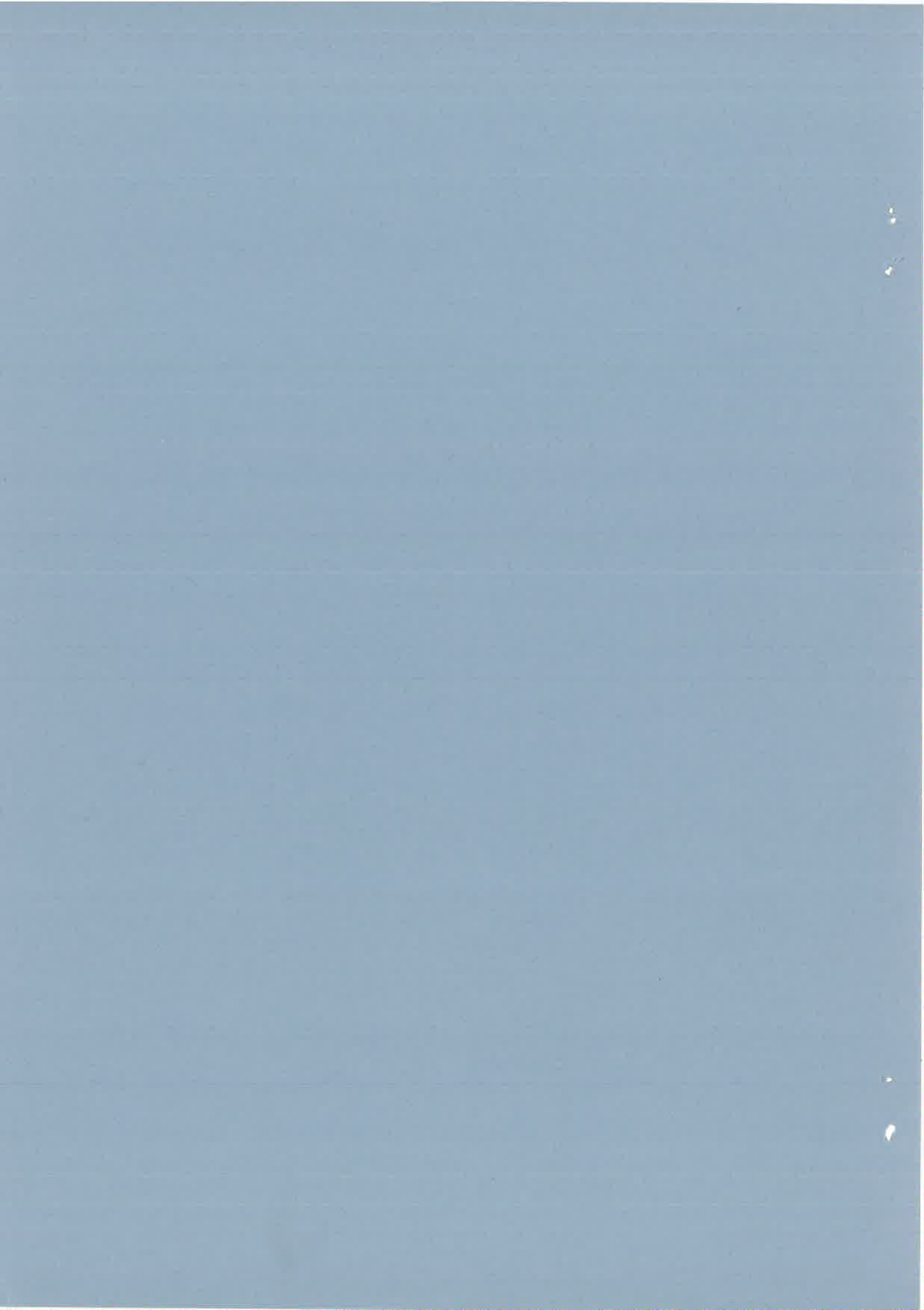


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Layers and Operators
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LAYERS AND OPERATORS
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Abstract

This paper argues for a hierarchical organization of the clause model in Functional Grammar, redefines the role and position of operators within that model, and shows the implications of the resulting multi-layered approach for the treatment of subordinate constructions.

0. Introduction¹

I have argued elsewhere (Hengeveld 1987b) that for a proper treatment of modality the clause model used in Functional Grammar (Dik 1978, Dik 1980) should be adapted in such a way that a number of different layers can be distinguished. My main argument there was that modalities that express a propositional attitude, i.e. are concerned with the truth of a proposition, should take a predication in its content-representing function in their scope, whereas objective modalities, i.e. those modalities that are concerned with the actuality status of a State of Affairs, should take a predication in its SoA-designating function in their scope. A clause model should therefore be able to distinguish between these two uses of predications. In this paper I want to refine the model in such a way that other categories of operators can be included and then proceed to explore the possibilities of the resulting structure. In doing so I will touch upon a number of related issues which have received much attention lately:

- (i) Restrictions on the ordering of TMA-morphemes (Bybee 1985, Foley and Van Valin 1984).
- (ii) The representation of sentences in Functional Grammar, in relation to the treatment of Tense (Vet 1986).
- (iii) Restrictions on the selection and expression of TMA-morphemes in subordinate constructions, in relation to the degree of sententiality of the subordinate construction (Lehmann 1987).
- (iv) The representation of non-restrictive constructions and predication-combining in Functional Grammar (Hannay and Vester 1987).

In section 1 I present a clause model which shares its layered structure with that proposed by Foley and Van Valin (1984), and uses the format proposed in Vet (1986) for the representation of individual layers. In section 2 I give a classification of operators according to their relative scope by associating them with the different layers distinguished within the clause model. Section 3 explores the implications of the model for the classification and treatment of subordinate constructions.

1. I am grateful to Machtelt Bolkestein, Simon Dik, Casper de Groot, Peter Kahrel and Lachlan Mackenzie for their comments on previous versions of this paper. Technical facilities for printing this paper were provided by the Institute for functional research of language and language use (IFOTT), Faculty of Arts, University of Amsterdam and its secretary Hotze Mulder.

1. A two-level analysis of the clause

The basic idea behind the clause model presented here is that every utterance can be analyzed at two levels: the *representational* (Bühler 1934) and the *interpersonal* (Halliday 1970) level. At the representational level a State of Affairs (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* (see Jakobson 1971).

1.1. The representational level

For the representation of narrated events I use Vet's (1986) proposal concerning the representation of sentences. Vet argues that sentences, like terms, are referring expressions. The entities they refer to are States of Affairs, which take place in some time-space region. To arrive at a unified account of terms and sentences, he proposes the following general schema for the representation of sentences, which, apart from the identity of the variable, is identical to the schema for the representation of embedded predications in FG (see e.g. Dik 1979:128):

$$(1) \quad (e_i: [\text{Pred}_\beta (x_1) (x_2) \dots (x_n)] (e_i))$$

I will return to some details and advantages of Vet's analysis in the sections on operators and satellites. What is relevant here is that I interpret the sentence variable e , symbolizing some time-space region, as a variable representing the narrated event. This variable is restricted by a closed predication designating the SoA which occupies the time-space region represented by e .

