THE CLASSIFICATION OF NEGATIVE POLARITY ITEMS: EVIDENCE FROM DUTCH AND AFRIKAANS

THESIS

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ABSTRACT

In this thesis I discuss the problem of negative polarity items (NPIs). NPIs are items that have to be licensed by a certain group of expressions. In this group of expressions which can trigger NPIs we find, among other things: negations, adversative expressions, questions and conditionals. I show that there is an important problem for a grammatical approach to negative polarity: the group of expressions which can licence NPIs can't be adequately defined in a grammatical way. There is, however, a semantic way of defining the group of expressions that can licence NPIs. In semantics the group is often referred to as the group of "triggers". It can be proven logically that the group of triggers can be divided into four subgroups: a group of downward-entailing expressions, antimultiplicative expressions, anti-additive expressions and antimorphic expressions. By carrying out a corpus study I find evidence for the hypothesis that the way in which NPIs are licenced by the triggers with different logical properties originates from the different grammatical classes of NPIs (negative polarity nouns, negative polarity adjectives and negative polarity verbs). Since there is evidence for this causal relation, I argue that a grammatical approach to NPI-triggering is necessary from a formal point of view. I give a Minimalist account of NPI-triggering. To make the Minimalist Program suitable for NPI-triggering I have to assume, however, that the semantic information about triggers is available in the lexicon of the MP.

CONTENTS

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The idea for this thesis was developed together with Victor Sanchez-Valencia, my advisor for my Doctorandus thesis at the University of Groningen in the Netherlands. I had the idea of doing a cross-linguistic research on Dutch and Afrikaans. I wanted to investigate whether the way in which negative polarity items were triggered was consistent between languages. Victor Sanchez-Valencia suggested that I should do a corpus study. Corpus studies are a relatively new phenomenon in linguistics. It is only since the eighties that large language corpora are have been compiled. It turned out that the Internet provided an ideal corpus for the particular research I was carrying out. The data I collected for my corpus all come from the archives of newspapers that are available on the Internet.

The Internet has not only been a useful source of data, it was also on the Internet that I found information about various universities in South Africa. I sent an e-mail to several universities, in which I unfolded my plans for a Masters thesis. Thanks to the enthusiastic response of Prof Barbara Bosch I decided to go to Rhodes. Prof Bosch offered to supervise my thesis at Rhodes. Unfortunately she hasn't been able to supervise the thesis to its completion. In October this year she passed away.

Financially my studies in South Africa have been made possible by the VSB-Bank and by Royal Dutch/Shell. In March 1997 I applied for a VSB scholarship, a scholarship especially offered to Dutch students who decide to go abroad for a while after their graduation. I explained my ideas and after a selection procedure the scholarship was granted to me. Shell has been my sponsor during all my years of study. When I informed the Shell Scholarships Committee about my plans to go to South Africa, they decided to extend the scholarship for one additional year. Without the opportunities offered by the VSB-Bank and Royal Dutch/Shell, this Master's thesis would have been impossible.

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INTRODUCTION

In this thesis I discuss the topic of negative polarity items (NPIs). NPIs appear in the contexts of certain expressions, usually referred to as triggers. Originally negation was thought to trigger NPIs. That is why NPIs are called *negative* polarity items. However, questions, conditionals and superlatives also are found to trigger NPIs. Moreover, not all NPIs show the same behavior towards triggers. Some can and others cannot be licensed by certain triggers. This complicates the matter. It means in the first place that the notion of trigger has to be redefined.

In Chapter 1 I will show what attempts have been made over the last three decades to account for NPIs. These approaches can be divided into two main subgroups. Firstly there are attempts to account for negative polarity in a Chomskyan framework. The main reason why these attempts fail is because these approaches lack a proper definition of the trigger. The second subgroup consists of semantic approaches. The semanticists define triggers according to their logical properties. Although there are some problems with this approach, the semanticists are capable of adequately defining the trigger. Additionally they can account for the different ways in which groups of NPIs are triggered.

Chapter 2 consists of a corpus study. For fifteen expressions data sets are formed in order to find out in which environments these items occur. From the corpus study it becomes evident that the semantic approach is capable of dealing satisfactorily with negative polarity. A second conclusion can be drawn, however: the logical classification of NPI triggers has a grammatical basis. If this is the case it must somehow be possible to provide a grammatical account of NPI triggering.

It is concluded in Chapter 2 that there is a grammatical basis for triggering. In Chapter 3 the possibilities for NPI triggering in Chomsky's Minimalist Program are investigated. Since checking is the main apparatus for accounting for grammatical properties in the Minimalist Program, a checking approach to triggering is attempted. This attempt fails, however. A second approach which uses c-command proves to be more successful. C-command-rules were used in

earlier grammatical approaches (Klima 1964 and Jackendoff 1972). The approach in Chapter 3 combines the grammatical notion of c-command with the semantic definitions of triggers from Chapter 2. This is possible if it is assumed that semantic information about triggers is available in the lexicon.

Of course this thesis is incapable of dealing with all exceptional cases of NPI triggering. A considerable number of questions remain open. What I have tried to show in here is that negative polarity is a complicated problem in which both syntax and semantics have a part. It might very well be that besides these two, pragmatics also plays a role. Nevertheless, in this thesis I have shown that a combined syntactic-semantic approach is quite capable of accounting for non-exceptional cases of NPI triggering.

CHAPTER 1

POLARITY

1.1 Introduction

In many, if not all languages, a heterogeneous group of lexical items can be found that seem to have one property in common: they are found in negative contexts. The existential *any* (but not the free choice *any*) is an instance of such an item. There doesn't seem to be a special syntactic position for these items and they belong to various grammatical classes. Lexical items that belong to this particular group are usually referred to as "negative polarity items" (NPIs). In the sentences below, the instances of NPIs are italicized and the negations are in bold.

(1) a. Amy did**n't** *lift a finger* to help her friend.
b. *Amy *lifted a finger* to help her friend.
(2) a. I have**n't** seen my grandmother *in years*.
b. *I have seen my grandmother *in years*.
(3) a. The old donkey would**n't** *budge* an inch.
b. *The old donkey would *budge* an inch.
(4) a. Dad *need* **not** know about this.
b. *Dad *need* know about this.
(5) a. Claire is **not** going to the party *either*.
b. *Claire is going to the party *either*.

