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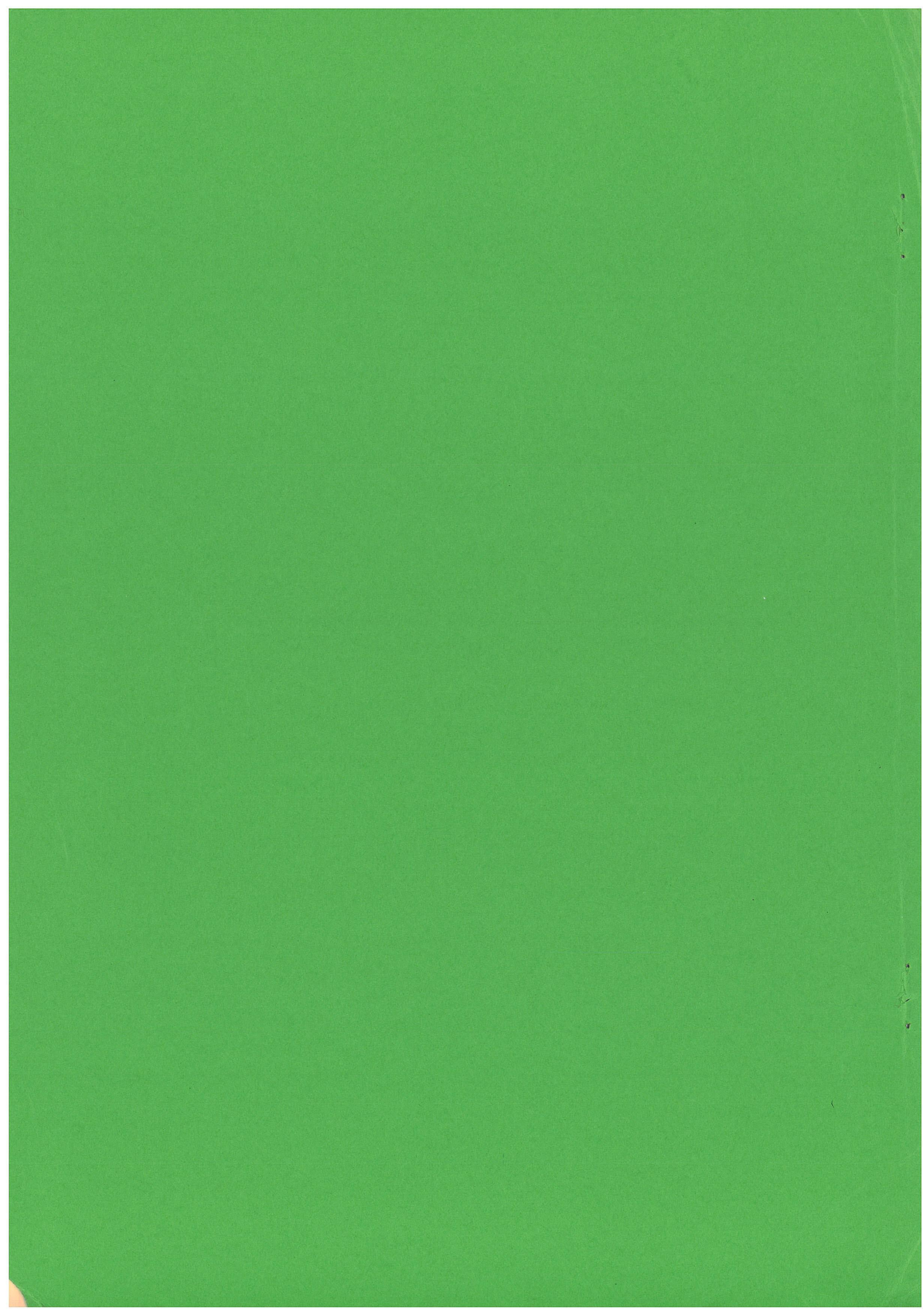
working papers in functional grammar

WPFG no. 21  
April 1987

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Negatives are not fond of travelling  
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NEGATIVES ARE NOT FOND OF TRAVELLING

A COGNITIVE-PRAGMATIC RECONSIDERATION OF NEGATIVE RAISING

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#### ACKNOWLEDGEMENTS

I am grateful to J.Van der Auwera, S.Gillis, L.Goossens, F.Platteau, G.De Schutter, and J.Verschueren for discussing the matter with me and/or for commenting on earlier drafts. Also thanks to M.Hannay and P.Kahrel for their comments as editors of the series. It is good to know that the mistakes in this paper are not necessarily obvious.

Antwerp, December 1986  
and April 1987



## 0. INTRODUCTION

In this paper I revisit some problems related to the phenomenon commonly called 'negative-raising' (NR), from the perspective of the theories of Functional Grammar (FG - Dik 1978) and Functional Procedural Grammar (FPG - De Schutter and Nuyts 1983, Nuyts 1985a). From the late sixties till the mid seventies NR attracted the attention of many linguists, but the efforts have not resulted in decisive arguments. Even at present it is not yet clear what direction an adequate approach should take, let alone what an integral account of the entire range of problems involved might look like. I do not pretend to be able to present such an integral account. Rather, I will try to sketch and motivate the central characteristics of the kind of analysis I consider to be appropriate, and to point out possible directions for solutions to various more specific problems involved. I will try to show that the current, unclear state of the art in NR-research is mainly due to a failure to distance oneself from the superficial appearance of the constructions involved and conceive of them in terms of their underlying functionality. Thus I take my analysis as a paradigm case to demonstrate that a consistently applied functional approach to language can force one into a consideration of rather abstract levels of representation not normally taken into account in linguistic models, and that, within the functional paradigm in linguistics, a syntactic model like FG is not sufficiently sophisticated, and will need an expansion and integration in the direction of a stronger and more encompassing theoretical model, such as FPG.

I take it for granted that the functional paradigm in linguistics is appropriate (Nuyts 1985b, 1987, in prep.). I will not be concerned with a confrontation of my analysis with a purely formal approach, such as would be presented in TG (cf. Horn and Bayer (1984:400-401) for a brief discussion). I assume basic acquaintance with the FG-framework. Concerning FPG, it is necessary to know that this model is intended to be a hypothesis about the psychological processes involved in a speaker's generation of discourse. It

essentially accepts the view on syntax present in FG. But since FPG is based on an integrative concept of linguistic theorizing (which among other things involves the view that a model of syntax on its own is insufficient and even inadequate to account for linguistic problems, even if they are of a structural nature), it also includes a complex system of deeper levels of representation and processing, and these are claimed to be essentially non-lexical (i.e. non-verbal) in nature. Moreover, FPG assumes that such pragmatic aspects of utterance generation as perspectivization and topicality/ focality should be handled at these deeper levels, too, and not post-lexically, as is claimed in FG. (I cannot discuss the psychological claims in FG and FPG here; cf. Nuyts (1985a, c, 1986) for my own point of view.)

In order to make it easier for the reader to follow my exposition I have listed those examples adduced in the course of the presentation which are frequently referred to later on in the text at the end of this paper. Concerning the use of intuitions for judging meaning relationships in this paper (from section 2 on), I always have verified my own opinion about the Dutch equivalents of the examples provided, by comparison with the judgements of a number of other native speakers of Dutch. Though there never was unanimity, the results largely correspond to what I will report below.



## 1. MAJOR OBSERVATIONS AND PROPOSED SOLUTIONS CONCERNING NR

The basic observation underlying the conception of 'NR' in the literature (for an excellent survey of research on NR, see Horn (1978)) involves utterances such as (1b) in their relationship to structures such as (1a).

- (1) a. I think he is not crazy  
b. I don't think he is crazy

(1b) has a reading in which the negative in the main clause seems to belong to the subordinate clause, thus making it more or less equivalent to (1a).

The use of the term NR for denoting this relationship is due to one particular approach to (1a-b), which was introduced by Fillmore (1963:220 ff). He suggested that (1b) might be derived from (1a) by means of a transformational rule (which he called 'negative transportation') raising the negative from the embedded clause into the main clause. Fillmore's suggestion was not based on a thoroughgoing analysis of the construction's characteristics, and he did not present real arguments for it. But in the course of the vivid discussion which his proposal aroused, various semantic, syntactic and lexical peculiarities of the construction were noted, and they have been used as arguments for and against, and have led to alternative accounts and additional proposals.

On the semantic level, it has first of all been observed that constructions like (1a) and (1b) are not completely equivalent. A closer examination reveals that (1b) is weaker in expressing the negativity of the embedded proposition than (1a). Horn (1978) dubs this the 'Poutsma-Bolinger Uncertainty Principle' (after those who first noted this meaning difference), which is an instantiation of the more general linguistic principle that the force of negation is negatively correlated with the distance between the negative marker and the element it negates. Hence, (1a) and (1b) appear not to be real synonyms. Of course, this is not a problem for a syntactic approach per se. For instance, if one accepts a syntax with a semantic base, the NR-rule can

be accorded to the semantics of the Uncertainty Principle by making it obligatory, triggered by the condition underlying this principle.

Another observation on the semantic level is that (lb) not only holds a relationship with (la), but apparently also has a reading similar to (lc).