1.2. The interpersonal level

Speech events may be analyzed in an analogous way: the participants in a speech event (E) are the speaker, the addressee and the transmitted content or message. The relation between these three participants is expressed by an abstract illocutionary frame, which represents the basic illocution of the linguistic expression. An example of an illocutionary frame with its paraphrase, based on Dik (in prep.), is given in (2):

(2) DECL (S) (A) (X₁)
 Speaker (S) wishes the Addressee (A) to add the content (X₁) to his pragmatic information.²

The analysis presented here, which can be considered a FG equivalent of Ross' (1970) performative analysis, leads to the general schema for the representation of speech events given in (3), where the speech event variable *E*, symbolizing the current time-space region, is restricted by a clause designating the speech act which occupies this time-space region:

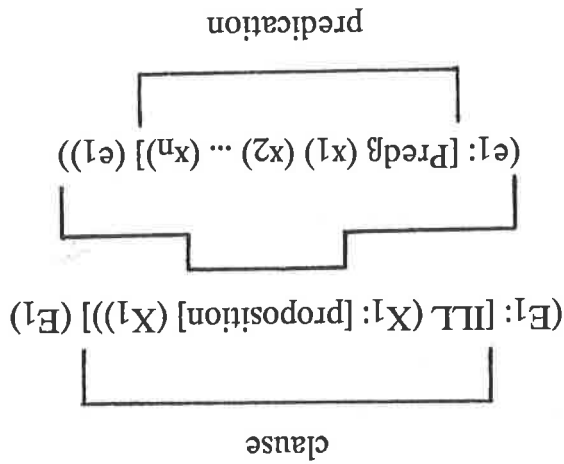
(3) (E₁: ILL (X₁: [proposition] (X₁))) (E₁)

Note that I represent the illocutionary force of an utterance in the form of an illocutionary *frame*, rather than in the form of an illocutionary *operator*. The main reason for this approach is that in this way the proposition can be treated as an argument, to be processed in some communicative act, rather than as an in-dependently existing unit. Furthermore this approach creates a strong parallelism between the two individual levels.

1.3. The clause

The representations of narrated and speech event may be combined into a single representation of the utterance, as in (4):

(4) THE REPRESENTATION OF UTTERANCES



2. The speaker and the addressee are generally implicit in the speech situation, and are left out of FG-representations in the rest of this paper.

In this analysis of the clause a predication fulfils two different functions: it designates a SoA at the representational level, and it represents the content of a speech act at the interpersonal level. To distinguish these two uses of predications I use the term 'predication' to refer to the former and 'proposition' to refer to the latter function.

Starting from the innermost layer, the predication, the functions of the different layers distinguished in (4) can be understood in the following way. A predication gives a description of a set of possible SoA's. By inserting a predication into a narrated event slot it becomes a referring expression. The entity it refers to is the real or hypothesized situation the speaker has in mind³. By inserting a fully specified predication into the proposition slot of an illocutionary frame it becomes an expression referring to the information unit or content transmitted in some speech act. The illocutionary frame contains instructions for the addressee about what the speaker wants him to do with this information unit. By inserting a clause into a speech event slot it becomes an actual speech act or *utterance-token* (Lyons 1977:35).

The representation given in (4) contains four different variables (Var), referring to different kinds of entities, and restricted by different linguistic units with different designations:

(5) VARIABLES AND RESTRICTORS

<i>Var</i>	<i>Reference of variable</i>	<i>Restrictor</i>	<i>Designation of restrictor</i>
E	Utterance	Clause	Speech act
X	Content	Proposition	Possible fact
e	Narrated event	Predication	State of Affairs
x	Individual	Predicate	Property/Relation

3. This definition captures both non-generic and generic predications if the latter are represented, parallel to generic terms, in the following way:

(i) $(ge_1: [\text{predication}] (e_1))$

The interpretation of the generic operator (g) in this context is something like: the statement is valid for any instantiation of the SoA designated by the predication.

Thus the analysis provides variables for first (x), second (e), and third (X) order entities, which all play a different role within the speech event (E). The speech event variable itself could be regarded as referring to a fourth-order entity. It is different from the other three kinds of variables in that it refers to the speech event itself rather than to one of the entities to which reference is made *within* that speech event. E-variables are created during the process of speaking. A speaker and his addressee(s) make use of them later when remembering who said what when and where or when referring to a particular utterance. The E-variable can be seen as containing information about the time and place of, and the participants in the speech event. As such it provides clues as to the reference of what Jakobson (1971) called *shifters*: grammatical units of which the general meaning cannot be defined without making reference to the speech event within which they are used, such as personal and demonstrative pronouns, and absolute tenses. The E-variable provides the deictic centre (see Comrie 1985:36) on the basis of which the reference of these elements is determined⁴. It will be of some use in defining tense distinctions (see 2.3.).

2. Operators

2.1. General outline

Leaving aside term operators, the clause model given in (4) provides four positions for operators, as indicated in (6):

(6) OPERATORS (POSITIONS)

$$(E_1: [p_4 \text{ ILL}(p_3 X_1: [\text{proposition}] (X_1))]) (E_1)$$

$$(p_2 e_1: [p_1 \text{ Pred}_\beta (x_1) (x_2) \dots (x_n)] (e_1))$$

p₁: predicate operators

p₂: predication operators

p₃: proposition operators

p₄: illocutionary operators

4. Cf. Lyons' (1977:170) remark that 'We cannot say of a sentence like 'That man over there is my father' that it expresses a true or false proposition unless we know who has uttered it and who is the person being referred to by means of the expression 'that man over there.'

Definitions for these four classes of operators are given in (7), and a tentative classification of operators in terms of this fourfold distinction is given in (8):

(7) OPERATORS (DEFINITIONS)

- (i) *Predicate operators* capture the grammatical means which specify additional properties of the set of SoA's designated by a bare predication.
- (ii) *Predication operators* capture the grammatical means which locate the SoA's designated by a predication in a real or imaginary world and thus restrict the set of potential referents of the predication to the external situation(s) the speaker has in mind.
- (iii) *Proposition operators* capture the grammatical means through which the speaker specifies his attitude towards the (truth of the) proposition he puts forward for consideration.
- (iv) *Illocutionary operators* capture the grammatical means through which the speaker modifies the force of the basic illocution of a linguistic expression so as to make it fit his communicative strategy.

(8) OPERATORS (CLASSIFICATION)

SEMANTIC DOMAIN	GRAMMATICAL CATEGORY
Predicate operators	
Internal temporal constituency Presence or absence of property or relation expressed by predicate	Imperfective/Perfective, Phasal Aspect Predicate negation
Predication operators	
Time of occurrence Frequency of occurrence Actuality of occurrence	Tense Quantificational Aspect Objective mood/Polarity
Proposition operators	
Source of proposition Commitment to proposition	Evidential mood Subjective mood
Illocutionary operators	
Weakening strategy Strengthening strategy	Mitigating mode Reinforcing mode

The crucial difference between predicate operators and predication operators is that predication operators are concerned with the *occurrence* or setting of a SoA rather than with its *properties*. Thus predicate operators are related to the descriptive function of predications, whereas predication operators are related to the referring function of predications.

The crucial difference between predication operators and proposition operators is that proposition operators are concerned with the attitude of the speaker towards the *content* of his speech act, rather than with the occurrence of the event to which reference is made within that speech act. Thus proposition operators are related to the content function of propositions.

The crucial difference between proposition operators and illocutionary operators is that illocutionary operators are concerned with the *possible perlocutionary effects* of a speech act, rather than with its *content*. Thus illocutionary operators are related to the communicative intention with which the speaker presents this content.