These sentences show in the first place that NPIs aren't items of one particular grammatical class. The list above shows sentences that have an idiom (*to lift a finger*), a PP (*in years*); the verbs *to budge* in and *to need* in and the adverb *either* are NPIs. All of these lexical items belong to the large group of NPIs. Furthermore it appears from the sentences that, though the b-sentences are ungrammatical, only a negation has to be added to make them acceptable. This may seem to be a simple observation but this is actually one of the two reasons why the number of articles on negative polarity is quite large (Klima 1964, Baker 1970 Jackendoff 1972, Fauconnier 1975, 1979, Zwarts 1981, 1986, Linebarger 1981, Hoeksema 1983, Van der Wouden 1985, 1994). Despite the large number of approaches, there is not one which is fully satisfactory for all aspects of polarity. This is because the matter is somewhat more complicated than shown in the sentences (1) to (5). Consider the following sentences, which contain items that we have

recognized as NPIs in the sentences above, but which lack an overt negation:

(6) The old donkey is **too** tired to *budge* an inch.
(7) Claire was **surprised** that Chuck had *lifted a finger* to help Billy.
(8) *Need* I worry?
(9) **At most three girls** have *any* cigarettes left.
(10) Kim is **reluctant** to do *any* work.
(11) **Before** you buy *anything*, make sure you really need it.

In the sentences (6) to (11) it is not a negation that licenses these NPIs. In (6) it is the adverb *too* that triggers *to budge an inch*, in (7) it is the verb of propositional attitude *to be surprised* that makes the context suitable for the NPI, whereas in (8) the negative polarity item *need* is allowed because it is found in a question (so here it is not even a lexical item but rather a context that makes the environment suitable for the NPI). Sentence (9) has a (quantifier) NP as a trigger for *any*, in (10) the adjective *reluctant* triggers *any* and finally in (11) the conjunction *before* serves as a licenser.

All these items are able to license NPIs. In earlier work (Ladusaw 1979 and Van der Wouden 1994) the term *trigger* is used to refer to these items. The sentences (6) to (11) don't exhaust the list of triggers. The examples above illustrate that there are more possible triggers than simply negation. There is another complication: not all NPIs can occur in all contexts. Recall that *either* was an NPI and that *reluctant* was capable of making the contexts suitable for NPIs. Despite these observations, the following sentence has to be ruled out.

(12) *Bill doesn't want to go to the party and Kim is reluctant to go either.

So the first reason why NPIs puzzle linguists is because of the contexts in which they occur. The second reason why NPIs have been a frequent subject of research becomes clear in the following sentences.

(13) a. *The guy, who had **never** said a word to me, *lifted a finger* to help me.
b. *Claire is **not** amused that Ian is going to the party *either*.
c. *That John did**n't** go bothered *anyone*.
d. That *anyone* laughed at all **surprised** Bill.

What is wrong with the sentences (13)a to c? What these sentences show is that the trigger has

to be in a certain place in a sentence to license an NPI. In (13)a, b and c the NPIs are not "in the scope of" the negation. In (13)d the NPI *anyone* is in the scope of the trigger *to surprise*. This shows that an NPI doesn't have to be situated left of the trigger to be in its scope. How to define the notion "in the scope of"? I will not answer this question here. The ideal definition, however, has to cover all possible grammatical trees of well-formed sentences that contain both an NPI and a trigger, whereas all the ungrammatical occurrences of NPIs should be ruled out by the definition.

It is the task of linguists (1) to find out what property these triggers have in common which allows them to license NPIs and (2) to find a proper way to treat the constraints of scope. Here, in this introduction I will only give a short overview of the literature. In the following sections, however, some of the approaches will be discussed at length. I will discuss these approaches chronologically. Firstly, I will show the syntactic approaches of Klima (1964) and Jackendoff (1972). Both of these approaches consist of an attempt to define scope. Furthermore they claim that it is negation (either overt or covert) that makes a context suitable for NPIs. Fauconnier (1975, 1979) proposes a pragmatic approach. For Fauconnier, pragmatical implication is an important feature in the contexts of NPIs. Ladusaw (1979) shows that Fauconnier's pragmatical implication has logical features. Ladusaw reformulates Fauconnier's pragmatic implication into a semantic implication. He claims that a particular form of implication, viz downward entailment, is the one and only feature that distinguishes triggering contexts from contexts that lack the triggering ability. Ladusaw's approach is followed and developed further by many other linguists (e.g. Zwarts 1981, 1986, Hoeksema 1983, Van der Wouden 1985, 1994) but has had some serious criticism as well (see Linebarger 1981 and Klooster 1993). It seems that Ladusaw's semantic approach cannot deal with the matter of polarity all on its own; it seems that besides downward entailment there are more requirements that have to be met for NPIs.

NPIs are not the only kind of polarity items. There is a second kind, viz positive or assertive polarity items (PPIs or APIs). Instances of PPIs are *some* (quantifier), *already* and *still* (both adverbs) and *would rather* (verbal expression). Negative Polarity Items can appear under the scope of negation or rather, under the scope of a trigger, whereas Positive Polarity Items seem to avoid the scope of lexical items that trigger NPI. Consider the following sentences:

(14) *John did**n't** leave *some* of the food.
(15) *Jane has**n't** *already* left.
(16) *The ants are**n't** *still* eating from the sugar.
(17) *Beth would**n't** *rather be* in Montpellier.

The italicized PPIs are not allowed to occur in the scope of a negation[1], as we can conclude from (14) to (17). What about the contexts in the sentences (6) to (11) that have been shown to have the triggering property? In (18) to (23) below the same contexts are found, but the NPIs are replaced by PPIs.

(18) Claire was **too** upset to *still* live in the haunted house.
(19) Claire was **surprised** Chuck had *already* helped Billy.
(20) Would you *rather* be in Montpellier?
(21) **At most three girls** have *some* tobacco left.
(22) Kim is **reluctant** to do *some* work.
(23) **Before** you buy *something*, make sure you really need it.

The contexts in (18) to (23) trigger NPIs. From this we might conclude that these contexts share some features with negation, which allow them to license NPIs. However, in (18) to (23), unlike the sentence negation *not*, it is not the case that the NPI-triggers disallow PPIs in their context. All of the sentences above are grammatical. This leads to the conclusion that PPIs are not just positive counterparts of NPIs, though it is obvious that the two are related. We can query whether or not the contexts in (18) to (23) are negative or have a certain degree of negativity. It is obvious though, that they play a role in polarity.

To summarize this introduction: polarity items can be categorized into two kinds, negative and positive polarity items. Both kinds are sensitive to certain contexts with triggering properties; NPIs need these contexts, whereas PPIs avoid them. Right now it will be sufficient to realize that the class of triggers is a rather diverse one. Furthermore, it becomes clear that it is not the case

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[1] There is at least one exception to make here: emphatic or echo-negation combines well with PPIs. An example of a PPI is *already*.

