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1987
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Clause structure and modality in Functional Grammar

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*0. Introduction**

The main issue of this paper is the treatment of modality in Functional Grammar. In section 2 I distinguish three different types of modality and discuss the different modal distinctions to be made within each of these types. As follows from their definitions these modality types impose restrictions on their possible expressions, which are discussed in terms of differences in scope. In order to be able to account for these scope differences a number of different layers should be distinguished within the clause. Therefore, before turning my attention to modality, I propose a model for the structure of the clause in Functional Grammar in section 1. Examples from Spanish are used to illustrate most of the points made in this paper.

1. Clause structure

Recently Dik (in prep.) has proposed to provide predications with one of a set of illocutionary operators representing basic illocutions of linguistic expressions, such as, for instance, DECL(declarative), INT(errogative) and IMP(erative). Every utterance may thus be analyzed according to the following schema:

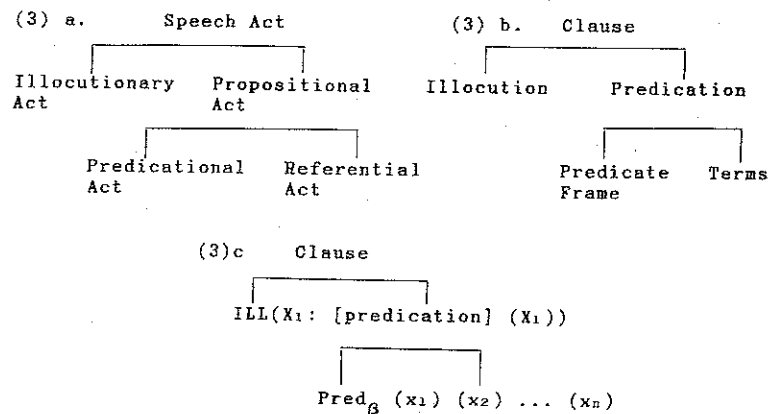
(1) ILL(predication)

Following Dik I use the term 'clause' for any combination of a predication with an illocution, as represented in (1). The illocutionary operator triggers the expression rules which regulate the formal properties of sentence types, such as word order and intonation, while at the same providing the means to link syntactic description to a wider theory of verbal interaction. As an alternative to this approach, I would like to use illocutionary frames, instead of operators, to represent the basic illocutions of linguistic expressions. Insertion of a predication into an illocu-

tionary frame results in structures like those given in (2):

- (2) DECL(X₁: [predication] (X₁))
 INT(X₁: [predication] (X₁))
 IMP(X₁: [predication] (X₁))

A quick look at speech act theory may show the general background of this approach. Searle (1969) analyzes the speech act as requiring several subacts of a speaker, as represented in (3)a. The formal correlates of the four subacts are given in (3)b, and combined in (3)c, where two different levels are handled in a comparable way: at the lowest level the narrated event is structured on the basis of a predicate frame; at the highest level the speech event is structured on the basis of an illocutionary frame.



Note that this framing analysis may be further expanded by regarding clauses as the basic units to be inserted into, for instance, discourse frames. An illocutionary frame should be regarded as expressed by the total of illocutionary force indicating devices of a clause, in particular the formal properties of the sentence type. Clause formation involves two main steps: term insertion into predicate frames, resulting in predications; and predication insertion into illocutionary frames, resulting in clauses.

The (X)-variable introduced in the illocutionary frames is a

content variable. A predication in (X) represents a third order entity: the content of an utterance. The introduction of this variable makes it possible to distinguish between the two functions of predications: designating states of affairs at the level of the narrated event; and representing contents at the level of the speech event.¹

There are at least two parts of grammar in which a separate content variable proves to be useful. Firstly, anaphoric reference may be made to full content phrases, as exemplified in (4):

- (4) A: The weather will be nice tomorrow
 B: Do you think so?

Anaphoric reference to full content phrases is expressed in English by means of *so*, as in (4)B. The interchange in (4) may be represented as in (5):

- (5) A: DECL(X₁: [Fut Nice_A (x₁: the weather (x₁))_β
 (x₂: tomorrow (x₂))_{TEMP}] (X₁))
 B: INT(X₂: [Pres Think_v (x: p₂ (x))_{EXP} (AX₁)_{SO}] (X₂))

Secondly, the difference between *de re* and *de dicto* belief shows the necessity of the distinction between the two uses of predications. In Spanish, the difference between *de re* and *de dicto* readings of belief predicates is formally reflected in negative contexts, as shown in (6):

- (6) a. No creo que Juan está enfermo
 not believe that Juan is-Ind ill
 'I don't believe that Juan is ill'
 b. No creo que Juan esté enfermo
 not believe that Juan is-Subj ill
 'I don't believe that Juan is ill'