(1) c. It is not the case that I think he is crazy

In the syntactic approach, then, this might be accounted for by assigning (lb) two different underlying representations, one which it shares with (la) (and thus involves the NR-derivation), and one which it shares with (lc). Yet this observation concerning the relationship between (lb) and (lc) lies at the core of a completely different kind of explanation for the 'NR-reading' of (lb), called the pragmatic approach. It will be noted that (lc) (and, thus, one reading of (lb)) is the 'privative opposite' of (la) (and, thus, the NR-reading of (lb)): (lc) is true in any situation in which (la) is true, but not vice versa. In the pragmatic approach, then, (lb) is claimed to have only one underlying representation, viz. the one that is paraphrased by (lc), and the relationship between (lb) and (la) is said to be purely pragmatically based. Bartsch (1973) (the first attempt along these lines) states it this way: while (la) obviously semantically implies (lb), (la) can be pragmatically derived from (lb). I.e., (lb) can be used to express (la), provided the right circumstances are present, these being that it is clear from the context that either the speaker thinks that 'p', or he thinks that 'not p'. The logic behind this approach is summarized in (2) (schema adopted from Horn and Bayer 1984:399):

- (2) a.  $F(x, p) \vee F(x, \sim p)$   
b.  $\sim F(x, p)$  <utterance (lb)>  
-----  
c.  $F(x, \sim p)$  <utterance (la)>

(Equivalent approaches can be found in Halpern (1976) and Epstein (1977)). Thus, as the title of Bartsch's (1973)



article states, "Negative Transportation gibt es nicht".

A serious challenge to the pragmatic kind of approach has always been said to be the syntactic behavior of NR-constructions. In fact, the syntactic aspects have never been considered in this framework, hence it is not clear whether it is possible to handle them in these terms (but see Horn and Bayer 1984 - cf. below). Anyhow, the fact that NR-constructions appear to influence a variety of syntactic processes has been used as an argument in favor of the syntactic approach.

Among the most famous observations in this respect is the behavior of strict 'negative polarity items' (NPI) (R.Lakoff 1969). Normally, NPIs such as 'until' or 'in days/weeks/years' can only occur in clauses containing a negative element; however, they are possible under the higher clause negation of NR-constructions as well, but not under higher clause negation in similar non-NR-constructions:

- (3) a. I don't suppose he has been here in weeks
- b. \*I don't claim he has been here in weeks

Another observation of R.Lakoff's (1969) concerns the polarity of tag questions (TQ). She claimed that, normally, TQs take opposite polarity as compared to the clause they belong to (unless they are intended to be ironical). But in NR-constructions the TQ formed on the embedded clause must have the same polarity as this clause:

- (4) a. I don't suppose the Yankees will win, will they?
- b. \*I don't suppose the Yankees will win, won't they?

Still another case is sentence pronominalization (Horn 1978:160):

- (5) I don't think Bill paid his taxes and Mary is quite sure of it

In (5), 'it' clearly refers to 'Bill didn't pay his taxes'. Horn (1978) cites a variety of similar syntactic phenomena, which all seem to indicate that in NR-constructions the

embedded clause is somehow conditioned by the negative figuring in the main clause.

R.Lakoff and others have argued that a transformational NR-rule can easily account for this if we make it operate after the rules conditioning the syntactic phenomena just noted, but before rules conditioning, for instance, incorporation processes of the negative in the main clause predicate in cases such as (6a-c) (cf. Horn 1978:170 ff).

- (6) a. It is likely that he is not crazy
- b. It isn't likely that he is crazy
- c. It is unlikely that he is crazy

This argumentation is faced with serious problems, however, since the syntactic behavior of NR-constructions is not as simple as has been suggested by the defenders of the syntactic approach. For nearly every syntactic process used in the argumentation it can be shown that (i) there are various non-NR-constructions which elicit it as well, and/or (ii) not every NR-construction elicits it, and/or (iii) there are other intervening factors which complicate matters (such as the complementizer type linking main and subordinate clause). Horn (1978) cites a wealth of observations in this respect, among others concerning the NPI-argument and the TQ-argument (see also Cattell (1973) on the latter). Consequently, it is fair to say that the syntactic approach has not been able to solve the syntactic problems of NR any better than the pragmatic approach.

A central problem in the NR-discussion concerns the lexical level. As Horn (1978:187) notes, a NR-reading of the (1b)-type of construction occurs only if the predicate in the main clause is an epistemic one expressing a mental state ('believe', 'think', etc.), perception ('seem', 'look like', etc.), or probability ('be probable', 'be likely', etc.), or a deontic one expressing intention/volition ('want', 'intend', etc.) or judgment/obligation ('be desirable', 'suggest', etc.) (I will leave aside the question whether it is appropriate to call these predicates 'deontic'). These can be summarized as predicates expressing the speaker's opinion "of the mind or of the heart" (Horn



1978:208). But, as (7/8a-b) show, not every predicate of these categories behaves in the same way.

- (7) a. I know he is not crazy  
b. I don't know he is crazy

- (8) a. It is certain that he is not crazy  
b. It isn't certain that he is crazy

(7/8a-b) certainly do not hold the meaning relationship which exists between (1a-b). In both the syntactic and the pragmatic approach, then, predicates which do not conform to the standard NR pattern have been excluded from the main account. In this respect, the syntacticians have sometimes used the fact that the pragmatic approach has no easy solution for these lexical peculiarities as an argument against this approach. But of course, the syntactic approach does not perform much better if it has to take recourse to ad hoc lexical markings for predicates susceptible to the rule.

Eventually, attempts were made to explain the exceptional status of these predicates in terms of their semantic nature. It was noted that one consistent group of exceptions are factive, counterfactive and implicative epistemic predicates ('know', 'be certain', etc.). This has been explained in the light of the uncertainty principle underlying NR: such predicates express certainty about their complement and would never provide a reason for raising the negative. A similar explanation is possible for deontic predicates expressing absolute necessity (e.g., 'be necessary', 'be obligatory'), which also consistently refuse NR-readings. But there are many other exceptions which do not allow this explanation, at least at first sight (e.g., 'be possible', 'be allowed'). Horn (1978) has tried to provide an integral explanation for these cases in terms of a 'scalar model'. If both the deontic and epistemic opinion predicates are plotted on a strength scale (1978:194)

(9) weaker		stronger
<----->		
be able	believe, suppose	know, realize
be possible	seem, want	be certain
be allowed	be desirable	need
be legal	suggest	be necessary
etc.	etc.	etc.

it appears that only the mid-scalar category can cause NR-readings. Horn explains this by noting that the negative counterparts of predicates on the extreme poles of this scale take the opposite extreme position on the negative counterpart of (9), whereas negated mid-scalar predicates still take a mid-scalar position on the negative scale:

(10) (weak)		(strong)
-----> +		
possible	likely	certain
-----> -		
not certain	unlikely	impossible

Thus, with the extreme-scalar predicates either the positive or the negative variant always expresses certainty or necessity (viz. the strong one), which would exclude them from NR according to the principle stated above. Horn (1978:198) restates it this way: "NR will not be condoned where it would systematically result in the emergence of pernicious ambiguities (as when the higher-S and lower-S readings of main clause negation would carry a high functional load), leading to a breakdown in communication". Negatives of mid-scalars remain mid-scalars, however, and consequently are potential NR-predicates.

But not all mid-scalar predicates allow NR-readings, and there is some crosslinguistic difference in precisely which predicates do constitute exceptions in this respect. For example, English 'hope' does not appear to be a NR-predicate, whereas Dutch 'hopen' is.

- (11) a. I hope he hasn't done it  
b. I don't hope he has done it

- (12) a. Ik hoop dat hij het niet gedaan heeft  
b. Ik hoop niet dat hij het gedaan heeft

Horn and Bayer (1984) suggest an account of these idiosyncratic cases in terms of the notion of 'Short-Circuited Implicature' (SCI) (Morgan 1978). SCI was introduced to account for indirect speech acts. More particularly, it was intended to explain why (13a), but not (13b)

- (13) a. Can you close the door?  
b. Are you able to close the door?

is standardly used to convey a request. The use of (13a) for requesting is claimed to be based on a usage convention which eliminates the need to calculate the implicature linking (13a) with the actual request, and which makes it possible for (13a) to be used for requesting in any context. The same implicature can exist between (13b) and the request, yet it always has to be calculated, and an appropriate context is required. Horn and Bayer apply this principle to the mid-scalars, arguing that those allowing a NR-reading do have a SCI-usage convention, whereas those not allowing it do not. Since such usage conventions vary across communities, this also explains why there is some variability across speakers, dialects, and languages as to which mid-scalars are and which are not 'neg-raisers'.

Though Horn's scalar model indisputably contains some attractive suggestions for the explanation of some of the lexical aspects of NR-constructions, it still does not settle the matter between the syntactic and the pragmatic approach. Horn (1978) himself still accepts a functional-syntactic approach, albeit somewhat reluctantly. Horn and Bayer's (1984) proposal is a clearly pragmatic one, however, which builds upon and adds to the traditional pragmatic approach à la Bartsch. Yet I doubt that it can be considered to be a substantial step in the syntax-pragmatics discussion, for the notion of SCI adds little to the scalar model itself. In effect, it amounts to claiming that within the range of mid-scalars, NR is due to chance: 'hope', for



example, does not get a NR-reading because the community of speakers is not used to giving it that reading. I fail to see in what respect this explanation has advantages over the syntactic one adding a lexical marking to the mid-scalars that do allow negative raising (which might be motivated on the basis of usage conventions as well). Horn and Bayer (1984:407 ff) claim that the SCI-analysis can provide a key to the syntactic behavior of the NR-constructions, since it has been noted on independent grounds that SCIs cause morpho-syntactic effects. They illustrate this by means of the NPI-problem, thus showing that a pragmatic approach to NR indeed has something to say about the syntax of the constructions. Yet as far as I can see, their proposal will be able to account for more or less the same range of facts as the syntactic approach, and is faced with more or less the same range of problems, which have been adduced by Horn (1978) himself.

In fact, the most recent statements on NR that I am aware of, those by Seuren (1985:166 ff), again advance the transformational rule account. But Seuren's remarks basically reflect his earlier view (Seuren 1974), and they do not add anything new to the discussion either.