(i) a. George has (*not) already left.
b. George has NOT already left.

Sentence b above can be uttered if someone has erroneously supposed that George has left already. I refer to Seuren (1976) and Van der Wouden (1988) for more about echo-negation.

that the simple fact of having a trigger in a sentence is a sufficient condition for negative polarity; the trigger has to meet some syntactic requirements in terms of scope.

In the remainder of Chapter 1 I want to give an overview of the attempts made in the last three decades to give a proper description of triggers, the scope of triggers and polarity items. There have been a number of syntactic approaches, which I will discuss in section 1.2. However, all of these approaches show some flaws. The syntactic approaches were followed by pragmatic and by semantic approaches. I will go into the semantic approaches in section 1.3. As we will see in 1.3, the semantic approaches have met with a certain amount of criticism as well. In chapter 2 I will give a corpus study of Dutch polarity items and their Afrikaans counterparts. The reason for this corpus study is to get an understanding of the variety shown by polarity items. In chapter 3, I will use the findings of the corpus study to come up with an approach of my own.

1.2 Syntactic approaches

1.2.1 "In Construction with"

As we have seen in the preceding section, there are at least two required conditions for NPIs (and two required conditions for PPIs as well, though, as I will show further on, these differ from the conditions for NPIs). The first condition is that NPIs must be in the scope of certain lexical items, introduced as triggers. Secondly, lexical items that can function as triggers seem to have a certain property that distinguishes them from other items. Most obviously, the negation *not* bears that property, but, as I have pointed out (in the sentences (6) to (11)) at least determiners, adversative verbs (like *to surprise*), *before-* and *if*-clauses and *too* show similar triggering abilities. Until the 1970s it was believed by many linguists (in this chapter I will discuss Klima (1964) and Jackendoff (1972)) that the puzzle of NPIs was a purely syntactic matter.

Klima (1964) provides one of the strictly syntactic approaches to NPIs. Consider the sentences (24)a and b.

(24) a. The man whom I saw didn't bring anything.
b. *The man whom I didn't see brought anything.

Obviously this problem can be solved by defining scope. Sentence (24)a is a grammatical sentence because the negation has scope over the NPI *anything*. In (24)b the negation is in a relative clause, so that it fails to have scope over the NPI *anything* in the main clause. To be able to deal with scope, Klima requires that the trigger has to be "in construction with" the NPI.

(25) Definition: a constituent is "in construction with" another constituent if the former is dominated by (that is occurs somewhere lower in the branch of) the first branching node that dominates the latter. (Klima 1964:297)

Recall that in section 1.1 the problem of polarity was considered to be twofold. The definition in (25) is an attempt to solve one of the parts of the problem: the scope problem. That leaves the problem of the triggers.

Baker (1970) accounts for triggers. In this account, it becomes clear that it is not the trigger alone, but rather the trigger in the context of the sentence that licenses polarity items. *Would rather* was defined as a PPI in section 1.1. We would expect to find *would rather* only in contexts without triggers. Consider (26), however:

(26) There isn't anyone in this camp who wouldn't rather be in Montpellier.

Note that in this sentence, the PPI *would rather* is in the scope of a negation. Does that mean that the observation we made in section 1.1 about PPIs is falsified? Baker thinks we don't have to draw that conclusion immediately. According to him the negation in the subordinate clause in (26) is reversed by the negation in the main clause. To formalize this, Baker designs the polarity-reversal rule:

(27) Polarity-reversal Rule

Neg	X	[α negative]	Y	
1	2	3	4	→
1	2	[-α negative]	4	

This rule reverses the derivational feature specification of a clause. It applies only in sentences

which have a negative (Neg) context, and in which a polarity sensitive item [α negative] is found. The way this rule works is as follows: every clause starts with a clear feature specification, that is the derivational feature specification will be [-negative]. If there is a negation in the clause, the polarity-reversal rule applies in the clause and switches this derivational feature specification to [+ negative]. If there is no negation in the clause the rule doesn't apply. Furthermore, NPIs have the lexical feature specification [+negative], whereas PPIs have the lexical feature specification [-negative]. This means that NPIs must be in a clause that bears the derivational feature specification [+negative] whereas PPIs require a [-negative] context. To see how the polarity-reversal rule works, consider the following sentences:

(28) a. John has left already.
b. *John has left yet.

First consider (28)a. The polarity-reversal rule is going to apply in (28)a because it doesn't have the appropriate negative (i.e. Neg X [α negative] Y) structure. This means that the derivational feature specification will not be changed, but remains [-negative]. The derivational feature specification required by the PPI *already* is [-negative] so that the lexical and derivational feature specifications match and the sentence is grammatical. For (28)b too, the derivational feature specification is not changed by (27). Here, however, the lexical feature specification of the NPI *yet* doesn't match with the derivational feature specification and thus the sentence is ruled out. This leads Baker to the following definition:

(29) Definition: Negative-polarity items are appropriate in structures within the scope of negations, whereas affirmative-polarity items are appropriate elsewhere. (Baker 1970:179)

It will be shown later that this definition is not completely accurate. What Baker's approach shows is that it is not quite the negation or trigger that makes the context suitable for NPIs, but rather the way the trigger fits within the context. Now let us turn to sentence (26), repeated below:

(30) There isn't anyone in this camp who wouldn't rather be in Montpellier.

The NPI *anyone* requires a derivational feature specification [+negative]. Since there is a negation in the main clause, *anyone* will get its required specification. The subordinate clause

seems to raise a problem. *Would rather* has the lexical feature specification [-negative]. The clause is negated, so rule (27) reverses the derivational feature specification into [+negative]. This means that (26) should be ruled out. The subordinate clause, however, is part of the structure "Neg X [-α negative] Y" itself, so the polarity-reversal rule will apply twice, and the context of the PPI *would rather* will be [-negative] as required.

Above, we have seen that there are requirements in terms of syntactic and semantic contexts. The requirements were formalized by Klima and Baker in (27) and (29). At this stage we can return to the triggering elements. Recall that in the class of triggering elements besides negation, there are more contexts that have triggering properties. That *not* is a negation needs no discussion. But what about adversative verbs and adjectives? Take the adjective *unwilling*. *Unwilling* has the negative prefix *un-*. So it is clearly the result of adding a negation to *willing*: *negation+willing* = *unwilling*. Klima (1964), for this reason, rewrites *unwilling* as *neg+willing*. Adversatives like *to doubt* or *to regret* and the adjective *reluctant* have no negative affix, but, in spite of this, they do seem to have a negative implication. Klima (1964) calls them inherently negative; that is, the negation has no phonological form. This allows him to write *doubt* as *neg+doubt*, *regret* as *neg+regret* and *reluctant* as *neg+reluctant*.