The general functions of the four operator types can now be defined as in (9):

- (9) p₁: Modification of the internal structure of the SoA.
 p₂: Qualification of the SoA as a whole.
 p₃: Qualification of the proposition.
 p₄: Modification of the basic illocution.

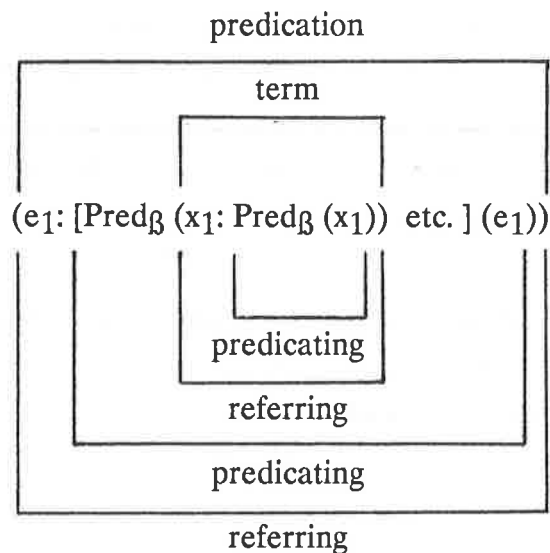
In what follows I give some examples of how distinctions in the field of Tense, Mood, Aspect, Polarity and Illocution can be interpreted in terms of this fourfold classification. It is not my intention to provide a fullfledged account of the typology of TMA systems, but rather to adduce some evidence for the distinction between four types of operators as it is made here.

2.1. Operators at the representational level

The distinction between predicate operators and predication operators is motivated by the fact that at the representational level two functions should be fulfilled: first of all, the speaker should create a proper description of the situation he wishes to refer to; secondly, he should relate this description to the situation he has in mind. I will refer to these two functions of the predication as its *predica-*

ting and *referring* function. The same distinction may be applied to terms: within the predication they are referring expressions, but their internal make-up consists of the application of predicates to a term variable. When terms are inserted into argument slots they become expressions referring to individuals existing in some world. When predications are inserted into SoA slots they become expressions referring to situations obtaining in some world. This correspondence between terms and predications is stressed in Vet (1986). The following figure tries to capture these two functions of predications and terms:

(10) PREDICATING AND REFERRING FUNCTIONS OF PREDICATIONS AND TERMS



Predicate operators fulfil a function in building up a proper description of the situation the speaker wishes to refer to: without affecting the argument structure of a predicate frame, predicate operators specify properties of the SoA's designated by bare predications which are of sufficient generality to be coded grammatically rather than lexically within a given language. Predication operators are related to the referring function of predications: without affecting the properties of the SoA's designated by a predication they relate the description of a SoA to the occurrence of that SoA in a real or imaginary world.

2.1.1. Predicate operators

Given the property-assigning function of predicate operators, to make a grammatical category qualify for predicate operator status it should be such that the characteristics of the set of SoA's designated by a predication in which the gram-

matical category is applied are different from the characteristics of the set of SoA's designated by the same predication in which the predicate operator is not applied. The general properties expressed through predicate operators may include:

- (i) The 'internal temporal constituency' (Comrie 1976) of the situation referred to.
- (ii) The presence or absence of the relation or property expressed by the predicate.

Many, though not all, aspectual distinctions seem to express properties of the first type. This can most easily be demonstrated by looking at the typology of SoA's.

What is generally called 'Aktionsart' is handled in FG in terms of a typology of SoA's (see Dik 1978, in prep., Vester 1983, de Groot 1985). The main parameters in the typology of SoA's are: +/- dynamic, +/- control, +/- telic, +/- momentaneous. In different combinations these parameters define most of the SoA-types.

Many aspectual distinctions are 'feature changing', in the sense that they change the value of one of the aforementioned parameters. For instance, the English Perfect, Progressive and Prospective turn a +dynamic SoA into a -dynamic one. Steedman (1977:221, see also Goossens (1985)) demonstrates that English sentences involving these aspectual categories are similar to states, since they cannot take part in pseudocleft constructions of the type given in (11):

- (11) *What he did was have run

In a similar way, the perfective/imperfective distinction may affect the momentaneousness of a SoA, as in (13), where the imperfective value of the progressive cancels the momentaneousness of *reach* (see Comrie 1976:43):

- (12) a The soldiers reached the summit (+ Mom)
 b The soldiers were reaching the summit (- Mom)

I take it that this feature-changing property of many aspectual categories indicates that they can be analyzed as operating SoA-internally. This view is supported by the fact that dynamicity and momentaneousness are 'inherent' features of predicates, as opposed to, for instance, Control and Telicity, which may depend

on features of arguments and satellites (see de Groot 1985: 75).

Apart from aspectual distinctions, negative polarity can be analyzed as operating on the predicate in sentences like the following (see Vet 1986):

(13) Charles is not unintelligent

On one interpretation of this sentence, it is claimed that it is the case that Charles has the property 'not-unintelligent'. On another, it is claimed that it is not the case that Charles has the property 'unintelligent'. Under the first interpretation the negative element can be seen as the expression of a predicate operator, under the second as the expression of a predication operator (see 2.2).

It is a general property of the categories discussed here that they present borderline cases in the sense that languages may differ with respect to the derivational or inflectional realization of these categories. A case in point is the perfective/imperfective distinction in the Slavic languages, which seems to be analyzable as partly derivational, partly inflectional. Predicate negation in English, as illustrated in (14), is another illustration. Consider:

(14) Charles is not intelligent

This sentence imposes the 'it is not the case that ...' interpretation, given the availability of (15):

(15) Charles is unintelligent

The application of *not* as the expression of a predicate operator remedies the ungrammaticality of **unintelligent*, but would be quite exceptional or unacceptable in other cases.

2.1.2. Predication operators

The kind of distinctions to be expressed through predication operators have been characterized as being concerned with the occurrence of a SoA rather than with its properties. A set of SoA's designated by a predication may be delimited to the situation(s) the speaker has in mind by evaluating it with respect to:

- (i) time of occurrence
- (ii) frequency of occurrence
- (iii) actuality of occurrence

All *Tense* distinctions can be analyzed as operating on predications. They locate the SoA designated by a predication on the time axis relative to the speech act or to other SoA's. Vet (1986) proposes to analyze tensed predications in the following way:

(16) (Tense e_1 : [predication] (e_1))

Following Comrie (1985) a distinction can be made between absolute, relative, and absolute-relative tense. The time of occurrence of a SoA may be evaluated relative to the time of occurrence of the speech act, in which case the variable E provides the 'deictic centre' (ibid, 36) for absolute time reference. Or it may be evaluated relative to the occurrence of another SoA, in which case the narrated event variable e provides the reference point for relative time reference. An adaptation of Comrie's (ibid, ch.6) formalization in line with the variables used here leads to:

- | | | |
|------|----------------------------|-------------------------------------|
| (17) | a Absolute tense: | e_1 relative E_1 |
| | b Relative tense: | e_1 relative e_2 |
| | c Absolute-relative tense: | e_1 relative e_2 relative E_1 |

Examples are:

- | | | |
|------|----------------------------------|---------------------------------|
| (18) | a I crossed the street | e_i before E_I |
| | b Having crossed the street, ... | e_i before e_j |
| | c I had crossed the street, ... | e_i before e_j before E_I |

Thus the reference points needed to give a description of Tense distinctions are directly available within the clause model used here.

