in Dik's model, are assigned after the semantic properties at all four levels have been specified. In Hengeveld's latest model of a Functional Discourse Grammar pragmatic functions are assigned at the interpersonal level, while in Nuyts' FPG model, information structuring is decided upon at an earlier, conceptual stage in utterance generation.