In Ladusaw (1979) the approach outlined above is considered erroneous for two reasons. According to Ladusaw the decompositional approach is "unattractive on formal grounds but inadequate on empirical grounds as well" (Ladusaw 1979:105). Take for instance the following examples:

(31) It is **hard** to find *any* squid at Safeway anymore. (Ladusaw 1981:105)
(32) *It is easy to find *any* squid at Safeway anymore.

To account for the grammaticality of (31) we follow Klima and decompose *hard* as the inherent negative *neg+easy*. Ladusaw points out that between *hard* and *easy* there is a neutral area, in which things are neither hard nor easy.

(33) It wasn't easy to find any squid at Safeway, but it wasn't hard either.

Zwarts (1981) also criticizes Klima's decompositional approach to inherent negatives. Zwarts sees a problem in sentence (34).

(34) Deze beambte heeft zich **zelden** *hoeven* in te spannen. (Zwarts 1981:41)
'This clerk has seldom had to extend himself.'

Here the NPI *hoeven* (to need) is triggered by *zelden* (seldom). For Klima *zelden* would be an inherently negative adverb, since there is no negative affix found on the verb. *Zelden* would have, according to Klima, a negative assumption. That means that we have to analyze *zelden* as a negation of its counterpart: *vaak* (often). Thus we can restate *zelden* as *niet+vaak*. For Zwarts (1981) the negative assumption is too vague. He points out that any word can be decomposed as the negation of its counterpart. For example *vaak* can be decomposed as *niet+zelden*. One can debate the question of *niet+zelden* being negative or positive. If we use *niet zelden* in a sentence to trigger the NPI *hoeven,* the result is anomalous.

(35) *Deze beambte heeft zich **niet zelden** *hoeven* in te spannen.
'This clerk has not seldom had to extend himself.'

Zwarts and Ladusaw want to find a semantic solution for the triggering problem. For them Klima's analysis is not satisfactory. Both Ladusaw and Zwarts have developed semantic approaches, and I will present these approaches in section 1.3.

Klima's treatment of adversative verbs and adjectives might not be completely satisfactory to Ladusaw and Zwarts, but Klima himself finds other problems in the course of his work: he could deal with the adversatives by calling them inherently negative, but what about triggering contexts like the *if-* and *before*-clauses, questions and *only* and *too*? Are they inherently negative as well? This is doubtful. And, if they are not, they cannot be given a *neg*-feature. If it is not the *neg*-feature, what else makes them triggers? To deal with this problem, Klima introduces the feature *affective*. He states: "As for the similarities of *neg*, *wh* and *only*, these will now be described as resulting from the presence of a grammatico-semantic feature to be referred to as *Affect(ive)* (Klima 1964:313)".This means that a lexical item is a trigger if it is an affective. Zwarts (1981:45) points out that simply labelling the triggering lexical items affectives does not provide an answer to the question: "what properties do triggers have in common that makes them capable of triggering NPIs?".

Jackendoff (1972), however, follows Klima to a considerable extent, although he sees a problem in Klima's definition of scope. Although sentence (36) is a grammatical one, *none* is not *in construction with* the pronominal *anyone,* so the sentence is ruled out by Klima's definition.

(36) None of these examples will convince anyone. (Jackendoff 1972:349)

To solve this problem, Jackendoff redefines scope. He replaces Klima's *in construction with*-rule as given in (25) with his own *command*-rule.

(37) Definition: Node A commands node B if the lowest S which dominates A also dominates B. (Jackendoff (1979:350))

The *command*-rule is capable of handling problematic sentences like the following:

(38) That Olive had stolen anything was never proven.
(39) *That John didn't cough bothered any doctors.

Figures 1 and 2 below show the phrase structure for the sentences (38) and (39) respectively.

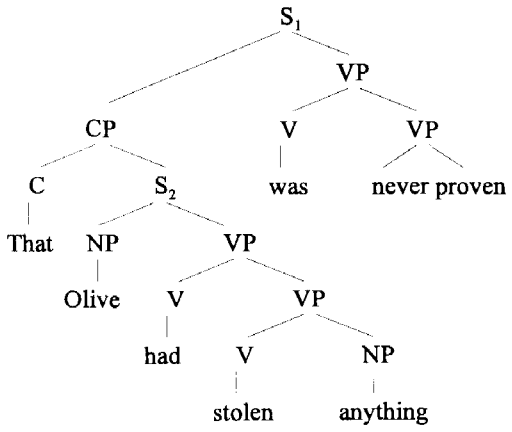

Figure 1

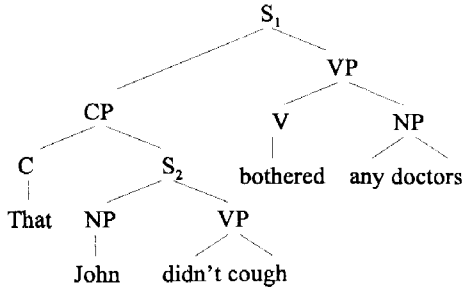

Figure 2

In Figure 1 the lowest S_2 that contains the negation *never* is the node S_1 of the main clause. Thus the NPI *anything* is commanded by the negation *never* and the sentence is fine according to Jackendoff's *command*-rule. In Figure 2, the negation is bound by the lower S_2 of the subordinate clause. The negation is incapable of commanding *any* in the higher S_1 and sentence (39) is ruled out correctly by Jackendoff's *command*-rule.

So far Jackendoff's approach seems satisfactory. However, Linebarger (1981:13) comes up with some examples that are not captured by the *command*-rule.

(40) I didn't say/*add/*yell that I had ever been to Istanbul.
(41) I don't think/*regret that she can help doing what she does.

The problem above is that it seems to be an idiosyncratic property of the verb in the main clause, affecting whether or not the negation in the main clause has scope over the NPIs in the subordinate clause. Linebarger gives more sentences that are problematic for Jackendoff's account. Compare the following sentences:

(42) John didn't earn a red cent yesterday.
(43) *John didn't earn a red cent with enthusiasm.

According to Linebarger, Klima's and Jackendoff's approaches fail to give a proper treatment of scope because they work at the level of Surface Structure (SS). Linebarger claims that the problems with the sentences in (40) to (42) can be solved by assuming a level of Logical Form. In the next section Linebarger's approach is described.