The discussion about NR can hardly be said to be settled, then. We are left with an unsatisfactory picture of a construction which is semantically and syntactically volatile and strange, and the general observation that intuitions about it are vague, uncertain, and variable, only adds to this picture. Such facts should make one suspicious, not only about the proposals made to handle this construction, but probably also about the very way the problem to be accounted for has been conceived.

## 2. THE TRADITIONAL APPROACHES IN TERMS OF FG/FPG

Before reconsidering our phenomenon, however, let us see how the traditional accounts would look like in terms of FG/FPG.

### 2.1. POSSIBILITIES FOR A SYNTACTIC ACCOUNT IN FG/FPG

If one takes FG or FPG as a background for an account of the constructions under consideration, one is not obliged to a priori avoid a syntactic rule when deciding which kind of approach might be the most appropriate one. This is not a trivial statement, for until now the NR-rule has always been formulated in transformational terms, and it is precisely one of the main principles of the FG/FPG concept of syntax to avoid structure changing operations in grammar (Dik 1978:10 ff; Nuyts 1986). Thus one might argue that a syntactic rule approach cannot possibly be acceptable.

Yet, if one is willing to accept an 'intelligent' approach in the formulation of the syntactic placement and expression rules, it is, in principle at least, quite possible to formulate a non-transformational mechanism for NR which is completely in accordance with the main options taken in FG/FPG. In short, the principles of this 'intelligent' system, in terms of which the NR-mechanism could be formulated, are the following. In FG/FPG, the underlying predication (UP), which serves as the input for the expression rules, essentially specifies the semantic relationships between the various lexical items present, independent of the syntax of the language, and it is only the expression rules which place these lexical items into a pattern of surface syntactic correlations (Dik 1978:29ff; Nuyts 1986). We might assume that the placement of the elements from the UP into the actual syntactic pattern is taken care of by control mechanisms (CM), which are specific to individual units at each level of organization, and which are hierarchically organized according to the levels (words, constituents, main/ subordinate clauses, utterances, turns, discourses). Each CM is responsible only for its own domain and works independently, and in general the various CMs can

work simultaneously. Yet it might also be necessary to assume the existence of coordination procedures which determine possible interactions between individual CMs, and one of these is the 'super-level-procedure' (SLP), which allows the placement of an element from a particular domain into a domain at a higher level. Such is possible (i) if there is some clear (normally pragmatic) reason for it, (ii) if the placement at the higher level can be such as to satisfy this reason, and (iii) if the whole operation does not obscure the semantic belonging of the element in the UP. (An illustration will be given below.)

This SLP operates as follows. The CM responsible for the unit to which the element to be replaced belongs responds to the pragmatic pressure of this element, and hands it over to the SLP while keeping in mind that the element semantically belongs to its domain, thus taking account of it in organizing that domain syntactically. The SLP looks for an appropriate place to put the element (in accord with its pragmatic status), and asks the CM in command of the unit which might be a candidate for placement whether it can handle it. This CM may accept and order its domain with the element in it; or, if the candidate position is not free, it may refuse, in which case the SLP either looks for another possible placement, or, if there is no alternative, gives back the element to the CM from which it originates. In that case, this CM will try to compensate for the pragmatic force of the element by other means, such as intonation. (This proposal seems akin to what is called 'blackboard control' in artificial intelligence - cf. Hayes-Roth (1985). I cannot dwell upon this here.)

As I have argued elsewhere (Nuyts 1986), this kind of SLP seems necessary to account for a phenomenon such as 'subject raising', where the factor causing the rule to work is perspectivization, if one accepts Dik's (1979) account of this phenomenon. And in principle it could take care of NR, too, since the formal characteristics of NR are very much like those of subject raising. In any case, along these lines it would be possible to account at least for the same range of aspects of the syntactic behavior of the NR-construction which have been accounted for by assuming a trans-

formational NR-rule.

## 2.2. THE PRAGMATIC ACCOUNT IN FG/FPG

If we decided that the pragmatic account is appropriate, however, we would not be able to use the current FG framework for formalizing it. The 'raised' and 'non-raised' variants would have to get a different representation at the level of the UP, which is the deepest level of representation in FG, and the type of pragmatic inference relationship (or the alternative for it in terms of discourse production - inference is clearly a perceptual strategy) involved in the pragmatic approach is beyond the reach of this syntactic model. Of course, this is not necessarily a criticism. Originally, FG was clearly only intended as a purely syntactic model (though it seems that more recently the aspirations are going further than that; cf. Dik (1986, in prep.)), and such a model is not supposed to cover inference relationships between utterances. Yet, if one ever wants to provide an integral account of the entire phenomenon of language use, one will not be able to avoid handling this type of relationship too.

Still, it might be argued that introducing this inferential type of relationship into the grammar does not constitute a fundamental problem for the FG framework as it is conceived at present, since this relationship is not a matter of decisions to be taken during the processes of language production or perception themselves, but rather involves determining what is going to be said in order to make clear what is meant, or what might have been meant by what has been said, i.e. it involves pre- or post-language processing phases. Thus, it is not the grammar itself which ought to account for this, and it would suffice to introduce an additional system of rules which allow the specification of inference relationships of various kinds between the UPs as they are specified in FG.

In any case, FPG does provide possibilities for formulating the mechanism behind the pragmatic account, in a way which is basically in agreement with this view on the



'indirect' nature of the relationship, but which involves a much more complex system of levels than those accepted in FG. In FPG, this pragmatic relationship is a matter of the selection of the State of Affairs (SA) (in the FPG sense of that notion) underlying the utterance, from the Situational Network (SN) underlying the entire discourse, on the basis of the Communicative Situational Network (CSN) (De Schutter and Nuyts 1983:388-393; Nuyts 1985a:143-150). The SN is a subpart of the Universe of Interpretation (UI - i.e. the entire stock of world knowledge of the speaker), and more particularly the subpart which the speaker considers to be of immediate relevance in the communicative situation in which he is involved. The CSN contains the speaker's hypotheses about the hearer's knowledge of the facts involved in the SN. On the basis of a comparison of the SN and the CSN and the decision what constitutes mutual knowledge and what non-shared knowledge, and on the basis of communicative intentions and features of the social situation, the speaker decides which aspects of the SN ought to get an explicit mentioning in the discourse. These aspects are organized in single SAs, each of which constitutes the basic conceptual structure underlying one linguistic utterance. In selecting these SAs, the speaker makes use of the hearer's capacity to reconstruct the entire SN of the speaker (or the relevant parts of it) on the basis of only a small selection of explicitly mentioned facts, by means of inferences from these facts on the basis of the knowledge the hearer already has, and on the basis of features from the concrete situation.

Thus, in our specific case of the utterance of (1b) leading to the understanding of (1a), this would mean that we must assume a CSN in which the speaker supposes that the hearer thinks (justly or not) that the speaker fulfils the condition (a) of inference schema (2) in section 1., and a communicative situation which urges the speaker only to express the SA involved in (1b), knowing that the hearer can infer that the SA involved in (1a) must hold, too. If condition (a) does hold, and if the hearer knows that it does, he (the hearer) has found out the real state of the mind of the speaker. If the condition does not hold,

although the speaker is aware that the hearer thinks it does hold, the speaker is misleading the hearer in a rather subtle way. Of course, (2) can also cause communication failures. If the condition does hold, but the speaker is mistaken in assuming that the hearer knows this, the speaker will fail to communicate what he wanted to. And if the condition does not hold, but the speaker is unaware of the fact that the hearer does believe it to hold, the hearer will understand things the speaker did not mean to say.

### 3. DETERMINING THE PROBLEM TO BE ACCOUNTED FOR: THE RANGE OF RELEVANT UTTERANCE PAIRS

As suggested in 1., in order to decide on the appropriateness of either of the approaches mentioned, it seems necessary first to reconsider the phenomenon to be accounted for, since it is not unlikely that there are difficulties with the way it has been conceived so far. Indeed, a major problem with the traditional conception appears to be that it involves only part of the potentially relevant set of pairs of alternative utterances existing within the global construction type under consideration.

As mentioned, constructions such as (1a-b) (the latter in the NR-reading; it is important to keep this reading distinguished from the one related to (1c) - cf. 4.3) express the speaker's opinion concerning a particular proposition, i.e. a propositional attitude (PA - henceforth, I will call this construction type the 'PA-construction'), and this PA combines two aspects, polarity (positiveness/negativity) and modality (deontic or epistemic - I will only use examples with epistemic modality in this paper, but the discussion is equally valid for cases with deontic modality). Thus, in general, PA-constructions can involve the expression of degrees of likelihood of the truthfulness or falsehood of the proposition in some possible world (in the epistemic sphere), and degrees of intensity of its desirability or undesirability in this possible world (in the deontic sphere), and this ranges from an absolutely positive qualification of the proposition, over various degrees of non-absolute qualification in a gradual order from rather positive via totally neutral to rather negative, ending in an absolutely negative qualification of the proposition. The variants in the PA-construction pairs apparently provide alternative possibilities for expressing (approximately) the same PA over a proposition.

From the examples presented in 1. then, it will be obvious that the traditional approaches have only considered PA-construction pairs in which exactly one negative marker is present in the surface structure, either in the main clause or in the embedded clause, and in which the main

clause predicate (let us call it the modality (M-) predicate, since it expresses the modal component of the PA) in the main clause negative and the embedded clause negative variants is identical. This restriction is due to the transformational syntactic view, in which superficial structural similarities are the main criterium for defining linguistic relationships. But, strangely enough, it has never been criticized or amended in the pragmatic approach, even though the latter might be expected to be somewhat more functionally oriented. In fact, from a functional perspective, this restriction appears completely unmotivated, for these criteria lead to only a fraction of the entire range of pairs of alternatives between which basically the same meaning relationship exists.