The interpretation of (6)a, in which the indicative is used, is that the speaker does not believe a proposition which has been brought forward in the preceding conversation, whereas the interpretation of (6)b, in which the subjunctive is used, is that the speaker does not believe that a certain state of affairs holds in reality. The difference between these two sentences is formalized

in (7), where the embedded predication in (6)a is represented as restricting (X), the content variable, whereas the embedded predication in (6)b is represented as restricting (x), which is used here provisionally as a variable for first and second² order entities:

- (7) a. DECL(X₁: [I don't believe (X₁: [Juan is ill](X₂))_{so}](X₁))
 b. DECL(X₁: [I don't believe (x₁: [Juan is ill](x₁))_{so}](X₁))

The clause model introduced here allows for the application of operators in four different layers, as shown in (8):

- (8) ⁴ Oper. ILL(³ Oper. X₁: [² Oper. Pred_p (¹ Oper. x₁) etc.] (X₁))

1. Term operators
2. Predicate operators
3. Predication operators
4. Illocutionary operators

In sections 2 and 3 the difference between predicate operators and predication operators is discussed in relation to modality, followed by some examples of the application of illocutionary operators in section 4.

2. Modality

The different notions generally subsumed under the heading 'modality' do not seem to represent a single and coherent semantic category. Rather than providing one definition of modality in general, I discuss three different types of modality, which may be defined as in (9):³

- (9) **INHERENT MODALITY:** All those linguistic means through which a speaker can characterize the relation between a participant in a state of affairs and the realization of that state of affairs
- OBJECTIVE MODALITY:** All those linguistic means through which a speaker can evaluate a state of affairs in terms of his knowledge
- EPISTEMOLOGICAL MODALITY:** All those linguistic means through which a speaker can express his commitment with regard to the truth of a proposition

All distinctions to be made within the inherent modality type are state of affairs internal, as follows from the definition given in (9), and will in general be expressed by means of a number of (derived) predicate frames.⁴ The main inherent modal distinctions, given in (10), are: ability; volition; and a number of instances of obligation and permission, namely those in which it is reported that some participant in a state of affairs is under the obligation or has received permission to perform in that state of affairs.

(10) INHERENT MODALITY

Ability (physical/acquired):	'Be able to'/'Know how to'
Volition	: 'Be willing to'
Obligation	: 'Have to'
Permission	: 'Be free to'

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 (11):

(11) 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 labels 'epistemic' and 'deontic' are generally used to cover the modal distinctions which depend on speaker's evaluation of a state of affairs in terms of (i) or (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 (12) can be established:

(12) OBJECTIVE MODALITY

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

It follows from the definition given for objective modality that elements giving expression to modal distinctions of this type should take a state of affairs as designated by a predication in their scope, as they represent the output of speaker's evaluation of that state of affairs in terms of his knowledge. Therefore objective modality can be expressed through predicate operators or embedding predicates only. Modal adjectives, for instance, always express objective modality.

Epistemological modality concerns speaker's expression of 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 (13):

- (13) 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?

Modal adverbs always express epistemological modality, as in (13)b. Questioning the source of the information contained in this sentence is clearly out of place, as the modal adverb indicates that it is the opinion of the speaker which is expressed here.⁵ The different subdistinctions to be made within the epistemological modality type (see Chung and Timberlake 1985:244) are:

(14) EPISTEMOLOGICAL MODALITY

Source	Modality		
Speaker	Subjective	Epistemic	Certainty (Strong comm.) Probability (Belief) Possibility (Weak comm.)
		Volitional	Wishing, Hoping etc.
Evidence	Inferential		
3d person	Quotative		
Experience	Experiential		

It follows from the discussion of epistemological modality that elements giving expression to subdistinctions of this modality type should take a predication in its content representing function in their scope.

The ways in which the three modality types may be expressed are summarized in (15):

(15) MODALITY TYPES AND THEIR EXPRESSION

Modality type	Representation	Expression	
		Lexical	Grammatical
Inherent	SoA	(Derived) predicates	---
Objective	Ks(SoA)	Embedding predicates	Predicate operators
Epistemological	Cs(predication)	Embedding predicates Adverbials	Predication operators

The representations given in (15) characterize inherent modality as state of affairs internal, objective modality as concerning speaker's evaluation of a state of affairs in terms of his knowledge (Ks), and epistemological modality as concerning speaker's expression of his commitment (Cs) with regard to the content of a predication. The latter two categories may be expressed through embedding predicates, although there is a difference in what they embed, as is shown in section 3.