1.2.2 The Immediate Scope Constraint

The account Linebarger (1981) proposes deals with scope on the level of Logical Form (LF). In the special case of the sentences (44) and (45), it is the causal relation in the sentences that causes the difference. In both sentences a cause (S2) can be found and also something that is caused (S1). Below the cause and the caused are marked.

(44) *[John's paper didn't hold a candle to Mary's $_{S1}$] [because he had help $_{S2}$]
(45) [John's paper didn't hold a candle to Mary's $_{S1}$] [because he got drunk $_{S2}$]

The logical difference between these two sentences is according to Linebarger (1981:27):

(46) CAUSE (S1, NOT S2)
(47) NOT CAUSE (S1, S2)

(46) is the logical representation of (44), whereas (47) represents (45). It is essential in the (47) that NOT should have immediate scope over the NPI *to hold a candle*. In (46) NOT has no scope over the NPI so that the sentence is not grammatical.

Now turn to the sentences (48)a and (49)a. Linebarger (1981:29) gives the LF representations (48)b and (48)c and (49)b and (49)c respectively.

(48) a. *That doesn't hold a candle to most of Frank's ideas.[2]
b. NOT [MOST x: x is an idea of Frank's] (that holds a candle to x)
c. [MOST x: x is an idea of Frank's] NOT (that holds a candle to x)
(49) a. *She doesn't budge for everybody.
b. NOT [∀x: x is a person] (she budges for x)
c. [∀x: x is a person] NOT (she budges for x)

First consider the readings under c. These readings are unavailable for a reason not related to polarity: the universal quantifier ∀ can't have scope over NOT. In the readings under b, NOT has wide scope over the quantifier MOST, and NOT has scope over the NPIs as well. Nevertheless (48)a and (49)a are ungrammatical. Before explaining why, consider the sentence below:

(50) a. She doesn't run for everybody.
b. NOT [∀x: x is a person] (she runs for x)

For sentence (50), which doesn't contain an NPI, an LF-representation similar to (49)b is available. Apparently there is a special constraint on sentences which contain NPIs: it is because of the NPI that (49)a contains that it is ungrammatical. The reason why (48)b and (49)b aren't possible reading for (48)a and (49)b is that there are "logical elements" ("most" and the universal

[2] For Linebarger this sentence is ungrammatical. However, other people claim that the sentence sounds fine.

quantifier respectively) intervening between NOT and the NPI. Consider a similar case below:

(51) a. John didn't do any of his tasks enthusiastically.
b. [∃x: x is a task] ENTHUSIASTIC (John (NOT (John does x)))
c. NOT ENTHUSIASTIC (John, ([∃x: x is a task] (John does x)))
d. NOT ([∃x: x is a task] ENTHUSIASTIC (John, (John does x)))

Of the possible LF-representations, first of all (51)b is ruled out because it has no scope over the NPI *any*, here represented by the existential quantifier ∃. The problem with (51)c again is that there is a "logical element" (here ENTHUSIASTIC) intervening between NOT and the NPI[3]. This leaves (51)d as the only available representation of (51)a[4].

In the sentences above it has been shown that the definition of scope of the logical representation of the negation NOT has to meet two requirements: (1) NOT has to have immediate scope over the NPI and (2) there can not be a "logical element" intervening between NOT and the NPI. Linebarger (1981:30) defines scope as follows:

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[3] Martijn Bredschneijder (p.c.) pointed out that the same phenomenon is found in the double negation in Afrikaans. Consider the following examples:

(i) ...dat daar [baie studente en geen professors] is nie.
'...that there are many students and no professors.'
(ii) *...dat daar [geen professors en baie studente] is nie.
'...that there are no professors and many students.'
(iii) ...dat daar [geen professors nie en baie studente] is. (Johannessen 1993:27-28)
'...that there are no professors and many students.'

Sentence (ii) is ruled out because a second quantifier (*baie*) intervenes between the negative quantifier *geen* and the second negation particle *nie*. (iii) is fine because *nie* is placed immediately after the negated NP *professors*.

[4] The constraint on intervening quantifiers is not a straightforward one. That is, it is not a straightforward one in terms of Linebarger's approach. Linebarger gives the following counterexample to her approach:

(i) **Not** many freshmen have *any* friends. Linebarger (1981:41)

Although the quantifier *many* appears between the negation *not* and the NPI *any* the sentence is grammatical. The reason for this anomaly is that Linebarger doesn't consider *not* a part of the NP *many freshmen*. In Zwarts's (1981, 1986) theory it isn't *not* that triggers the NPI but the (quantifier) NP *not many freshmen*. One of the advantages of this approach is that the problem Linebarger has doesn't apply. For Linebarger, however, this solution is impossible, because she works on the level of LF and considers the LF-negation *NOT* the only possible trigger for NPIs.

(52) The Immediate Scope Constraint (ISC)
A negative polarity item is acceptable in a sentence S if in the logical form of S the subformula representing the NPI is in the immediate scope of the operator NOT. An item is in the immediate scope of NOT if (1) it occurs only in the proposition which is the entire scope of NOT, and (2) within this proposition there are no logical elements intervening between it and NOT. 'Logical elements' are defined here as elements capable of entering into the scope ambiguities; that is, the occurrences of the surface realization of n logical elements in a sentence S results in the association of S with up to n! logical forms expressing the possible and acceptable orderings of these elements.

The Immediate Scope Constraint explains sentences in (44), (45), (48) and (49), which are erroneously ruled either in or out by Jackendoff's command rule.

(44) *[John's paper didn't hold a candle to Mary's $_{S1}$] [because he had help $_{S2}$]
(45) [John's paper didn't hold a candle to Mary's $_{S1}$] [because he got drunk $_{S2}$]
(48) a. *That doesn't hold a candle to most of Frank's ideas.
(49) a. *She doesn't budge for everybody.

However, there are still sentences found which are grammatical, though the ISC rules them out. Linebarger gives four categories of sentences that don't obey the ISC. Below, four examples are given, each one representing an anomalous category.

(53) *I didn't BUDGE - I stood my ground.[5] (Linebarger 1981:34)
(54) *He DID NOT lift a finger to help. (Linebarger 1981:89)
(55) a. *If you contribute a red cent to the Moonies, I'll reward you. (Linebarger 1981:91)
b. ✓If you contribute a red cent to the Moonies, I'll hit you.
(56) a. *I didn't lift a finger to help her because she's helped me. (Linebarger 1981:91)
b. ✓I didn't help her because she ever lifted a finger to help me.