Firstly, the same type of relationship can also be found in pairs involving more than one negative marker. In this respect, compare (14a-d) and (15a-d).

- (14) a. It is probable that he is not crazy
- b. It isn't probable that he is crazy
- c. It is improbable that he is crazy
- d. It isn't improbable that he is not crazy
  
- (15) a. It is likely that he is crazy
- b. It isn't likely that he is not crazy
- c. It is unlikely that he is not crazy
- d. It isn't unlikely that he is crazy

The nature of the meaning relationship between the utterances in pairs such as (14b) or (14c) and (14d), (15b) or (15c) and (15d), and (15a) and (15b) or (15c) is quite comparable to the relationship between the utterances in the pair (14a) and (14b) or (14c) (which is like the utterance pair (1a-b)). Even the difference in terms of weakness is always present, even though it is not always the same (see 4.1).

Secondly, the same type of relationship can also be found in utterance pairs in which there is no identity in the M-predicates. In this respect, consider again the utterances in pairs such as (7a-b) or (8a-b), which have



been excluded from the traditional accounts precisely because of the clear difference in meaning between the variants.

(7) a. I know he is not crazy

b. I don't know he is crazy

(8) a. It is certain that he is not crazy

b. It isn't certain that he is crazy

In utterances (7b) and (8b) as well as in utterances (1b) or (14b), the negative can be said to contribute to the value of the opinion expressed about the embedded proposition. (8b), for instance, does indicate the possibility that 'he is not crazy', and in certain contexts even seriously suggests this to be the case. In other words, the meaning of (8b) certainly does resemble that of

(16) It is (very well) possible that he is not crazy

in the same way as (14b) equals (14a), including the difference with respect to the weakness of the negativity. Similarly, (8a) and

(17) It is impossible that he is crazy

do communicate about the same message: the main clause in (17) unmistakably indicates that 'he is not crazy', as in (8a), and again the negativity in (17) is somewhat weaker than in (8a).

Thus, if one takes the functionality (and thus the meaning) to be the primary criterium for deciding which linguistic constructions must be related in a grammar and which not, any account put forward to handle pairs such as (1a-b) or (14a-b) should equally well be applicable to pairs such as (14b/c-d), (15a-b/c), (15b/c-d), (8b-16) or (8a-17).

#### 4. ASPECTS OF THE MEANING RELATIONSHIP RECONSIDERED

Evidently, if one accepts this encompassing picture of the phenomenon, this immediately leads to a revision of some of the suppositions present in the traditional approaches with respect to the nature of the relationship between the utterance pairs.

##### 4.1. THE WEAKNESS FACTOR

First of all, utterances (14a-d) and (15a-d) indicate that the traditional picture of the weakness factor, the 'uncertainty principle' in the relationship between the alternatives in the PA-construction pairs, at least has been too simplistic. Obviously, this uncertainty factor cannot be stated with respect to the negativity of the proposition in itself: utterances (15a-d) clearly indicate that the same factor is operative in the case of an overall positive qualification of the proposition. Hence, this factor is a matter of the degree of modality involved in the qualification of the proposition, irrespective of whether it is positive or negative.

Yet, given the fact that the only consistent structural difference between the various utterance pairs involves the occurrence and placement of (a) negative marker(s), the differences in the degree of uncertainty, which are as consistently present, somehow must be correlated with this variable. Utterances (14b/c-d) and (15a-b/c) indicate, however, that, contrary to the traditional view, the degree of uncertainty has little to do with the distance of the negative marker from what it negates: (14d) and (15b/c) are clearly weaker than (14b/c) and (15a) respectively, even though there is a negative as close as possible to what is negated in the former, but not in the latter.

Upon closer examination, it appears that the differences in weakness can be correlated with variation in the explicitness of a negative marker in the main clause. In both (14) and (15), the (d) utterance, which contains a double negative marker in the main clause, is the weakest,

and utterance (a), which contains no negative marker in the main clause, is the strongest. There is even a difference in the strength of the utterance between the incorporated and non-incorporated variants (b) and (c): the non-incorporated one is weaker than the incorporated one. In addition, compare (1a-b) and (18).

- (1) a. I think he is not crazy  
b. I don't think he is crazy

(18) I doubt he is crazy

(18) seems to me stronger than the equivalent (1b), but it is hardly weaker than the alternative (1a).

These observations seem to allow the generalization that there is a direct correlation between the degree of explicitness of a negative element in the main clause and the degree of uncertainty expressed by the utterance in which it occurs. Thus, the following hierarchy of decreasing degrees of explicitness of the negative can be formulated: double negative (as in (14d) and (15d)) >> single explicit negative (as in (14b) and (15b)) >> single incorporated negative (as in (14c) and (15c)) >> implicit negative (as in (18)) >> no negative (as in (14a) and (15a)).

The hierarchy of growing uncertainty expressed by the utterances involved runs exactly in the opposite direction.

Apparently, the main clause negative not only influences the polarity component of the PA expressed, but also the modality component involved in it.

#### 4.2. THE BEHAVIOR OF HORN'S EXTREME-SCALAR PREDICATES

Since pairs such as (8b-16) and (8a-17) ought to be part of an integral account, this implies that rather than taking for granted the meaning difference between the utterances in pairs such as (7a-b) or (8a-b) and using this as a criterium for bypassing them, this meaning difference in itself should be taken into consideration in designing the account. In this respect, Horn undoubtedly is right in claiming that the

apparently different behavior of such pairs must be due to the nature of the main clause predicates (i.e. the extreme-scalars in his scalar model), but rather than trying to find an explanation for why they are excluded from the mechanism under consideration, it will be necessary to find the system-internal regularity behind their behavior.

In this respect, it is apparent from the relationship holding between (8b-16) and (8a-17) that these extreme-scalars take part in weakness relationships as well as the mid-scalars, which goes to demonstrate that the factor to which Horn (and others before him) has ascribed their seemingly exceptional status does not hold water. A property such as factivity or counterfactivity of the M-predicate apparently does not exclude the expression of uncertainty. On the contrary, in many circumstances it is precisely the use of an utterance such as (8a) or (17) that signals a certain degree of uncertainty on the part of the speaker with respect to the status of the proposition expressed, for otherwise he could as well have used (19) for his purpose.

(19) He is not crazy

Yet, this mistake in looking for an explanation for the meaning problem notwithstanding, Horn's analysis of the predicate relationships in terms of the degrees of modality expressed by them and its combination with negation of the predicates was an adequate step in the direction of uncovering the real pattern in this respect. The reason why he failed to see this pattern is that he relapsed into the evil of being guided by the form (in this case the lexical correspondences between utterances) rather than the function in considering the matter (his generally functionalist attitude notwithstanding). The key is provided by schema (20), which is a simple reformulation and elaboration of Horn's scalar model. This schema shows some possible mappings between various degrees of PAs and main clause expressions, conceiving the matter not from the perspective of the M-predicates occurring in the main clause, but from the perspective of the combined PAs expressed in the main clause.



(20)

-	N						+
-----							
impossible	doubt	uncertain	possible	believe	certain		
forbidden	not-think	not-know	not-impossible	probable	know		
	improbable	not-necessary	legal	want	necessary		
	not-want			not-improbable			

(There certainly is some discussion possible with respect to the exact value of each expression; in fact, it seems that there can be a considerable range of variability in the exact modal value expressed by each, due to the influence of contextual factors. I have not registered the differences between incorporated and non-incorporated variants, but as noted above this difference does influence the exact modal value expressed in the main clause, which means that greater incorporation pushes the expressions away from the N-point on the scale, which marks complete uncertainty as to polarity.)

In utterance pairs such as (8a-17), (8b-16), and (14a-b), the utterances express a certain degree  $x$  of negativity about the proposition under consideration. This negativity can either be expressed by means of a negative marker in the embedded clause and a main clause expression situated on the positive side of scale (20), or by means of a positively formulated embedded clause and a main clause expression located on the negative side of the scale. Of course, in order to have the same modal value  $x$  the selected main clause expression in the latter case must be the opposite of that in the former case, point N on our scale being the mirror in this respect. If this condition is fulfilled, we have two semantically perfectly equivalent utterances. Obviously, utterance pairs (14a-b), (8a-17), and (8b-16) do fulfill this condition, and thus are cases of such equivalent variants (with the exception of a small difference in the exact degree of modality expressed, due to the influence noted above of the negative marker in the main clause on the modal component involved in the predicate), but (8a-b) are not.

In fact, if we take a look at the position of M-predi-

cates and their negatives, and PAs and their opposites on scale (20), it appears that there is only a correspondence between them in the case of the rather positive and the rather negative attitudes. In all other cases, this relation between attitudes and lexical items is non-existent. This is simply due, once again, to the fact that the main clause negative not only determines the expression of polarity about the proposition, but also influences the modal value expressed by the M-predicate: it turns this modal value into its opposite, along the lines indicated by Horn in schema (10) in section 1. In this way, the negation of the M-predicate used to express the modality in (8a) changes the modality expressed by that predicate to its opposite, hence the use of that negated lexical item in (8b) does more than only compensate for the change from the negative formulation of the proposition in (8a), to its positive formulation in (8b).

#### 4.3. THE STRUCTURAL AMBIGUITY OF THE 'RAISED' CONSTRUCTION

In 4.2 it has been claimed that the alternative ways of formulating the PA in the PA-constructions are semantically (not pragmatically - cf. 6.2) equivalent (apart from the weakness difference), but this view is in conflict with the way the pragmatic approach has determined the nature of the meaning relationship between these alternatives. According to the pragmatic approach, the main clause negative variant is the privative opposite of the downstairs negative variant. Examples such as (8a-17), and particularly (1a-18), clearly demonstrate that this view is mistaken, however. I cannot imagine any situation in which the latter utterance in these pairs would be true and the former utterance not.