Apart from Tense distinctions, some aspectual categories qualify for predication operator status. The aspectual categories I have in mind give a specification of the frequency of occurrence of a SoA, such as Semelfactive and Iterative Aspect. Dik (1985:9) uses the term *Quantificational Aspect* as a cover term for aspectual categories like these. Rather than modifying the internal structure of a SoA,

these aspectual categories specify how many times a SoA with a given internal structure occurs (occurred, will occur). Separating the frequency of occurrence of a SoA from the internal temporal constituency of that SoA implies that both categories can in principle be specified independently of one another. Comrie (1976:30) showed this to be the case for English. The following example from Hidatsa confirms his analysis:

Hidatsa (Siouan, Matthews 1964)

- (19) Wíó i hírawe ki ksa c
 womanshe sleep Ingr Iter Mood
 'The woman fell asleep again and again'

The morpheme *ksa* indicates that the speaker refers to a situation that occurred frequently. The morpheme *ki* characterizes each individual occurrence of the situations referred to as being viewed from its starting point. The different status of the two aspectual categories can be demonstrated by the *occur*-paraphrases given in (20):

- (20) a It occurred frequently that the woman fell asleep
 b *It occurred ingressively that the woman slept

To distinguish between the two types of Aspect I will use the term 'Qualificational Aspect' to refer to those aspectual distinctions which can be thought of as expressed by predicate operators, and I will continue to use the term 'Quantificational Aspect' to refer to the aspectual distinctions which can be thought of as expressed by predication operators.

Example (19) could be represented as in (21):

- (21) (Iter. e_i : [Ingr. hírawe $\forall (x_i$: wíON (x_i)) $]$ (e_i))

But Quantificational Aspect can also be interpreted as a means of SoA-quantification⁵, comparable to term-quantification. Under this analysis quantificational aspects can be represented as:

5. This was suggested to me by Casper de Groot.

(22) QUANTIFICATIONAL ASPECT

- | | | |
|------|---|--------------|
| (i) | (1e ₁ : [predication] (e ₁)) | semelfactive |
| (ii) | (me ₁ : [predication] (e ₁)) | iterative |

This would be a second instance of the applicability of term operators in the domain of predications (see note 3).

The third TMA category which can be seen as operating on predications is *objective modality*.⁶ Linguistic means giving expression to objective modal distinctions can be regarded as the output of an evaluation process on the part of the speaker with regard to the actuality status of a state of affairs. The knowledge on which the speaker has to base this evaluation may be subdivided into the two types given in (23):

(23) TWO TYPES OF KNOWLEDGE

- (i) Knowledge of possible situations obtaining in speaker's conception of reality or of a hypothesized universe.
- (ii) Knowledge of possible situations relative to some system of moral, legal or social conventions.

The speaker bases his epistemic and deontic evaluations on (i) and (ii) respectively. Depending on the degree of compatibility of a state of affairs designated by a predication with speaker's knowledge of type (i) or (ii) the two ranges of possibility and permissibility in (24) can be established:

(24) OBJECTIVE MODALITY

- | | | | | | |
|------|------------|-------------|--------------|---------------|-------------|
| (i) | Certain | -Probable | -Possible | -Improbable | -Impossible |
| (ii) | Obligatory | -Acceptable | -Permissible | -Unacceptable | -Forbidden |

Elements giving expression to objective modal distinctions take a state of affairs as designated by a predication in their scope, as they represent the output of speaker's evaluation of the probability or desirability of occurrence of that state of affairs in terms of his knowledge.

Polarity distinctions operating on the predication, paraphrasable as 'it is the case that' and 'it is not the case that', are closely related to objective modality. They

6. See Hengeveld (1987b) for a more elaborate treatment of modality.

differ from the objective modal distinctions discussed so far in that they characterize a SoA as simply actual or non-actual.

2.2. Operators at the interpersonal level

The distinction between proposition operators and illocutionary operators is motivated by the fact that at the interpersonal level two functions should be fulfilled: firstly, the speaker should transmit some content, which may have different sources; secondly, he should indicate what he expects the addressee to do with this content. Proposition operators are used by the speaker specify to what degree he feels committed to the truth of the content he transmits, and they are therefore largely restricted to declarative sentences. Illocutionary operators capture the grammatical means which the speaker uses to modify the illocutionary force of his utterance in view of the possible perlocutionary effects of his speech act. Without affecting the basic illocution expressed by the abstract illocutionary frame, illocutionary operators specify strategical modifications of this basic illocution.

2.2.1. Proposition operators

Following Chung and Timberlake (1985:244) I use the term *epistemological modality* for those linguistic means through which the speaker expresses his commitment with regard to the truth of a proposition. Two subtypes are to be distinguished: *subjective* modality, through which the speaker specifies the kind and degree of his commitment; and *evidentials*, through which the speaker specifies how the proposition came to his knowledge. What both subtypes have in common is the relevance of the source of the information contained in a proposition. In the case of evidentials this source is characterized as different from the speaker. In the case of subjective modality the speaker is the source. This source-revealing character of subjective modality is reflected in one of the differences between subjectively and objectively modalized sentences, as illustrated in (25):

- (25) a A: It is possible that it will rain tomorrow
 B: Who says so?
 b A: Possibly it will rain tomorrow
 B:*Who says so?

Questioning the source of the information contained in sentence (25b) is clearly out of place, as the modal adverb indicates that the speaker is expressing his

personal opinion. The different subdistinctions to be made within the epistemological modality type are:

(26) EPISTEMOLOGICAL MODALITY

<i>Source</i>	<i>Modality</i>		
Speaker	Subjective	Epistemic	Certainty Probability Possibility Wishing, Hoping
		Volitional	
Evidence	Inferential		
3d person	Quotative		
Experience	Experiential		

The following examples are from Hidatsa, a language making extensive use of elements expressing epistemological modality:

Hidatsa (Siouan, Matthews 1964)

- (27) a Wacéo úixi a áciwi ski
 man antelope he track Certain
 'The man sure tracked an antelope'
 b Wío a ríiti rahe
 womanshe hungry Quotative
 'I've been told that the woman is hungry'

Distinguishing between two different types of modality again implies that both can be specified independently of one another. First, consider the lexical expression of both modalities in the English example (28):

- (28) It is certainly possible that John is ill

The subjective modal adverb expresses almost the opposite of the objective modal adjective. Yet there is nothing wrong with this sentence. The point is, as Lyons (1977:49) puts it, that 'logical probability can be defined, and measured, as a property of some system of propositions in abstraction from the beliefs of the users of that system' (Lyons 1977:49). For an inflectional realization of both categories consider the Turkish example (29):

Turkish (Altaic, Lewis 1967:127)

- (29) Gel-me-meli-ymiş-siniz
 come-Neg-Nec-Inf-2pl
 'It seems you ought not to come'

Here the subjective inferential follows the objective necessitative, thus reflecting the ordering assumed for predication and proposition operators. This sentence can therefore be represented as in (30):

- (30) (Inf. X_I: [(Nec. e_i: [Neg. gel-V (dmx_i: p2 (x_i))] (e_i))] (X_I))

2.2.2. Illocutionary operators

Two of the strategies in which illocutionary operators can be used are *mitigation* and *reinforcement* (see Haverkate 1979). The general function of mitigation is to reduce the force of a speech act. The goals of mitigation can be more specific: to prevent loss of face, be polite, leave room for the addressee to refuse or disagree, make the addressee feel comfortable, etc. The general function of reinforcement is to impose the speech act more strongly upon the addressee. The goals of reinforcement are again more diverse: to convince the addressee, express impatience, show superiority, etc.