Let us consider the sentences above case by case. Sentence (53) contains, according to Linebarger, an instance of Attraction to Focus. The negation in the sentence is attracted to focus, thus disallowing the NPI in the sentence. (57) below gives the LF-representation of the sentence.

(57) NOT (x such that (I x-ed) x = BUDGE)

In this LF representation, the x does not immediately refer to *budge*. Instead x remains

[5] Note that sentences (53) and (54) are not ungrammatical for all speakers. It might be that in some contexts (53) and (54) are fine. For Linebarger, however, these sentences are ill-formed.

unspecified. The reason why budge cannot be in the scope of not is that the budging is denied. Nevertheless "NOT" has immediate scope over the NPI *budge,* since it is found within the parentheses adjacent to NOT, and is ruled in by the NPI. Pragmatically speaking, however, by uttering sentence (53) the speaker doesn't deny *budge,* but rather explicitly denies the truth of the situation.

In sentence (54) the denial is meta-linguistic. (58) gives the LF of (54).

(54) *He DID NOT lift a finger to help.
(58) NOT TRUE (he lifted a finger to help)

Again, the sentence is fine according to the ISC, so it is another counterexample and again the sentence may be unavailable for a pragmatic reason. In this context it seems hard to get the idiomatic reading of the expression *to lift a finger*[6].

The LF-representation of the first part of the sentences under (55) is stated below.

(55) a. *If you contribute a red cent to the Moonies, I'll reward you.
b. ✓If you contribute a red cent to the Moonies, I'll hit you.
(59) NOT (contribute a red cent)

The ISC rules this LF-structure in, and as we can see (55)b is fine, but there is something wrong with (55)a. Linebarger refers to the pragmatic implications of these sentences. (55)a implies (60)a whereas (55)b makes the implication in (60)b.

(60) a. Contribute a red cent.
b. Don't contribute a red cent.

This means that (55)a doesn't imply a negation and hence cannot trigger an NPI.

Finally, consider the sentences (56) again:

[6] In Seuren (1976) and Van der Wouden (1988) this negation is described as echo-negation. The negative sentence echos a positive sentence in a negative context.

(56) a. *I didn't lift a finger to help her because she's helped me.
b. ✓I didn't help her because she ever lifted a finger to help me.

Both sentences have the causal structure: NOT CAUSE (P,Q), which is a legitimate structure under the ISC. The difference between (56)a and b can be found in pragmatics again. The sentences make the following implications respectively.

(61) a. She never lifted a finger to help me.
b. I did lift a finger to help her.

As the reader can conclude here, sentence (56)a makes an implication in which the NPI *to lift a finger* is negated. Sentence (56)b, however, implies the assertion of the NPI and can therefore be (pragmatically) ruled out.

1.3 Semantic Approaches

1.3.1 A Semantic-pragmatic Approach

Fauconnier (1975) indicates a similarity between the appearance of *any* on the one hand and superlatives on the other hand. Compare the sentences in (62) and (63):

(62) a. Jane can't hear any noise.
b. Jane can hear any noise.
(63) a. Jane can't hear the loudest noise.
b. Jane can hear the faintest noise.

Here, we are dealing with two kinds of *any*. *Any* in (62)a has an existential reading and is an NPI. In sentence (62)a *any* has the some meaning as *the loudest* in (63)a, whereas *any* in (62)b is similar to the *faintest noise* in (63)b. Both items in the b-sentences can be replaced by the universal quantifier *every*.

The ambivalence shown in the sentences under (63) is even more elaborate in (65):

(64) The faintest noise bothers my uncle.

In this sentence the meaning of *the faintest noise* depends on the context. My uncle may just be a cantankerous old man who cannot stand any noise, not even the weakest. In another reading there may be something wrong with my uncle's ears, which makes him sensitive to only *the faintest* noise. To show how a low superlative like *faintest* can make the shift to the existential *any*, Fauconnier presents a scale:

(65) Scale of noise

-loudest noise
-x_1
-x_2
-x_{n-1}
-x_n
-faintest noise

This scale of noise associated with the predicate *bother* predicts that if there is a sound x_n that bothers y, the louder noise x_{n-1} will bother y as well. So if the faintest noise bothers my uncle, all noises higher on the scale will bother him, thus any noise will bother him.

More generally we can take a proposition R(x,y) and a scale S.

(66) Scale S

-high superlative
-x_1
-x_2
-x_{n-1}
-x_n
-low superlative

If $R(x_n,y)$ holds, $R(x_{n-1},y)$ will hold; in other words, $R(x_n,y)$ implies $R(x_{n-1},y)$. Let us now consider the case of the negation of R. If we take the negated proposition $\neg R(x,y)$, the implication will work the other way round. Consider for example the case that the loudest noise doesn't bother my uncle. By that, it is implied that x_1 on scale S doesn't bother my uncle either. Or in a more formal way it implies $\neg R(x_1,y)$.$\neg R(x_1,y)$ implies $\neg R(x_2,y)$ and $\neg R(x_2,y)$ implies $\neg R(x_3,y)$, and so on until the implication reaches the low superlative at the bottom of the scale.

Ladusaw (1979:110) revises the pragmatic scale properties to logical properties. The implications

of a non-negated predicate in combination with the top of the scale on the one hand follow from modus ponens. Modens ponens is a logical way of reasoning, formalized in (67) below. The implications made by a negated predicate in combination with the lowest end of the scale on the other hand follow from modus tollens (see (67) for the formal description). In ordinary words modens ponens means that if you know that "p" implies "q", then by knowing "p" you also know "q". So if we have the implication: "If the lights are on, Ann is in," then by seeing that the lights are on, we know that Ann is there. For modus tollens: if "p" implies "q", then if we know "not q" we know "not p" as well. So if we have "If the lights are on, Ann is in," then if we phone Ann's place and find out she is no longer there, because she doesn't answer the phone, we know that she'll have switched off the lights.

(67)

modus ponens	modus tollens
$p \rightarrow q$	$p \rightarrow q$
p	$\neg q$
q	$\neg p$

By introducing these logical rules Ladusaw converts the pragmatic scale principle to a semantic one. To work out the problem semantically Ladusaw revises the scale once more. In this new scales the propositions p_0 to p_n are introduced.

(68) A Scale, Σ (Ladusaw 1979:108)

p_0 Alex could lift the lightest weight.
↑
p_1 Alex could lift one kilo.
↑
p_2 Alex could lift five kilos.
↑
p_3 Alex could lift twenty-five kilos.
↑
p_{n-1} Alex could lift hundred kilos.
↑
p_n Alex could lift the heaviest weight.