The mistake of the pragmatic approach has been that it has based its analysis not on the PA-construction reading of utterances such as (1b), but on an alternative reading of the same structure. In fact, provided the main clause negative marker in the 'raised' constructions is an explicit, non-incorporated one, it is possible to interpret the role of this negative marker in at least two ways (cases

such as (14c) or (15c) do not allow these different interpretations), and indicative for the distinction are the different intonation contours accompanying the alternative interpretations of the structure: an utterance such as (1b) can be pronounced either with a neutral (mostly rising) intonation on 'don't think', or with a clear intonational break between negative and predicate. In the latter case, there still are two possible variants, with main stress on 'don't' (but this variant is probably clearer with the non-reduced form 'do not'), or on 'think'.

In the PA-construction reading, then, which is the one with the neutral intonation in the main clause, the negative does not play a distinct role relative to the M-predicate, but rather forms a functional unit together with it (and, as noted in 4.1 and 4.2, semantically interferes with it), and it is this functional unit which in its entirety is involved in expressing the PA over the embedded proposition.

In the other readings, however, there is a functional opposition between the negative and the M-predicate, as is reflected in the intonational break between them, and in the impossibility of incorporating the former into the latter. Here the negative clearly does not take part in expressing the PA over the embedded proposition. Rather, it negates the PA expressed over the embedded proposition in itself, which is in fact what is done in constructions of type (1c), too. The difference between the two intonational alternatives in this respect seems to be a matter of topicality or focality of either the negation or the M-predicate. The reading with stress on the predicate can be used by the speaker if he wants to correct a suggestion made in the communication as to which opinion he holds with respect to the embedded clause (normally, this utterance is followed by a statement of which opinion can appropriately be ascribed to the speaker), i.e. in cases where the PA expressed in the main clause is focal. The alternative with the main accent on the negative rather is used if the speaker wants to forcefully deny the suggestion that he holds the opinion about the embedded proposition expressed in the utterance (this reading is most like (1c)). In either case, the negative in the main clause has the predicate within its scope.

## 5. PROBLEMS FOR THE TRADITIONAL ACCOUNTS

This reconsideration of the traditional conception of the problem to be accounted for and some of the suppositions following from it casts new light on the plausibility of the traditional approaches to the phenomenon.

### 5.1. THE PRAGMATIC ACCOUNT

First of all, particularly in the light of the observations in 4.3 it will be obvious that the pragmatic account of the relationship between the alternatives in the PA-pairs in terms of pragmatic inference schema (2), and its reformulation in 2.2, is inaccurate. If they have basically the same meaning (the same truth conditions), there is no need for an inferential procedure to relate them. On the contrary, an adequate grammar will have to specify the relationship between them in a direct way, in terms of the process of utterance production or interpretation itself.

Of course, the analysis in 2.2 does remain valid for relating the non-PA-construction reading of (1b) with the accent on the negative (the reading with the accent on the predicate would be inappropriate in the context of precondition (2a)) and its semantic equivalent (1c), to (1a) and the PA-construction reading of (1b). In fact, contrary to what seems to have been assumed (Horn 1978:179), inference schema (2) does apply in relating all such alternatives, including those with Horn's extreme scalar predicates and even those with the ideosyncratic lexical exceptions. For 'certain', for example, if the hearer knows that either you are certain that x is crazy or you are certain that x is not crazy, and you tell him that you are 'not <certain that he is crazy>', evidently he can conclude that you are indeed certain that x is crazy. The same reasoning can be followed with, e.g., 'hope'.

For relating the non-PA-construction version of the main clause negative construction with the accent on the predicate to its PA-construction version, a similar pragmatic inference schema could be invoked, but then the



precondition should be that the hearer knows that the speaker either holds opinion x, or opinion y about the proposition. If the speaker then states that he does not hold opinion x, the hearer automatically knows that the speaker must hold opinion y.

Evidently, the conclusion that schema (2) does not apply to accounting for the variants in the PA-constructions automatically implies that the entire argumentation to account for the idiosyncratic exceptions to the predicates allowing a downstairs interpretation of the main clause negative on the basis of the notion of SCI is vacuous. There is nothing to be short-circuited in the relationship between the variants.

## 5.2. THE SYNTACTIC ACCOUNT

The fact that the pragmatic approach is mistaken still does not mean that the syntactic account is accurate, however. In the light of the additional observations made in 3., there are serious arguments against a syntactic rule approach for the PA-constructions. This is already apparent if one compares the various utterance pairs in (14a-d) and (15a-d). It does not require much discussion to see that any attempt to account for these utterances in terms of a syntactic mechanism will involve a variety of problems the solution of which requires mechanisms which are, from the functional-syntactic perspective of FG/FPG, completely unacceptable. First of all, a syntactic mechanism would imply the acceptance of a lexical correction session applying after the operation of the expression rules, which should involve not only relatively small lexical adaptations (needed to account for, among other things, the negative incorporation cases such as (14c) or (15c) - see Horn (1978:170ff) for other cases of this kind), but also complete lexical exchanges (needed to account for pairs such as (8a-17), (8b-16) or (1a-18)). While such a session might be acceptable in a TG-framework, it definitely is not in the FG/FPG-framework. Moreover, if one considers utterances like (14d), (15b) or (15d), it is clear that one will have to develop a series of

different scenarios for the application of the mechanism, in which sometimes double negatives must be allowed, and sometimes double negatives must be deleted. This is likely to result in a completely ad hoc mechanism. Moreover, according to the principles underlying the concept of syntax in FG/FPG a deletion mechanism is out of the question anyway.

More particularly with respect to the special mechanism sketched in 2.1, the main clause negative in the PA-constructions clearly does not have the characteristics that would be expected if it could be subject to this mechanism. It would only be appropriate to formulate the phenomenon in these terms if we can assume that the negative semantically belongs to the embedded predication, but that it has some strong pragmatic value which can have motivated the raising process, and which, thus, is distinctive for the raised and non-raised alternatives. But none of these conditions is fulfilled.

Of course, the main clause negative in the PA-constructions has to do with the meaning of the embedded clause, yet, as shown in 4., it interferes with the meaning of the M-predicate as well. Thus, the negative semantically belongs to the embedded clause no more than to the main clause. (It is even questionable whether one can say that an operator such as a negative 'semantically belongs' to a proposition. If at all, then this is at least quite different from the way the main clause object in the subject raising constructions can be said to semantically belong to the embedded proposition.) And pragmatically it does not play a distinct role, as is apparent from the fact that it has no functional distinctiveness in the main clause, but rather constitutes a functional unit together with the M-predicate.

One still might argue that the uncertainty factor can be invoked as the causee for our syntactic rule. Yet it is not only suspect to use this kind of (semantic) factor as a substitute for the traditional type of pragmatic factors taken to influence syntactic placement, such as perspectivization or topicality/focality. As already suggested in 4.1, it is even impossible to correlate this factor with the placement of the negative in the embedded

clause or the main clause. There is a perfect parallelism between utterance series (14a-d) and (15a-d) as far as weakness relationships are concerned, but the occurrence of the negative in the embedded clause is exactly opposed in both cases, which means that a raising rule cannot apply in the same way in both cases.

## 6. THE COGNITIVE-PRAGMATIC APPROACH

Both the syntactic and the pragmatic approach appear to have been mistaken, then, and the question now arises how an adequate account for the PA-constructions in terms of FG/FPG should proceed.

### 6.1. THE BASIC LEVEL OF REPRESENTATION

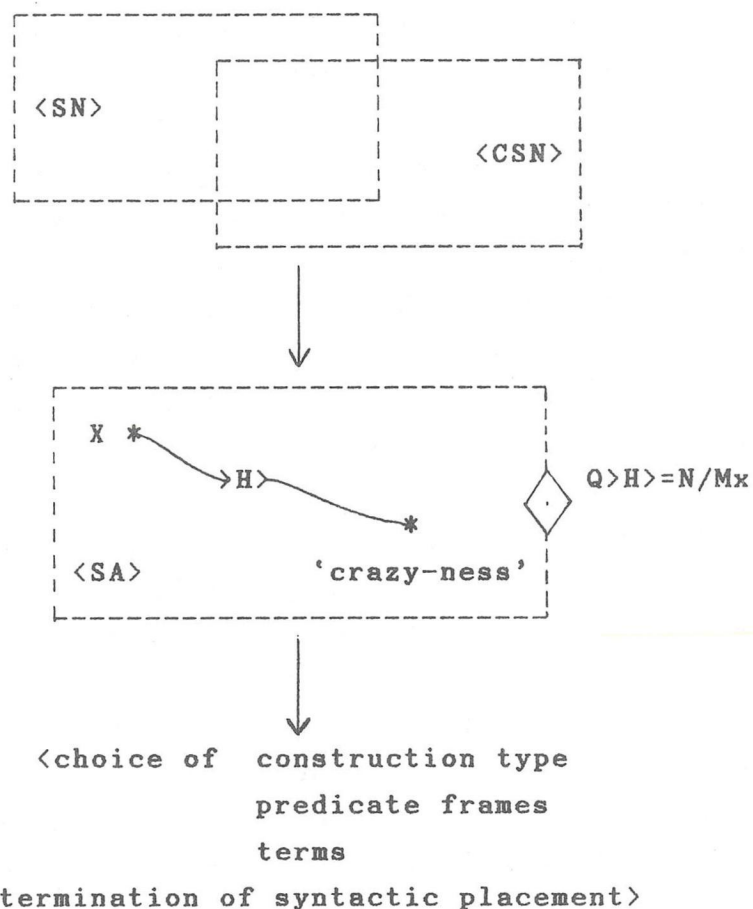
First of all, our discussion of the traditional approaches provides clear indications with respect to the direction we will have to take in finding a basic level of representation for the constructions. If a syntactic rule is inappropriate as a means of relating the alternatives in the grammar, we have to accept that the variants in the different pairs do have a different structure at the level of the UPs in FG/FPG, viz. with the negative(s) located in the structural unit in which it (they) occur(s) in the surface structure. Yet, since the alternative PA-constructions basically do have the same meaning (they have the same truth-conditions; I am not considering the small differences in modality expressed here - cf. 6.2), we cannot leave the account of the relationship between the alternatives to some mechanism outside the domain of the mechanisms of language production or perception, as was suggested in 2.2. Consequently, the PA-constructions require the acceptance of a level in the grammar at which all the alternatives share a common representation, which must be deeper than the level of the UPs, and which must be correlated with the latter by systems accounting for the factors which cause the different representations for the variants at the latter level.