The main reason to distinguish between proposition operators and illocutionary operators is that whereas the former are largely restricted to declarative sentences, i.e. operate inside the illocutionary layer, the latter can be applied to sentences with all kinds of basic illocutions, i.e. operate outside the illocutionary layer. The sentences in (31) show the general applicability of the reinforcing use of the Spanish subordinator *que*, those in (32) the general applicability of the mitigating particle *a/ya* in Mandarin Chinese:

Spanish (Indo-Hittite, Hengeveld 1987a)

- (31) a ¡Que no me gusta nada esa película!
 that not me please.Pres.Ind.3sg nothing that movie
 'I don't like that movie at all!'
 b ¡Que no te marches mañana!
 that not yourself leave.Pres.Subj.2sg tomorrow
 'Don't you leave tomorrow!'

- c iQuesi vienes mañana!
 that whether come.Pres.Ind.2sg tomorrow
 'Are you coming tomorrow?!'

Mandarin Chinese (Sino-Tibetan, Li and Thompson 1981)

- (32) a Wo bing mei zuo-cuo a/ya
 I on.the.contrary not do-wrongMit
 'On the contrary, I didn't do wrong'
 b Chi-fan a/ya
 eat-food Mit
 'Eat, OK?!'
 c ni xiang bu xiang ta a/ya?
 You think not think he Mit
 'Do you miss him?'

It is difficult to give a proper translation of the Mandarin examples. In general, the mitigating particle reduces the forcefulness of the speech act. Thus (32a) is 'less belligerent', (32b) 'much more friendly', and (32c) 'much softer' than their non-mitigated counterparts (Li and Thompson 1981: ch.7.5).

2.3. Some hypotheses

The ordering and classification of operators proposed here leads to the formulation of a number of hypothetical rules. All of these rules have a provisional character and cannot be fully investigated here. Nevertheless they somehow follow from the model proposed here and present promising guidelines for future research.

Rule 1 seems to be compatible with the results of Bybee (1985)⁷ and Foley and Van Valin (1984), which inspired its present formulation.

(33) RULE 1

The preferred order of operators is p4 p3 p2 p1 Pred β
 or Pred β p1 p2 p3 p4

7. Bybee's results are not directly applicable to the model used here as she investigated the expression of three categories, Tense, Mood, and Aspect without further subdivisions being made. It seems, however, that even some of the exceptions to the preferred orders which she found (Pred A T M or M T A Pred) could be explained within the model proposed here.

I have not been able to find an example from any language in which all four categories are present in one sentence. The order, however, holds for subsets of operators too. Consider, for instance, the following examples from Hidatsa, and Diegueño:

Hidatsa (Siouan, Matthews 1964)

- (34) a Wío i hírawe ki ksa c Pred β p1 p2 p3
 womanshe sleep Ingr Iter Believe
 'The woman fell asleep again and again'
 b Wírai ápáari ki stao wareac Pred β p1 p2 p3
 tree it grow Ingr Rempast Quotative
 'They say the tree began to grow a long time ago'

Diegueño (Yuman, Gorbet 1976)

- (35) W-a:-m-x-kx Pred β p2 p3
 3sg-go-away-Irr-Inferential
 'It must be that he will go'

The West Greenlandic examples given in (36) further illustrate the ordering of illocutionary and proposition operators relative to the indicator of the basic illocution:

West Greenlandic (Inuit, Fortescue 1984)

- (36) a Qama-junnarsi-vuq (p3 ILL)
 be.out.hunting.seals-Mood-3s.Indic
 'He's probably outside hunting seals'
 b Aki-nngil-aanga luunniit (ILL p4)
 reply-Neg-3s.1s.Indic emphatic
 'He didn't even reply to me!'

Whereas in (36a) the subjective modal affix *junnarsi* precedes the Indicative, which marks declarative sentences, the emphatic particle *luunniit* follows it in (36b), thus reflecting the differences in scope between the two categories of operators.

(37) RULE 2

Diachronic developments in the field of operators tend to follow the direction p1 > p2 > p3 > p4

Again the hypothesis seems to be compatible with the data in Bybee (1985) and those in Foley and Van Valin (1984).

(38) RULE 3

Operators of the class p_n may impose restrictions on the selection of operators of the class p_{n-1} .

In other words, operators may impose selection restrictions on the next operators down and these are the only restrictions possible. If proven to be correct, this generalization considerably reduces the set of possible formulations of operator combinations. The following series may illustrate how the rule works:

- (39) a $p_4 > p_3$ *Mitigation* of a declarative sentence disallows *strong commitment* with respect to the truth of the proposition it contains.
 b $p_3 > p_2$ *Desiderative mood* requires that the situation referred to be non-actual.
 c $p_2 > p_1$ *Objective epistemic mood* requires that a phasal aspect operator be applied if the SoA's designated by a predication are non-stative and non-controlled.

The first restriction is exemplified by:

Spanish (Indo-European)

- (40) a Seguramente es/*sea posible
 certainly be.3sg.Ind/Subj possible
 'Certainly it's possible'
 b Quizás es/sea posible
 maybe be.3sg.Ind/Subj possible
 'It may/might be possible'

Mitigation is expressed in Spanish by means of the subjunctive. Mitigation requires the speaker to be less than fully committed to the truth of the proposition, hence the ungrammaticality of the use of the version of (40a) in which the subjunctive is combined with the modal adverb *seguramente*.

The latter two restrictions can be demonstrated by means of the sentences in (41):

- (41) a I wish I were travelling in France
 b *I wish I am travelling in France
 c *I wish I travelled in France⁸

Although *wish* cannot exactly be said to be the expression of an operator, these sentence may serve to illustrate the following two steps: (i) *Wish* requires the situation referred to to be non-actual, hence the ungrammaticality of (41b); (ii) evaluating a situation to be non-actual in an epistemic sense generally requires the SoA's to be non-dynamic, hence the ungrammaticality of (41c). Goossens (1985), following Steedman (1977), notes that dynamic SoA's provided with a Progr, Perf or Hab operator count as non-dynamic SoA's (see 2.2.1). Thus the restrictions illustrated by the ungrammaticality of (41b-c) can be stated as in (42):

- (42) DES > NON-ACT > PROGR, PERF, HAB / [-dyn]

The third restriction can be illustrated separately by the following Turkish examples:

Turkish (Altaic, Lewis 1967)

- (43) a Selimiye camisini gör-meli-sin
 Selimiye mosque see-Nec-2sg
 'You must see the Selimiye mosque'
 b Sen-i gör-müş ol-malı
 you-Acc see-Res be-Nec
 'He must have seen you'

Example (43a) has a deontic interpretation, whereas (43b), in which the resultative morpheme is added to the verbal base, has an epistemic interpretation.

From rule 3 we may deduce:

- (44) RULE 4
 Operators are specified most economically in the order
 p4 > p3 > p2 > p1

8. Example (43c) is not ungrammatical under a habitual interpretation, as in the sentence (Lachlan Mackenzie, p.c.) *I wish I travelled* (for instance as a salesman) *in France and not* (as I actually do) *in Finland*. For an explanation see below.