If Alex can lift the heaviest weight, by modens ponens it is entailed that he can lift a hundred kilos, so proposition p_{n-1} is true ($p_n \subseteq p_{n-1}$), and so is any proposition higher on the scale than p_{n-1} ($p_{n-1} \subseteq p_{n-2}$, $p_{n-2} \subseteq p_{n-3}$, et cetera). Ladusaw calls this property upward entailment. However if Alex cannot lift the lightest weight, by modus tollens we can conclude that he will not be able to lift one kilo either ($\neg p_0 \subseteq \neg p_1$). Any proposition lower on the scale will be false too ($\neg p_1 \subseteq \neg p_2$,

$\neg p_2 \subseteq \neg p_3$, et cetera). Ladusaw calls this property downward entailment (Ladusaw 1981:112). Thus a negated predicate bears the logical property of downward entailment and the NPI *any* seems to get its existential reading from this downward entailing environment. Van der Wouden (1994) points out that many NPIs are found to be end-of-scale expressions. This is illustrated by the following examples:

(69) Ilse didn't do a thing/see a soul/eat a bite/say a word/pay a red cent/move a muscle.

Above it is shown that superlatives have to be triggered to get an existential meaning, just as *any* has to be triggered to get an existential meaning. In (69) the superlatives are triggered by sentence negation, which bears the property of downward-entailment. Ladusaw claims that downward entailment rather than negation or affectiveness is of eminent importance for NPIs (Ladusaw 1981:113) and that it is this property that allows a lexical item to be a trigger. To check whether this is true we will look at the other contexts that are favored by NPIs. Recall the sentences (6) to (11) in section 1.1, repeated below:

(6) The old donkey is **too** tired to *budge* an inch.
(7) Claire was **surprised** Chuck *lifted a finger* to help Billy.
(8) *Need* I worry**?**
(9) **At most three girls** have *any* cigarettes left.
(10) Kim is **reluctant** to do *any* work.
(11) **Before** you buy *anything*, make sure you really need it.

As a test for downward entailment I will use *dictum de nullo*. The way the *dictum de nullo*-test works is as follows. Consider sentence (9). *At most three girls* functions as a trigger. The NPI *any* modifies cigarettes. Since *filter cigarettes* is more specific than *cigarettes* (i.e. the set of cigarettes subsumes the set of filter cigarettes) we can conclude from the downward-entailing context (this context is created by the expression *at most three girls*) that it cannot be a larger number of girls than three that have any filter cigarettes left.

At most three girls have any cigarettes left.
[filter cigarettes] $\subseteq$ [cigarettes]
$\Rightarrow$At most three girls have any filter cigarettes left.

The *dictum de nullo*-test only works for downward-entailment expressions. Consider (70):

(70) At least three girls have any cigarettes left.

For a quantifying expression such as *at least three girls* (which is upward-entailing) the *dictum de nullo*-test fails, as the reader can see below.

> At least three girls have any cigarettes left.
> [filter cigarettes] ⊂ [cigarettes]
> #At least three girls have any filter cigarettes left.[7]

Below, the remaining triggers in (6) to (11) are tested by *dictum de nullo*.

> The old donkey is too tired to budge an inch.
> [jump] ⊂ [budge]
> ⇒The old donkey is too tired to jump an inch.
>
> Claire was surprised Chuck lifted a finger to help Billy.
> [take a day off] ⊂ [lift a finger]
> ⇒Claire was surprised Chuck took a day off to help Billy.
>
> Need I worry?
> [chew my fingers to the bone] ⊂ [worry]
> ⇒Need I chew my fingers to the bone?
>
> Kim is reluctant to do any work.
> [cleaning job] ⊂ [any work]
> ⇒Kim is reluctant to do a cleaning job.
>
> Before you buy anything, make sure you really need it.
> [a car] ⊂[anything]
> ⇒Before you buy a car, make sure you really need it.

Look at the special case of the question "need I worry" above. Questions are triggering contexts as well. However, since a declarative sentence is required for *dictum de nullo*, the test cannot be applied right away. Before the *dictum de nullo*-test can be applied, some assumptions have to be made. Consider the sentence once more:

(71) *Need* I worry?

Is this an actual question? According to Ladusaw, someone who poses question (71) believes that

[7] The symbol "#" marks an invalid conclusion.

there is no need to worry. Citing work by Borkin Ladusaw writes:

(72) Though there are interesting deviations from this generalization, Borkin (1971) finds that when NPI's appear in questions, they are usually used only when a negative response is expected. (Ladusaw 1979:149).

This assumption would mean that sentences such like (71) contain a covert negation, and thus are downward-entailing. Although the case of the question might seem to be a weak point in Ladusaw's approach, it is shown by the other sentences that there is strong evidence for Ladusaw's claim that it is not negation but rather downward entailment which triggers NPIs. This allows Ladusaw to revise earlier definitions of NPIs.

Ladusaw gives a definition that is fairly similar to the one given by Baker (1970), but he changes the essential part. I quote both of them:

(73) Negative-polarity items are appropriate in structures within the scope of negations, whereas affirmative-polarity items are appropriate elsewhere. (Baker 1970:179)

(74) NPIs are appropriate in structures in the scope of a downward-entailing expression. APIs are appropriate elsewhere. (Ladusaw 1979:132)

However, some problems still remain. Firstly consider *only* in the sentence below:

(75) **Only** John *budged.*

Sentence (75) above is acceptable with the negative polarity verb *to budge*. This means that *only* triggers *budged* and we would expect *only* to be downward monotonic. However, consider the following *dictum de nullo*-test.

Only John budged.
[budge slowly] $\subseteq$ [budge]
#Only John budged slowly.

From the statement that only John budged, we cannot conclude that John budged slowly. To avoid this problem Ladusaw restates *only x budged* as *if someone is not John he didn't budge.* If we go back to the *dictum de nullo*-test we get:

If someone is not John he didn't budge.
[budge slowly] ⊆ [budge]
⇒If someone is not John he didn't budge slowly.

The *dictum de nullo*-test works properly now, but the solution looks rather *ad hoc*.

Linebarger (1981:138) points out that there are at least two other problems for Ladusaw's approach. In the first place there is the problem of the intervening "logical element".

(76) a. He didn't give a red cent.
b. *He didn't give everybody a red cent. (Linebarger 1981:138)

I think the unacceptablity of (76)b is a problem of scope rather than a problem with Ladusaw's approach to triggers, so Ladusaw might get away with it. However, there is a second problem. Recall that we found a difference between *threat* and *promise* in the sentences under (55), repeated below.