As to the nature of this deeper representational level, we will apparently have to distance ourselves from the superficial appearance of the PA-constructions, for our observations in 3. and 4.2 have shown clearly enough that the level of lexical correspondence does not contain the key to the real functional pattern underlying them.

Hence, the further attempt at accounting for the relationship between the alternatives in the PA-construction

pairs unavoidably forces us to go beyond the representational capacities of FG. And the requirements in this respect automatically lead to the more sophisticated system of levels of representation present in FPG, and more particularly to the level which lies at the basis of the mechanisms responsible for the production of individual utterances, viz. that of the SAs. As mentioned in 2.2, this level is the result of selection processes performed on the SN on the basis of the CSN, and schema (21) provides a (strongly simplified) picture of how this level is organized, with the particular specifications which apply for the concrete examples that have been given so far, involving the expression of negativity and a certain degree of modality over the proposition.

(21)



The SA involves the matter of 'x being crazy', which is, according to the FPG concepts, represented in an abstract network notation. Thus, X and 'crazy-ness' are labels for concepts (which are basically non-lexical), and the latter



is linked to the former by the basic connector of 'having' (>H>); i.e., 'X has crazy-ness'. (I cannot discuss the principles and characteristics of this notational system here - cf. Nuyts (1985a).) In this SA the 'having' relationship is qualified (Q>H>) as being non-existent (N) with degree of certainty (modality) x (Mx) (cf. De Schutter and Nuyts 1983:396; Nuyts 1985a:145). Note that in this representational system the Q is not situated on the same level as the SA itself, but, rather, involves the entire SA on a conceptual meta-level. Thus, modality and negativity are hierarchically equal meta-level operators, which semantically (conceptually) do not belong to the SA in itself (cf. 5.2). In this respect, this level of representation is qualitatively different from the levels of lexical representation from the UP onward, in which the particular conceptual status of the modality and negativity need not have a clear formal expression anymore (though it may, as in the main clause - embedded clause structure in the PA-construction, in which the main clause only contains elements of the Q in schema (21)).

This basic level of representation (21) is not only required for the PA-constructions in themselves. It is also required to account for the relationships existing within a wider set of construction types which can be used to express an 'opinion' about a proposition. Indeed, the speaker is not obliged to use a PA-construction to express the modality or polarity of a proposition. Alternatives that are available to him include the insertion of an adverbial expressing the modality (such as 'probably', 'evidently', or 'necessarily') into the utterance expressing a positive or a negative SA, as in (22)

(22) Probably he is not crazy

(or variants of it with a different word order); or the speaker can use modal auxiliaries such as 'might' or 'should' in the utterance, as in (23).

(23) He could not be crazy

Obviously, these utterances basically express the same thing as the PA-constructions, and therefore there must be some level of representation which is shared by all of them. But, again, this level cannot be the level of the UP, for constructions such as (22) or (23) cannot be derived from the UP of some PA-construction (or vice versa) by syntactic means, for reasons similar to those invoked in 5.2 with respect to the alternative PA-constructions: it does not require further discussion to see that the structural changes would be much too fundamental to be acceptable in the functional-syntactic framework of FG/FPG.

Hence, relating level (21) to the level of the UPs in FG/FPG will not only be a matter of differentiating between the alternatives in the PA-construction pairs, but also of differentiating between the PA-constructions and these (conceptual) equivalents.

## 6.2. DIFFERENTIATING THE ALTERNATIVES

With respect to the difference between the PA-constructions and alternatives like (22), it will be obvious that the speaker's choice is a matter of the pragmatic functionality of his utterance. If one compares (22) and (14a) or (14b), for example, the PA-constructions allow a much clearer functional distinction of the PA, or a part of it, and the proposition, in the case of significant differences in the topical or focal value of either (see De Schutter (1985a, b) for the principles of this mechanism of functional distinctiveness in utterance constitution). To see the exact role of pragmatic factors here, however, it is necessary at once to consider the differences between the alternative PA-constructions, for it appears that there is an interference in this respect.

As noted in 3. and 4., the PA-variants are alternative ways for expressing the Q of the SA. With respect to this Q, the PA-constructions in general offer a number of possibilities. For expressing the modality component, there is possible variation in the choice of the M-predicate and, under certain circumstances, its combination with (a) negative

marker(s) with a particular degree of incorporation; as to the negativity-component, it is possible to express it in the embedded clause by means of a negative formulation of the SA, and/or in the main clause through the introduction of (a) negative marker(s) there. As noted in 4., the speaker must be careful to attune the choices to each other, since the different expressive devices appear to interfere. And in this respect, a factor which undoubtedly will determine the range of options he takes is the exact modal value he wants to express. This factor certainly is decisive for the speaker's choice between, say, (14a) and (14d), or (14b) and (14c), or (1b) and (18).

It is not so certain, however, whether it is also decisive in the choice between the alternatives which are actually at the basis of this entire discussion, alternatives such as (14a-b/c), (14b/c-d), etc. Of course, there is a difference in the degree of uncertainty expressed by these variants, so the modality factor might play some role in the speaker's choice. Yet the difference in this respect is relatively small, and can, in contexts, certainly reduce to hardly relevant.

So there will undoubtedly be another factor determining the choice between these variants, and it seems that this factor is of a pragmatic nature: again the possibilities the variants offer for functionally distinguishing between elements according to their topicality or focality. More particularly, what seems to be involved is the value in this respect of the polarity factor and the modality factor separately, and relative to (parts of) the SA. As noted in 4.3, expressing the negativity and the modality together in the main clause does not allow a functional distinction between them, but a distinct pragmatic status of either of them can get expression if the negativity is expressed in the embedded clause.

Considering this matter in the light of the global differentiation between the alternatives (14a), (14b) and (22), then, I would suggest the following tentative account. (14b) most probably is chosen if the PA in general has a strong focal value, while the proposition in the embedded clause is topical. (14a) on the other hand might be chosen

if there is a strong pragmatic distinction between the components of the PA, and if at least the modality factor is strongly focal. Thus, either the modality component of the PA is strongly focal, whereas the negativity of the SA is topical, just like the SA in itself. Or, alternatively, both the negativity and the modality are focal, but for different reasons (i.e. they have a different kind of focus). The latter distinction would find its reflection in an intonational stress on the negative in the embedded clause. (22) is chosen, then, if there is no strong pragmatic distinctiveness between the modality and the proposition. The negativity factor still can get focus, which would result in stressing the negative in (22).

At a more basic level, the differentiation between the various alternatives can be traced back, at least partially, to matters concerning the relationship between the SN and the CSN, and an important factor in this respect is of a discourse functional nature, namely the way in which the SA under consideration has been introduced in the discourse, and more particularly whether it has been presented in a positive or a negative way, or whether the modality of the SA has been under discussion or not. In fact, decisions with respect to the assignment of a topical or focal value to the elements in the conceptualization at level (21) (i.e. the utterance level) are strongly (but certainly not uniquely) determined by the need to create an utterance which is adequately discourse bound, and as such, in choosing between the alternatives, the speaker must pay due attention to the thematicity or rhematicity or, in Hallidayan terms, the givenness or newness (cf. De Schutter and Nuyts 1983:389, 392 ff.) which the various elements in conceptualization (21) (including the modality and the negativity aspects of the PA) have in the framework of the ongoing discourse and the non-linguistic situation, i.e. at the level of the SN (which represents the level of the text/discourse).

It probably is this factor which can be held responsible for the 'embedded negation constraint', i.e. the observation which is sometimes made - but never explained - in the literature, that in some cases it is obligatory to



choose the 'raised' variant of the PA-utterance pairs because the non-raised variant is felt to be odd (Horn 1978:180). This impression might be due to the fact that the utterances in question have been considered in isolation, which de facto means that the observer unconsciously selects a context for the utterances, which is normally the most neutral context. If this same context is used in judging both utterances in the pairs, it is not unlikely that one of them is felt to be odd, even though it would not be considered odd if it were placed in another context.

Of course, in order to find out exactly how these discourse functional elements influence the speaker's choices (and whether the 'embedded negation constraint' can be explained away along these lines), it is necessary to perform an extensive corpus analysis. Since I have not done such an analysis (yet), I will not pursue these thoughts here.

In any case, the above analysis clearly demonstrates that the account of the alternatives unavoidably leads to the introduction of the pragmatic functions not at a post-UP-level, as is done in FG, but in the course of the processes mediating between the conceptual representation (21) and the level of the UPs (as far as topicality and focality is concerned), and even at the level of the SN (as far as matters of thematicity and rhematicity, or givenness and newness are concerned, i.e. pragmatic functions which have not been discerned in FG so far, although they are implicit in the FG-conception of the pragmatic functions at the sentence level - cf. also Hannay (1985)). Apparently, if one consistently applies the view on syntax inherent in FG/FPG, one has to accept that pragmatic functions not only influence the placement procedures in the grammar, as is claimed in FG, but also the basic choice of construction types and the lexical filling in of the frames, as is claimed in FPG.