3. Clause structure and modality

The different types of modality discussed here should be assigned a position in the clause structure presented in section 1. As inherent modality can only be expressed lexically, I restrict myself to objective and epistemological modality here. Given the characterization of these modality types in (15) they may be assigned the positions in (16):

(16) ILL(Epist.mod.X₁: [Obj.mod.Pred. (x₁) etc.] (X₁))

What is indicated here is that epistemological modality differs from objective modality in that it operates on content phrases or propositions. Propositions can be true, but cannot be real, whereas states of affairs can be real, but cannot be true (see Lyons 1977:445). The view that epistemological modality operates on content phrases is confirmed by the fact that this modality type is restricted to main clauses and to predications governed by a verb of speech or thought or a verb of cognition. In those cases in which both modality types are expressed through embedding predicates, the epistemological predicate governs an (X)-complement, whereas the objective predicate governs an (x)-complement. Consider the sentence given in (17), in which linguistic means are applied to express inherent, objective, and epistemological modality:

(17) It seems that it is possible that he can cure blindness

In a language in which both epistemological and objective modality are expressed through grammatical means, this sentence would be represented as in (18):

(18) DECL(Inf.X₁: [PresPoss Canv Curev:inf (x₁: p3 (x₁))_{AG}
(x₂: blindness (x₂)_{GO}] (X₁))

In English both modalities are expressed through lexical means and

the representation of (17) is as in (19):

(19) DECL(X₁: [Seemv (X₂: [Pres Possible_A (x₁: [Canv
Curev:inf (x₂: p3 (x₂))_{AG} (x₃: blindness (x₃)_{GO}] (x₁))_S]
(X₂)]_S] (X₁))

Two differences in the syntactic behaviour of objectively and epistemologically modalized sentences in Spanish support the analysis of epistemological modality as a modality that should be assigned a position outside the predication proper, as opposed to objective modality, which has been assigned a position inside the predication.

Firstly, predicates expressing epistemological modality do not allow clitic promotion (see Aissen and Perlmutter 1976; Luján 1979), contrary to verbs expressing objective modality. Compare epistemological *parecer* 'seem' in (20) with objectively used *deber* 'must' in (21):

- (20) a. Parece saberlo poco
seems know-it little
'He seems to know little about it'.
b. *Lo parece saber poco
(21) a. Debe querer hacerlo bien
must want do-it well
'He must want to do it well'
b. Lo debe querer hacer bien
'He must want to do it well'

Secondly, the two groups of predicates behave differently with regard to negative raising (see Luján 1979; Rivero 1979). This difference may be illustrated by means of sentences (22)-(23), which contain the preposition *hasta* 'until'. This preposition requires a negative context, a condition which is apparently not fulfilled in (22)b:

- (22) a. Parece que no llega hasta las diez
seems that not arrive-Ind until the ten
'It seems that he will not arrive until ten'
b. *No parece que llega hasta las diez
'It doesn't seem that he will arrive until ten'

- (23) a. Es probable que no llegue hasta las diez
is probable that not arrive-Subj until the ten
'It is probable that he will not arrive until ten'
- b. No es probable que llegue hasta las diez
'It is not probable that he will arrive until ten'

An explanation for the ungrammaticality of (20)b and (22)b is that both the clitic and the negative element are part of the content with regard to which the speaker expresses his commitment. Raising of the clitic or of the negative element to a position outside the scope of the elements through which the speaker expresses his commitment leaves a gap in this content phrase. Therefore (22)b is ungrammatical for the same reason that the independent proposition (24) is:

- (24) *Llega hasta las diez

In both cases the requirement of a negative context is not fulfilled. The formal correlate of this restriction is that no element may pass the (X)-boundaries.⁸ (X) functions as an inseparable and closed unit. That it is the (X)-boundaries which condition this restriction is confirmed by the fact that *de dicto* belief complements behave in the same way. Compare the following examples with those given in (6):

- (25) a. *No creo que llega hasta las diez
not believe that arrive-Ind until the ten
- b. No creo que llegue hasta las diez
not believe that arrive-Subj until the ten
'I don't believe that he will arrive before ten'

The proposition rejected by the speaker in (25)a takes the ungrammatical form given in (24).

Further evidence for the correctness of the different positions assigned to the three modality types may be derived from the order in which elements expressing modal distinctions of the three types appear in linguistic expressions. The order given in (16) is confirmed by observations of Foley and Van Valin (1984) and is neatly reflected in Turkish. Consider the following example (G. van

Schaaik, p.c.):

- (26) Her müslüman Kur'an-i Kerim-i okuy-abil-meli-ymiş
every muslim Koran-Conn Holy-Acc read-able-Obl-Quot
'I've been told that every muslim should be able to read the Koran'

Inherent modality is expressed by means of a derived stem (*okuyabil-*), to which two affixes are attached, one indicating moral obligation (*-meli*), and one indicating that the speaker obtained the information from another person (*-miş*). The order given in (26) is the only possible one.⁷

The clause model proposed in section 1 thus provides the means to distinguish between predicate operators and predication operators and between the content representing and state of affairs designating functions of predications.