3. Subordinate constructions

Assuming the validity of the layered model of the clause and the position of operators within that model, the question arises what the implications of the model are for the treatment of subordinate constructions. As in the case of operators, processes at term level are not dealt with here. By a *subordinate construction* I understand a construction that for its occurrence depends on another. The word *construction* is used here as a cover term ranging over predications, propositions, and clauses. It is the distinction between these three types of construction that leads to the first question to be asked with respect to complex constructions: should subordinate constructions be classified as predications, as propositions or as clauses? To put the same question in other words: what is the internal structure of subordinate constructions? Section 3.1 tries to answer this question with respect to constructions occupying an argument position. Section 3.2 is complementary to section 3.1, in that it is concerned with what I provisionally call the 'external structure' of embedded constructions, in particular with respect to satellites. Here the main question is to what layer of the clause satellites should be attached. Section 3.3, finally, looks at secondary predication.

3.1. Complement constructions

Assuming that arguments may refer to different kinds of entities, the following hypothesis seems to follow from the approach presented so far:

(45) **RULE 5**

Subordinate constructions can be classified according to the highest layer they contain.

This generalization should be understood in the following way. Within a narrated event reference can be made to speech events other than the one executed, propositions other than the one put forward for consideration, and narrated events other than the one referred to in the matrix clause. So, by peeling off layers from the general model for the simple clause, one encounters all types of subordinate construction. This means that:

- (i) A subordinate construction cannot contain a layer of a certain level without at the same time containing all subsequent layers;

- (ii) The operators associated with the layers which a subordinate construction contains can be expressed within that subordinate construction.

The matrix predicate determines what kind of construction it may embed. The examples given in (46) illustrate these points:

- (46) $E_I: p_4ILL (p_3X_I: [proposition] (X_I)) (E_I)$
-
- a $(p_2e_i: [p_1SayV (x_i)_{Ag} (E_J: [p_4ILL (p_3X_J: [etc.] (X_J))] (E_J))_{Go}] (e_i))$
- b $(p_2e_i: [p_1SayV (x_i)_{Ag} (p_4ILL (p_3X_J: [etc.] (X_J)))_{Go}] (e_i))$
- c $(p_2e_i: [p_1KnowV (x_i)_{\emptyset} (p_3X_J: [p_2e_j: [etc.] (e_j)]) (X_J))_{Go}] (e_i))^9$
- d $(p_2e_i: [p_1SeeV (x_i)_{\emptyset} (p_2e_j: [etc.] (e_j))_{Go}] (e_i))$

The representation given in (46a) is intended to capture direct speech reports. It is clear that all kinds of distinctions and modifications made by the original speaker can be repeated. The interesting thing about direct speech reports is that they involve a shift in the deictic centre, and this is precisely what the presence of the *E* variable accounts for.¹⁰

The representation in (46b) is intended to capture indirect speech reports. Unlike direct speech reports, these do not involve a deictic centre shift. However, it is generally possible to give an indication of the basic illocution of the reported speech act, as in the complements of English *tell* and *ask* (see Dik in prep.):

- (47) a He told me that he would come
b He told me to come
- (48) a He asked me whether I would go
b He asked me to go

The different forms of the complements in (47)-(48) indicate that the reported speech acts had the basic illocutions declarative and imperative, and interrogative and imperative respectively. Furthermore, it is sometimes possible to apply an

9. It would probably be more correct to represent (46b) and (46c) as two variants of propositional embedding, the only difference being that in (46b) the first restrictor is an abstract illocutionary frame.

10. This representation does not capture all instances of direct speech reports, nor is it intended to capture free indirect speech reports.

illocutionary operator in the subordinate clause, as illustrated by the examples from Jacaltec given in (49):

Jacaltec (Mayan, Craig 1977)

- (49) a Xal naj tato chuluj naj presidente
 said he that will.come the president
 'He said that the president would come'
 b Xal naj chubil chuluj naj presidente
 said he that will.come the president
 'He said that the president will come'

The complementizer *tato* in (49a) indicates that the actual speaker considers the original speaker unreliable, whereas the complementizer *chubil* in (49b) indicates that the actual speaker considers the original speaker reliable. Note that it is the actual speaker who expresses his reservation with respect to the embedded speech act in (49a).

The representation in (46c) indicates that cognitive predicates embed propositions, not predications. One therefore expects the possibility of applying proposition operators to the complements of cognitive predicates. That this is in fact possible can be illustrated by the English examples in (50):

- (50) a He didn't know that John would come
 b He didn't know whether John would come

The complementizer *that* in (50a) indicates that the speaker considers John's coming to be a fact, whereas the complementizer *whether* in (50b) does not commit the speaker to the truth of the embedded proposition. Again the interpretation of the operators should be related to the actual speaker, not to the subject of the matrix clause.

The representation in (46d), finally, is intended to show that verbs like *see* embed predications, not propositions. The embedded predication can be specified for tense and aspect, but not for propositional attitude. This is not surprising, since we can witness situations, but cannot witness propositions.

I have restricted myself in (46) to verbal predicates, but comparable examples could be given for adjectival and nominal predicates. Adjectives like *true* and

undeniable have propositional complements, adjectives like *certain* and *regrettable* have predicational complements. Nouns like *fact* have a propositional complement, nouns like *possibility* have a predicational complement. These differences between predicates should be represented in the lexicon, for instance in the following way:

- | | | |
|------|--|--|
| (51) | SayV (x ₁) _{Ag} (E ₁)Go | SayV (x ₁) _{Ag} (X ₁ : DECL (X ₁)) ¹¹ |
| | KnowV (x ₁) _{Exp} (X ₁)Go | SeeV (x ₁) _{Exp} (e ₁)Go |
| | True _A (X ₁) _∅ | Possible _A (e ₁) _∅ |
| | Fact _N (X ₁) _∅ | Possibility _N (e ₁) _∅ |

This approach not only accounts for the fact that the operators to be expressed in a complement are determined by the type of that complement, but also provides the means to account for differences in the form and behaviour of complements. The former differences are illustrated in the following examples from Nama. Most subordinate constructions in Nama take the form of a nominalization, as in:

Nama Hottentot (Khoisan, Hagman 1974)

- (52) Tííta //naáti kè #ái hàà 'íí-s
 I that.way Rempast think Pf be-Nom
 'my having thought that way'

However, complements may take two other forms. Direct quotation is achieved by repeating the original sentence and providing it with the quote particle *tí*:

- (53) 'Oo-s ke // 'íísà //xaápá kè míí /'úú-ta 'a tí
 then-3sg Decl she again Rempast say not.know-1sg be.Pres Quote
 'She said again: "I don't know"'

Indirect quotation and other forms of propositional complementation may take the form illustrated in (54)-(55), containing the complementizer *!xáísà*.

- (54) // 'ííp ke 'am'a-se kèrè #om /'aé//amsà xuú-kxm /xíí
 he Decl true-Adv Rempast believe Windhoek from-1du come
 hàà !xáísà
 Pf that
 'He really believed that we had come from Windhoek'

11. See note (9).

- (55) !úu-ta nĩ !xáis ke 'a 'am'a
 go-1sg Fut that Decl be.Pres true
 'It's true that I will go'

In terms of the present analysis, Nama has specialized forms for E-complementation and X-complementation.

With respect to the behaviour of complements the differences between *action* and *fact* nominalizations are illustrative¹². Sentence (56) is 'structurally ambiguous between a "factive" sense and a "manner" sense'. It can mean 'either that the speaker dislikes *the fact that John drives* or that the speaker dislikes *the way in which John drives*' (Katz and Postal (1964:123f)).