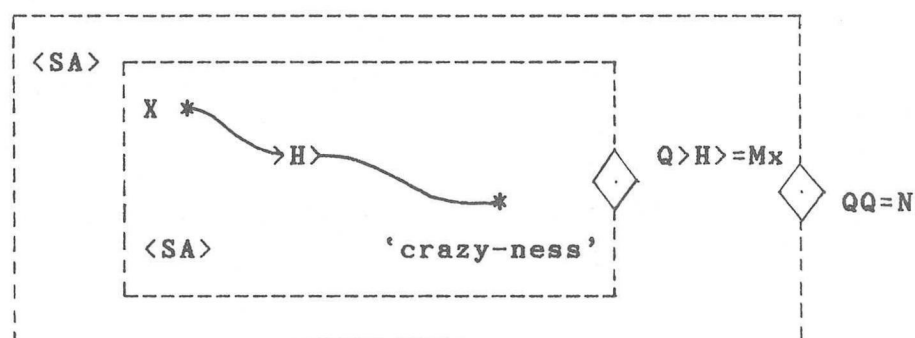
## 7. BACKING UP THE ANALYSIS: THE CASE OF THE STRUCTURAL AMBIGUITY OF THE MAIN CLAUSE NEGATIVE CONSTRUCTION

Further indications for the necessity of the level of representation (21), and the pre-UP-placement of the pragmatic functions, can be derived from an attempt to account for the structural ambiguity of the main clause negative utterances, and for the relationship of their non-PA-construction reading and constructions of type (1c).

In this respect the question arises at which level we should account for the structural ambiguity of the main clause negative constructions as discussed in 4.3. If we opted for the level of the UPs, and decided to assign the construction two different representations there, we would be forced to handle the difference in terms of the scope of the negation at this level. But this would cause problems for the representations at the level of the UPs in FG/FPG, since there is no mechanism available at present to handle such matters, and it is hard to see how such a mechanism could naturally fit into this representational system.

In fact, it is not necessary at all to introduce such a mechanism if one takes into account representational level (21). Evidently, at this level both readings must obtain a different representation, according to the difference in conceptual meaning (cf. 2.2, 5.1), and for the non-PA-reading the representation would be like (24).

(24)



Thus, the Q in the <<SA>> in which the >H> relationship in the <SA> 'X has crazy-ness' is said to have modal value Mx, is qualified as being untrue (QQ=N). (Note that this means that in these circumstances a predicate like 'think' in (1b)

does not express modality anymore, but is simply part of an SA.) We can assume, then, that both conceptual structures (21) and (24), given an appropriate pragmatic functionality of the various elements, are mapped onto one and the same lexical pattern at the level of the UPs. Still, the conceptual distinction between them does not get lost, for, at least in situations in which the structural ambiguity would not automatically be disambiguated by the (verbal and/or non-verbal) context, the speaker can use further expressive devices such as intonation to mark the specific status of the negative, in terms of its scope. In this respect, (24) can lead to the two different intonation patterns noted, depending again on the exact pragmatic functionality of either the 'level <SA> Q' or the 'level <<SA>> Q' (cf. 4.3).

As to the mapping of (24) onto the level of the UPs, the speaker is, of course, not obliged to choose construction type (1b). As has been indicated, one possible alternative (at least for the case with the accent on the negative) is construction type (1c). And, evidently, this is once again a matter of pragmatic functionality. In this respect, it seems that we are very close to the matter of the relationship between cleft and pseudo cleft constructions, and their non-cleft alternatives. In fact, (1c) is clearly akin to the cleft constructions, and probably one might even argue that it is a cleft construction. Functionally at least, they are very similar: (1c) is a structure intended to strongly focus upon the negativity of the embedded clause, much stronger than could be done in construction (1b) with the accent on the negative. Structurally, there seems to be some difference with a real cleft, yet it is questionable whether this is fundamental. In fact, a real clefting of the non-PA-construction reading of (1b) would result in a rather awkward utterance like (25).

(25) ??It is not that I think he is crazy

This utterance is acceptable as a variant of (26),

(26) Not that I think he is crazy

but then it is not a construction focusing upon the negative, but rather one that typically focuses upon the entire embedded clause. If one really wants to form a focusing construction for the negative in (24), this seems to require the introduction of some 'dummy' element, like the semantically vague noun 'the case', or the fuzzy particle 'so', in the 'cleft' clause, which can give the functionally central negative a structural independence (normally, 'not' cannot be used as an independent element in linguistic structures; probably, there is only some tolerance in this respect in cases where this negative is not functionally salient, as in (25) and (26)), and which at once anticipates the factivity of the SA to follow, which is in the scope of the main clause negative (i.e. the factive status which is going to be denied).

At any rate, this discussion once again signifies the need to introduce the pragmatic functions at a pre-UP-level, for, no matter whether one accepts the structural identity claim of (1c) and clefts, it will be clear that the argumentation of Dik (1980:210 ff), that it is impossible to syntactically derive clefts and pseudo-clefts from their non-cleft alternatives for reasons similar to those given in 5.2, is equally valid for (1c) as compared to (1b). At the level of the UPs they must be considered to already have different representations.

With respect to the clefts and pseudo-clefts in particular, it is significant to note that in Dik's treatment in terms of FG, which of course does not surpass the level of the UPs, they do not have any representation in common with their non-cleft alternatives. Thus, the fact that they basically do have the same meaning and only differ in pragmatic functionality of the elements in them, remains unexplained. In addition, in order to account for the specific pragmatic status of the clefts and pseudo-clefts Dik has to introduce a special type of UP in which there is a fixed distribution of pragmatic functions, and which communicates the normal pragmatic function assignment procedures in FG. From the perspective of FG this is a rather arbitrary system. Evidently, in the framework of the FPG

view of grammar, with the pragmatic functions mediating between a conceptual level of representation and the UPs, these observations cause no problem at all.

## 8. AN ACCOUNT FOR THE REMAINING 'LEXICAL EXCEPTIONS'

A problem concerning the PA-constructions which we still have not considered so far is that of the lexical exceptions, such as 'hope' and 'fear', which in an utterance such as (11b) apparently do not allow the PA-construction reading. As noted in 5.1, the SCI analysis of these cases cannot be appropriate, but there seems to be a rather straightforward account for them (at least in principle), in the light of the following observations made in the literature.

First of all, it has been noted that the traditional M-predicates (cf. 1.) do not always seem to allow the downstairs reading of a main clause negative. For the mental state predicates, for example, this is the case when they are used in a literal sense. Thus, (27a), in which 'not believe' means 'not accept your claim', cannot be used to communicate the same message as (27b), not even if the sentence parts between brackets are not present (of course, in that case the remaining part of the utterance should be taken in the same sense as if the part between the brackets were present).

- (27) a. I don't believe (you when you say) that he is crazy  
      b. I believe (you when you say) that he is not crazy

Horn (1978:188 ff) signals a number of attempts at explaining or illuminating this observation in the literature (i.e. in terms of parentheticals), but of course, in the framework of a distinction between a conceptual representation and a lexical representation it is easy to state what is going on: these predicates (even without a main clause negative) only say something about the embedded proposition (i.e. express a PA over it) if they are effectively used by the speaker for expressing the Q of the SA as represented in (21), not however when they are expressing a different kind of underlying conceptualization. This is the case in (27), where '(not) believe' refers to a much more complex underlying structure than (21), in which an attitude towards a particular source of information about



the SA is expressed. (Actually, as Horn notes, completely equivalent observations can be made for his extreme-scalar predicates, such as 'know', which only confirms the appropriateness of the restatement of the problem in 3.)

On the other hand, it has been noted that many predicates not belonging to the 'standard' categories of M-predicates do nevertheless allow a downstairs reading of a main clause negative if they are occasionally used for expressing (21) (cf. Horn 1978:204 ff). (28a), containing a verb of communication, clearly relates to (28b) in the same way as (1b) relates to (1a)

- (28) a. I wouldn't say Sally is pregnant  
b. I would say Sally isn't pregnant

These observations clearly suggest that the mental state predicates, just like the verbs of communication, are not 'standard' categories of M-predicates at all, contrary to what is generally assumed. In fact, it seems obvious that the only M-predicates which can be called basic are those which directly name the modality contained in the Q in (21), i.e. the impersonal predicates of the categories of 'be certain', 'be probable', 'be possible', etc., in the epistemic sphere, and 'be necessary', 'be desirable', etc., in the deontic sphere. Predicates from various other categories can be used for the purpose of expressing this modality, too, but this capacity depends on the nature of these categories. Their semantics must allow the unambiguous indication of the value of the modality, in a simple and straightforward way. It is evident that in general the semantics of the mental state predicates is better qualified for this purpose than the semantics of the communication predicates. Hence the former are more commonly used for the expression of (21) than the latter.

This view on the basicness of predicate categories for expressing (21) corresponds with the observations concerning the different occurrence properties which must be fulfilled by the predicates of these categories to allow a downstairs reading of the upstairs negation (again this is valid for all the M-predicates, not only the mid-scalars in Horn's

model). Thus, while such a reading is possible for the basic predicates under any condition, the mental state predicates and communication predicates must be used in the first person singular, present tense. As Cattell (1973) notes, it is sometimes possible to get downstairs readings with 3rd person subjects in the main clause (but still, present tense is required), yet this is only the case in reported speech, i.e. when the speaker explicitly reports the subject's view live, so to speak. In addition, the communication predicates must occur in the conditional form.