4. Illocutionary operators

In (8) one more operator position is provided, the leftmost. The operators to be applied in this positions were labeled 'illocutionary operators'. Spanish provides an example of the kind of distinctions to be expected here. In (27)-(30) examples are given of a number of Spanish sentences in which both the indicative and the subjunctive may be used:

- (27) Quizás vienen/vengan mañana
maybe come-Ind/come-Subj tomorrow
'They may/might come tomorrow'
- (28) Quiero/Quisiera que Usted le enseñe/
want-Ind/want-SubjPast that you him show-SubjPres/
enseñase su biblioteca
show-SubjPast your library
'I want/would like you to show him your library'
- (29) Usted debe/debiera enseñarle su biblioteca
you must-Ind/must-SubjPast show-him your library
'You must/should show him your library'
- (30) ¿Puede/Pudiera enseñarle su biblioteca?
can-Ind/can-SubjPast show-him your library
'Can/Could you show him your library?'

This alternating use of mood inflection in Spanish is restricted to

modalized predications. Through the use of the subjunctive the speaker expresses a higher degree of reservation, an effect comparable to the use of the past tense forms of the English modals. The sentences given in (27)-(30) are not just modalized sentences, but also represent a number of strategies to decrease the directness of a speech act: one of the functions of modalizing an utterance is realizing these strategies. In the light of this observation the use of the subjunctive in (27)-(30) can be interpreted as the application of a grammatical means to further mitigate the force of a speech act. This view implies that this use of the Spanish moods should be explained in terms of the rules that govern verbal interaction and the ways in which these rules are reflected in linguistic structure. By using the subjunctive in (27) the speaker leaves more room for the addressee to disagree with him or for himself to withdraw from a position taken. By using the subjunctive in (28)-(30) the speaker shows a higher degree of politeness and leaves more room for refusal. I will use the term 'mitigation' (see Haverkate 1979) for these different communicative strategies. Mitigating expressions should take the whole clause as representing the speech act in their scope, as in:

(31) Mit.ILL(X_1 : [predication] (X_1))

That mitigation takes the whole clause in its scope is reflected in Spanish in the fact that it affects all inflected forms in the predication, as for instance in (28). Parenthetical verbs may be classified as lexical mitigating expressions.

The counterpart of mitigation is reinforcement. Just as a speaker may wish to express a higher degree of reservation, he may wish to impose his speech act more strongly upon the addressee. The addition of the subordinator *que* in Spanish has a reinforcing effect, as in:

(32) ¡Que no me gusta nada esa película!
'I don't like that movie at all!'

The scope of the reinforcing expression *que* is reflected in its

initial position in the utterance. The performative use of speech act verbs may be classified as a lexical reinforcing strategy.

5. Conclusion

Summarizing, the positions given in (33) have been assigned to the different categories discussed:

(33) Reinf. ILL(^{Epist.} X_1 : [Obj. Pred_g(x_1) etc.] (X_1))
Mit. mod. mod. ↑
Inh.
mod.

Each layer distinguished in section 1 is thus provided with its own associated operators.

NOTES

- * Thanks are due to Johan van der Auwera, Simon Dik, Louis Goossens and Hotze Mulder for their comments on an earlier version of this paper.
- 1 Vet (1986) proposes the application of a state of affairs variable (e), which should not be identified with the content phrase variable introduced here.
- 2 A separate SoA-variable could be used for second order entities, such as the sentence variable (e) proposed in Vet (1986). In terms of the clause analysis presented here this variable would represent the narrated event.
- 3 The distinction between three different types of modality presented in this section has been inspired by Lyons' (1977:chs.16-17) analysis of modality. Definitions are partly based on Allwood et al. (1977), Chung and Timberlake (1985), Dik (in prep.) and Foley and Van Valin (1984). See also Goossens (1985a) for a proposal concerning the treatment of the English modals in FG.
- 4 Some Balkan languages express these distinctions through embedding predicates. The lack of an infinitive in these languages seems to force them to choose this alternative. Interestingly, however, the history of some of these languages shows that the infinitive was retained longest in the context of some inherent modal auxiliary (see Joseph 1983).
- 5 The crucial difference between objective and subjective epistemic modality is that the former is concerned with the reality of a SoA, whereas the latter is concerned with the

truth of a proposition.

- 6 Although at first sight subject raising seems to violate this restriction, it does not if it is regarded as the result of double syntactic function assignment, as proposed in Dik (1979).
- 7 Note that the hypothesized ordering of the different modality types in (18) should not be taken in an absolute sense. In some languages the operators are applied from left to right, whereas the inverse order holds in Turkish.