- (56) I dislike John's driving

Specification of the goal and manner of John's driving leads to (57) under the first and to (58) under the second interpretation:

- (57) I dislike John's carelessly driving the car
 (58) I dislike John's careless driving of the car

The realizations of the goal and manner arguments in (57)-(58) are interrelated, as can be derived from:

- (59) *I dislike John's carelessly driving of the car
 (60) *I dislike John's careless driving the car

In terms of the present analysis, English treats X-nominalizations and e-nominalizations differently.

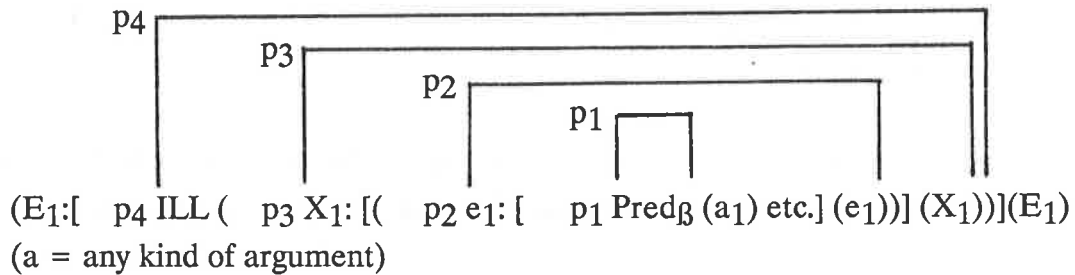
With respect to the expression of operators in subordinate constructions the rule given in (61) seems to be relevant:

- (61) RULE 6
 Operators with higher scope may affect the expression of operators with lower scope.

12. I am indebted to Simon Dik for drawing my attention to the facts to follow.

The scope of operators can be represented as in (62):

(62) THE SCOPE OF OPERATORS



The representation in (62) shows that subordinate constructions occupying an argument position fall within the scope of most matrix clause operators. Two examples may serve to illustrate the effects this may have:

(63) *Spanish* (Indo European, Hengeveld 1987b)

- a Quizás es seguro que la ceguera puede ser vencida
 maybe is.Ind certain that the blindness can.Ind be cured
- b Quizás sea seguro que la ceguera pueda ser vencida
 maybe is.Subj certain that the blindness can.Subj be cured
 'Maybe it's certain that blindness can be cured'

Sentences (63a-b) are a non-mitigated and mitigated version of a Spanish declarative sentence. Mitigation is expressed by means of the subjunctive, as in (63b). Although the modal adjective *seguro* normally requires the indicative in its complement, as in (63a), it takes a subjunctive complement in (63b). The higher scope operator mitigation thus affects all inflected forms in the clause.

A second example is given in (64):

(64) I knew you would come

This sentence can be represented as in (65):

(65) (Past e_i: [Know_V (x_i: p₁ (x_i))]_{Exp} (Cert. X_I: [(Fut. e_j: [Come_V (x_j: p₂ (x_j))] (e_j))] (X_I))Go] (e_i))

Here the future tense operator of the complement of *know* falls within the scope

of the past tense operator of the matrix clause. The result is a future in the past. That rule 6 is an optional rule can be demonstrated by means of (66):

Nama Hottentot (Khoisan, Hagman 1974)

(66) Sífkxm ke ké //nàú //’íp kò !úu !xáísà
 1du Decl Rempast hear he Recpast go that
 ‘We heard that he had just gone’

Hagman (1974:257) remarks that in this example the recent past (*kò*) in the complement is ‘recent relative to the context, i.e., the matrix sentence’. This means that the content of what the subjects heard in a remote past is presented in the complement in the form in which it was perceived at that time.

3.2. Adverbial constructions

Satellites, like constructions occupying an argument position, can be classified according to their internal structure. Reasons, for instance, are third order entities, causes are second order entities (Lyons 1977:445), and beneficiaries are first order entities. This, however, is not the main subject of this section. The question here is rather how satellites should be represented within the clause model developed so far. For a more detailed analysis the reader is referred to Dik, Hengeveld, Vester, and Vet (in prep.). I will concentrate on the interaction between satellites and operators in this paper. In 3.2.1. satellites are subdivided according to the layer at which they apply. Furthermore attention is given to the differences between restrictive (3.2.2) and non-restrictive (3.2.3.) adverbials (see Hannay and Vester (1987)).

3.2.1. Layers and satellites

The functions to be fulfilled by satellites at the different layers are not very different from the ones postulated for operators. Stating that a certain State of Affairs took place *yesterday* is applying a lexical strategy which is comparable to the application of the *Past* operator within a grammatical strategy. The definitions given here for satellites at the different layers of the clause are therefore reminiscent of the definitions given for operators in section 2.1:

(67) SATELLITES (DEFINITIONS)

- (i) *Predicate satellites* capture the lexical means which specify additional properties of the set of SoA's designated by a bare predication.
- (ii) *Predication satellites* capture the lexical means which locate the SoA's designated by a predication in a real or imaginary world and thus restrict the set of potential referents of the predication to the external situation(s) the speaker has in mind.
- (iii) *Proposition satellites* capture the lexical means through which the speaker specifies his attitude towards the proposition he puts forward for consideration.
- (iv) *Illocutionary satellites* (Dik in prep.) capture the lexical means through which the speaker modifies the force of the basic illocution of a linguistic expression so as to make it fit his communicative strategy.

The main difference between satellites at the interpersonal level (proposition satellites and illocutionary satellites) and satellites at the representational level (predicate satellites and predication satellites) is that the former are speaker-, addressee- or speech act oriented, whereas the latter are argument- or SoA-oriented.

3.2.1. Restrictive adverbials

Satellites have generally been represented in FG as in:

(68) $\text{Pred}_\beta (\text{arg}_1) \dots (\text{arg}_n) (\text{sat}_1) \dots (\text{sat}_n)$

In (68) satellites are represented as optional arguments of the predicate. This representation captures in fact the definition given for *predicate satellites*, the main function of which is to give additional information on the internal structure of the SoA's under consideration.

Vet (1986) suggests an approach in which satellites specifying *time* and *location* are represented as secondary restrictors of the e-variable, as in:

(69) I saw him yesterday

(70) (Past. e_i: [I see him] (e_j): yesterday (e_j))

- (71) I saw him in the garden
 (72) (Past e_j : [I see him] (e_j): [(x_i : garden (x_i))_{Loc}] (e_j))

In this approach satellites are represented as optional secondary restrictors of the event variable e . This representation captures the definition given for *predication satellites*, the main function of which is to specify the setting within which a SoA occurs (occurred, will occur).

Vet's analysis may be extended to capture restrictive adverbials at the propositional level, although truly restrictive adverbials seem to be exceptional there. An example could be sentence (73), in which *John* is presented as the source (So) of the proposition presented by the speaker. It might be represented as in (74):

- (73) According to John there's a bull in the field
 (74) (X_I : [There's a bull in the field] (X_I): [(x_i : John (x_i))_{So}] (X_I))

Within this approach restrictive adverbials are within the scope of the operators associated with the level they restrict. Sentence (75), containing a restrictive predicational satellite, and its schematical representation (76) may illustrate this point:

Nama Hottentot (Khoisan, Hagman 1974)

- (75) !'áas 'ái-kxm skóla ra //xáa//aa hí'a-kxm ke #hoasà
 town in-1pl school Impf teaching while-1pl Decl story
 kè //nàú
 Rempast hear

'While we were teaching school in the town we heard the story'

- (76) (Rempast e_j : [predication] (e_j): [(Pres. e_j : [predication] (e_j))_{Temp}] (e_j))

In (76) the second event falls within the scope of the Past operator of the first event. Due to a sequence of tenses rule the temporal construction is in the past tense in the English translation, whereas in the Nama original the absence of a tense morpheme indicates present time reference.