Incidentally, the fact that the mental state predicates only allow a downstairs reading of the negative when they are first person present prompted R. Lakoff (1969) to qualify them as performatives. As Cattell (1973) shows, such a qualification is not appropriate because these predicates do not signify and perform an action of the speaker. Nevertheless, it has generally been acknowledged, without explanation, that they must have something in common with the performatives. In the light of the nature of the conceptual representation in (21), this common characteristic can be made comprehensible. In FPG, the performatives and the M-predicates both originate from basically the same level of representation: they both signify a meta-perspective with respect to a particular SA, which the speaker produces here and now (cf. De Schutter and Nuyts 1983:394). The difference is that in the case of a performative this meta-perspective involves the specification of the kind of goal the speaker has with respect to the SA under consideration, while in the case of a M-predicate it is a matter of qualification of the epistemic or deontic status of the SA. Just like the performatives, if the speaker uses the predicate with a third person subject in reported speech, he adopts the subject's conceptualization of (21), and 'performs' it for him, so to speak. And again just like the performatives, if the predicate is used in the past tense it does not qualify the SA here and now, but it expresses some attitude which the speaker/subject once had, irrespective of his attitude here and now. In that case, the Q is part of the SA under consideration in the discourse.

Within the different non-basic categories of M-

predicates, then, not each predicate qualifies equally well for the expression of (21). In fact, the same requirements as for the categories in general apply: they must allow a straightforward expression of the M, which implies that they must allow the expression of a personal point of view, and that they must be semantically simple. Thus, among the communication predicates, such simple predicates as 'say' and 'advise' can be used for our purpose, since they imply a simple and straightforward personal view on the status of the SA. But 'suggest' and 'propose' cannot, because they involve a much more complex attitude concerning the SA, involving rational arguments.

Now, it seems that precisely the same principle can be invoked to exclude such mental state predicates as 'hope' and 'fear' from the possible M-predicates. As compared to predicates such as 'believe' or 'know', they are obviously less clear about the status of the SA they qualify, in terms of likelihood, and they also involve an emotional point of view in terms of liking or disliking the SA. The interpersonal, interdialect and interlanguage variation with respect to the possibility of using such predicates for expressing a modal qualification should be ascribed, then, to differences in the exact lexical meaning of these predicates. Thus, Dutch 'hopen' might provide a more straightforward indication as to the likelihood of the SA than English 'hope'; probably the Dutch predicate is also somewhat more personal, noncommittal, while the English predicate contains an element of real expectation (in contexts possibly even of warning) with respect to the realization of the SA under consideration. Certainly this claim deserves further inquiry. Of course, it is hard to see how it could get an empirical basis. However, a comparative corpus analysis of the uses of the predicates in Dutch and English could probably provide some indications.

## 9. ON THE SYNTACTIC BEHAVIOR OF THE PA-CONSTRUCTIONS

Another aspect of PA-constructions which has not been considered so far is their peculiar behavior with respect to a number of surface structural phenomena noted in 1. I will not be able to go into detail here with respect to these questions, since the majority of the problems involved require an extensive investigation on their own, for which no time and space is available here.

For instance, the behavior of NPIs in PA-constructions is very intricate, as Horn (1978:143 ff) has clearly shown, and undoubtedly a basic account will require a consideration of the behavioral properties of these items in other circumstances as well. One probable factor in the explanation of their behavior in PA-constructions is the strength of the negativity of the Q. If the main clause expresses negativity with a relatively great degree of certainty, i.e. if the main clause expression is not too close to point N on the negative side of scale (20), it might be able to cause NPIs over the clause boundaries, while expressions close to point N might be too weakly negative about the embedded clause to trigger NPIs in that clause. But this cannot explain everything, for why then can the expressions on the extreme negative pole of the scale not trigger NPIs?

I will briefly discuss two phenomena, however, to demonstrate that at least they do not pose serious problems for the above analysis of PA-constructions.

First, consider the possibilities of using tag questions on the PA-constructions. As noted in 1., R.Lakoff (1969) used TQs as an argument for a syntactic NR-rule, but Cattell (1973) has already shown that her argument is not conclusive. Lakoff's argument is based on the presupposition that TQs under normal circumstances take opposite polarity as compared to the clause they belong to. Yet Cattell shows that this is not true. On the basis of an analysis of simple sentences, he shows that the speaker's use of a TQ with opposite polarity indicates that the speaker is presenting his own point of view which he nevertheless considers to be open for discussion or concerning the accuracy of which he

has no absolute certainty, whereas the speaker's use of a TQ with the same polarity indicates that he is forwarding a point of view which is conceivable in his UI, but which is not his own.

It will not require further discussion to see that under this analysis of TQs, the following observations concerning the possibility of using them on our type of constructions are perfectly natural in the light of our analysis:

- (29) a. It is impossible that he has done it, has he?  
b. \*It is impossible that he has done it, hasn't he?  
c. It is certain that he hasn't done it, has he?  
d. \*It is certain that he hasn't done it, hasn't he?
- (30) a. I don't believe he has done it, has he?  
b. \*I don't believe he has done it, hasn't he?  
c. I believe he hasn't done it, has he?  
d. \*I believe he hasn't done it, hasn't he?
- (31) a. I don't know he has done it, has he?  
b. \*I don't know he has done it, hasn't he?  
c. It is possible that he hasn't done it, has he?  
d. \*It is possible that he hasn't done it, hasn't he?

PA-constructions always express the speaker's opinion, hence they can always take TQs, but these have to be opposed in polarity to the value of the Q of the SA in (21). (And this goes for the extreme-scalars in Horn's model as well as for the mid-scalars.) As to the derivation of the TQs, then, in FG/FPG this is not a matter of syntactic expansion or something like that. They are already introduced at the level of the UPs, more or less in the same way as a tail-constituent, and the cause for their introduction, and the determination of their polarity, are entirely a matter for the pre-UP-levels. The decision to construe them is a matter of the relationship between SN and CSN, and the speaker's intention to receive the hearer's opinion; the polarity is determined by the value of the Q at the sentence level conceptual representation (21).



A second case is sentence pronominalization. In this respect, the facts are not quite as simple as has been supposed in the traditional discussions. First of all, it is easy to provide examples similar to (5), involving extreme-scalar predicates in Horn's model. Thus, in

(32) It is impossible that Bill has paid his taxes. And Mary knows it, too.

what Mary knows is that Bill hasn't paid his taxes. So, again, this is an argument for our reconception of the problems involved. But, on the other hand, it is also possible to find examples in which this principle does not work, even in case of the presence of mid-scalars:

(33) I don't think Bill paid his taxes. And Mary doubts it, too.

What Mary doubts is that Bill has paid his taxes, not that he has not paid them. I will not try to provide an account for these facts here, but as to the principles of such an account it is evident that, according to the basics of syntax in FG/FPG that no structure changing operations are allowed in the syntactic processing of utterances, 'it' cannot be the result of syntactic deletion. In fact, anaphoric reference is, once again, a purely conceptual and strongly discourse-bound matter which is to be accounted for at pre-UP levels, and the 'it' is introduced as such in the underlying predication. Its reference, then, is somehow determined by a combination of the Q expressed over the SA by the speaker in the foregoing clause, and the Q of this same SA the speaker ascribes to the subject (Mary) in the present clause.

## 10. CONCLUSIONS

No matter how incomplete this analysis of the NR-constructions may be, it seems to allow 3 conclusions.

(i) It demonstrates that a functionalist approach to language such as underlies FG/FPG opens up perspectives for the analysis of natural language utterances which in a non-functionalist approach most probably remain blocked. Only the functionalist perspective could lead us to the more global picture of the construction type involved here, which allowed us to unmask NR as a fake problem based on incomplete and biased data. Functionalism is once again proven to be an indispensable tool for the linguist.

(ii) At the same time, our analysis demonstrates that a functionalist approach is not necessarily a superficial or concrete approach, as is frequently claimed. An argumentation on the basis of the functionality of utterances requires distance from the superficial appearance of utterances, since this appearance all too frequently covers what is really at stake, as the NR case has clearly shown.

(iii) More specifically with respect to FG and FPG, it seems that our analysis nicely fits into the view defended in FPG that in the process of language (discourse) production there must be assumed to be levels of representation and processing deeper than the level of the UPs, and moreover that these levels systematically lead to the choice of structures at the level of the UPs for specific utterances also on the basis of the pragmatic functionality of the various elements at these deeper levels. It seems unavoidable to assume that utterance production is an intricate matter of lexical choice and syntactic expression in the light of a complex system of underlying cognitive-pragmatic relationships. Hence, FG does need the elaboration in the direction of the deeper levels of representation and processing proposed in FPG if it is to remain a successful linguistic model.

As to the nature of these deeper levels, our analysis probably has not provided decisive arguments for the FPG view that they must be non-verbal in nature. Yet it is hard

to see how decisive arguments in this respect could be provided. Most probably, the only way of deciding is on the basis of operational criteria. Thus, it remains to be seen how the variety of observations made above, with respect to the variability of the use of the predicates involved and their peculiarities in what they express, can be accounted for in the view expressed by Dik (1986), namely that knowledge might be represented in the form of systems of predications of the same type as the UPs in FG, i.e., in a verbal, lexical format.

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## LIST OF MOST IMPORTANT EXAMPLES

- (1) a. I think he is not crazy  
b. I don't think he is crazy  
c. It is not the case that I think he is crazy
- (8) a. It is certain that he is not crazy  
b. It isn't certain that he is crazy
- (14) a. It is probable that he is not crazy  
b. It isn't probable that he is crazy  
c. It is improbable that he is crazy  
d. It isn't improbable that he is not crazy
- (15) a. It is likely that he is crazy  
b. It isn't likely that he is not crazy  
c. It is unlikely that he is not crazy  
d. It isn't unlikely that he is crazy
- (16) It is (very well) possible that he is not crazy
- (17) It is impossible that he is crazy
- (18) I doubt he is crazy





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