3.2.2. Non-restrictive adverbials

For non-restrictive adverbial clauses I follow the proposal made by Hannay and Vester (1987), although it has to be adapted in such a way that it applies to all

the different layers proposed here. Hannay and Vester suggest that non-restrictive clauses be analyzed in the following way:

(77) Core predication (predication)SemPragmSynt

The subordinated predication is seen here as a kind of argument of the core predication and can be assigned 'predicational' semantic, syntactic and pragmatic functions. The layered approach suggests a subcategorization of non-restrictive adverbials according to the level at which they occur. In general terms, the approach to be adopted in this section can be summarized as follows:

(78) (a₁), (a₂)SemPragmSynt

where a represents any of the variables e, X, or E. The schema in (78) indicates that two constructions *of the same level* can be brought into a non-restrictive relation, where one of the two can be seen as subordinate to the other, and its semantic, pragmatic and/or syntactic functions indicate in what way it is subordinated. I restrict myself to the semantic functions of non-restrictive adverbial constructions in this section. The restriction that the two constructions be of the same level is in fact the restriction imposed on all kinds of clause linkage by Foley and Van Valin (1984:188). Their approach runs into trouble where it has to deal with complementation (*ibid.* 251f), but works fine for the constructions dealt with here. The possible non-restrictive combinations of constructions in the present approach can be listed as in (79)-(81):

(79) (e₁), (e₂)Sem predication combining

(80) (X), (X₂)Sem proposition combining

(81) (E), (E₂)Sem clause combining¹³

Examples of the intended constructions are:

(82) Being ill, John went home

(83) He is probably home, because his mother will visit him

(84) Watch out, because there's a bull in the field

13. The possibility of combining clauses shows that a fifth satellite type is to be distinguished: *clause satellites* capture the lexical means through which the speaker locates the speech-act designated by a clause within the context of discourse and thus restricts the set of potential perlocutions of the clause.

In all these sentences there is a relation of *explanation* between the two constructions. In (82) one state of affairs is presented as the circumstance (Circ) within which another took place. In (83) one fact is presented as supporting evidence (Evid) for another fact. In (84) one speech act is presented as the motivation (Mot) for another speech act. Sentences (82)-(84) can be represented as in (85)-(87):

- (85) (E_I: [DECL (X_I: [(Past e_j: [John go home] (e_j)) , (Sim. e_j: [John be ill] (e_j))Circ] (X_I))] (E_I))
 (86) (E_I: [DECL (Infer. X_I: [He is home] (X_I)) , (X_J: [His mother will visit him] (X_J))Evid] (E_I))
 (87) (E_I: [IMP (X_I: [Addressee watch out] (X_I))] (E_I)) , (E_J: [DECL (X_J: [There's a bull in the field] (X_J)) (E_J))Mot

The most important aspect of these representations is that two constructions in a non-restrictive relation can be subordinate to shared higher operators, a phenomenon which Foley and Van Valin, following Olson (1981), labeled *cosubordination*. The effects of this approach can be illustrated by means of the following examples.

The coordinated *predications* in (82) cannot carry their own proposition operators (p3):

- (88) *Possibly being ill, John seems to have gone home

Both can, however, carry their own predication operators (p2):

- (89) Having been ill, John will go home

The coordinated *propositions* in (83) cannot carry their own illocutionary operators (p4):

- (90) *He is home!, because he might expect a visit from his mother

But they can each carry their own proposition operator (p3):

- (91) He is probably home, because his mother may visit him

The coordinated *clauses* in (85) can carry their own illocutionary operators (p4):

(92) You better watch out, because there might be a bull in the field!

A final look at Nama shows an important difference between restrictive and non-restrictive satellites with respect to the expression of operators. In (75), discussed earlier, the restrictive temporal satellite is within the scope of the tense operator of the matrix predication, and the occurrence of the SoA expressed within the satellite predication is interpreted relative to the occurrence of the SoA expressed within the matrix predication. In (93), with its rough representation (94), the non-restrictive temporal satellite is not within the scope of the tense operator of the matrix predication and therefore has to be interpreted relative to the moment of speaking:

Nama Hottentot (Khoisan, Hagman 1974)

(93) Tsíí /'aé//ams 'ái-ta kè síí 'oo-p ke tíí
 and Windhoek Loc-1sg Rempast arrive Temp-3sg Decl Poss1sg
 /hòopà kè !'áute hàà.'íí stásis tàpa
 friend Rempast wait Pf station Loc
 'And when I arrived in Windhoek, my friend had been waiting for me at the station'

(94) (Rempast e_i: [predication] (e_i)), (Rempast e_j: [predication] (e_j))Temp

3.3. Secondary predication

To complete the picture of subordinate constructions some final remarks should be made on the status of free secondary predication¹⁴, as illustrated in:

(95) I saw him walking down the street

Here *walking down the street* is an optionally added secondary predication. Following Vester (1983) constructions like (95) may be represented schematically as in (96), where secondary predication is taken quite literally:

(96) (e_j: [predication] (e_i): [predication] (e_j))

14. The term 'secondary predication' was introduced into Functional Grammar by Casper de Groot in a talk at the Second International Conference on Functional Grammar, Antwerp, August 1986.

This representation predicts that the two predications cannot be specified independently for tense, but can be specified for aspect. That this is indeed the case can be illustrated by means of the following sentences, taken from Comrie (1976:40):

- (97) I saw the accused stab the victim
 (98) I saw the accused stabbing the victim

In the perfective variant (97) the use of the infinitive indicates that I witnessed the stabbing from beginning to end, whereas in the imperfective (98) the use of the gerund indicates that I witnessed the stabbing, but not necessarily from beginning to end. Now compare (98) with (99):

- (99) I saw that the accused was stabbing the victim

The representations of (98) and (99) are given in (100)-(101):

- (100) (Past e_j : [see \vee (d1 x_j : p1 (x_j)) \emptyset (d1 x_j : accused (x_j)) G_0] (e_j): [Impf. stab \vee (x_j) A_g (d1 x_k : victim (x_k)) G_0] (e_j))
 (101) (Past e_j : [see \vee (d1 x_j : p1 (x_j)) \emptyset (e_j : [Impf. stab \vee (d1 x_j : accused (x_j)) A_g (d1 x_k : victim (x_k)) G_0] (e_j)) G_0] (e_j))

Here the importance of the distinction between *event* and *state of affairs* becomes visible: in (98) we are dealing with one complex event, composed of two different states of affairs coinciding in time and place; in (99) we are dealing with two different events, each composed of one state of affairs, one embedded within the other, but nevertheless independently specifiable for tense (relative to the tense of the main predication):

- (102) I saw that the accused had been stabbing the victim

4. Conclusion

By way of conclusion I summarize the main points that I have argued for:

- (i) Every main clause can be analyzed at two levels: the representational and the interpersonal level;
 (ii) Each level can be analyzed as containing several layers;

- (iii) Each layer has its own associated operators;
- (iv) Every subordinate construction can be classified according to the highest layer it contains;
- (v) Every adverbial construction can in addition be classified according to the layer to which it attaches.

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