(77) a. *If you contribute a red cent to the Moonies, I'll reward you.
b. If you contribute a red cent to the Moonies, I'll hit you.

This is a serious problem. Ladusaw's approach cannot deal with it. Linebarger seeks the solution to this problem at the level of implication.

(78) a. Do contribute a red cent.
b. Don't contribute a red cent.

According to Linebarger, (77)a is acceptable due to the implication in (78)a. The reason that (77)b in not acceptable, is the implication in (78)b. In this implication the NPI *a red cent* is not triggered properly by a downward-entailing expression.

1.3.2 Negative Contexts

In the previous section we considered Ladusaw's claim that NPIs need a downward-entailing context. In more recent research (Zwarts (1981), (1986), Van der Wouden (1988), (1994)) this claim is elaborated. As shown in section 1.2, besides negation there are other lexical items that

have triggering properties, like the *inherent negatives* and *affectives* such as *before* clauses and questions. Seuren (1976) points out that not all of these items can trigger all NPIs, but rather that some NPIs show some kind of idiosyncratic behavior. That is, some NPIs seem to allow a larger group of lexical items as their trigger; they show "weaker" behavior towards their triggers. Now, if NPIs comes in "weaker" and "stronger" types, there have to be grades in triggering properties as well. Linebarger observes the same, and she wonders how this could possibly fit in with Ladusaw's semantic approach: "But how can one operator be more or less downward-entailing than another?" (Linebarger 1981:140).

The answer to Linebarger's question is given by Zwarts (1981, 1986). However, before spelling out this answer, I will discuss the behavior of NPIs with regard to the triggers they accept. Zwarts (1986:39) gives Dutch examples of NPIs: the negative polarity modal *hoeven* (to need) seems to be less restrictive towards triggering elements than the adverbial negative polarity adverbial cluster *ook maar* (even).

(79) a. **Niet iedereen** zal zulke beproevingen *hoeven* te doorstaan.
'Not everybody needs to undergo these temptations.'
b. **Hoogstens zes leden** zullen deze test *hoeven* te ondergaan.
'At most six members need to undergo this test.'

(80) a. ***Niet iedereen** zal daarover *ook maar* iets weten te zeggen.
'Not everybody will be able to say a word about this.'
b. ***Hoogstens zes leden** zullen daarover *ook maar* iets weten te zeggen.
'At most six members will be able to say a word about this.'

To account for these dissimilarities, Zwarts investigates the triggers. The triggers used above are downward-entailing, so according to Ladusaw's definition they are proper triggers. Zwarts's work is in the framework of Boolean algebra. The Boolean definition of downward-entailment is:

(81) Definition: Let B and B* be two Boolean algebras. A function f from B to B* is monotone-decreasing iff for arbitrary X, Y $\in$ B:
$X \subseteq Y \rightarrow f(Y) \subseteq f(X)$ (Van der Wouden 1994:29)

It might be confusing that in this definition the term monotone-decreasing is used for downward-entailing. The matter becomes even more confusing because in other works (e.g. Van der Wouden 1994)) the term "downward monotonic" indicates the same property. I will preferably

use the term "monotone-decreasing", but sometimes there will be no choice but to use one of the other terms.

Recall from the former section that monotone-decreasing expressions (e.g. *nobody*) can be tested by *dictum de nullo*.

(82) Nobody eats vegetables.
[vegetables] ⊆ [spinach]
⇒Nobody eats spinach.

This rule is the traditional way to verify the downward entailment of a function. In the definition (81) above, the rule is converted to logic, or, more accurately, to Boolean algebra. The essential part of the rule remains unaltered. If a smaller set X (e.g. spinach) is subsumed by a larger set Y (e.g. vegetable) then a monotone-decreasing function (e.g. nobody(eat)) combined with the larger set Y in f(Y) (i.e. nobody (eat a vegetable)) implies[8] (nobody(eat)) combined with the smaller set X: f(X) (i.e. nobody (eat spinach)). So the implication made is from a larger to a smaller set and therefore the function is "decreasing".

Downward entailment has an upward counterpart, namely upward entailment. Traditionally it can be verified whether an expression is monotone-increasing by *dictum de omni*. In the example below I follow the *dictum de omni*-reasoning:

(83) Everyone eats spinach.
[spinach] ⊆ [vegetables]
⇒Everybody eats vegetables.

As in the case of the *dictum de nullo*-reasoning there are two sets involved: a smaller set X which is subsumed by a larger set Y. However, this time a monotone-increasing function (e.g. everybody(eat)) is combined with the smaller set X in f(X) (i.e. everybody (eat spinach)). (everybody (eat spinach)) implies (everybody(eat vegetable)), thus the smaller set implies the larger set and therefore the function is "increasing". A Boolean definition of *dictum de omni* is:

[8] Instead of *imply* it would be better to use *subsume* here. It is the set of all the subsets of a domain that don't contain vegetable-eating individuals of which the set of all the subsets that don't contain spinach-eating individuals is a subset. For more about Boolean algebra see Zwarts (1981, 1986).

Now turn to (90). If the girls always sing and dance, then they must always be singing and always be dancing, so (90)a holds from left to right. If the girls always sing and if the girls always dance, then they must always be singing and dancing, so (90)a holds from right to left as well. But if the girls always sing or dance, there may be occasions on which they are only singing or only dancing, so we cannot conclude that either "the girls always sing" or "the girls always dance" is true and hence we cannot conclude that the second disjunction under (90)b is true. This rules out (90)b from left to right. From right to left (90)b is fine. If it is true that either the girls always sing or that the girls always dance (so that the disjunction of the two is true), then it must be true that the girls always sing or dance as well. (Henceforth I will leave it to the reader to check the equivalences.)

Below, the properties of additivity and multiplicativity are formalized. QP stands for a quantifier phrase (e.g. *sometimes, nobody* or *not all girls*).

Multiplicativity

(91) QP (VP_1 and VP_2) = QP (VP_1) and QP (VP_2)
QP (VP_1 or VP_2) $\neq$ QP (VP_1) or QP (VP_2)

Additivity

(92) QP (VP_1 and VP_2) $\neq$ QP (VP_1) and QP (VP_2)
QP(VP_1 or VP_2) = QP (VP_1) or QP (VP_2)

In Boolean algebra these properties can be defined as:

(93) Definition: Let B and B* be two Boolean algebras. A function f from B to B* is multiplicative iff for arbitrary X, Y $\in$ B:
$f(X \cap Y) = f(Y) \cap f(X)$ (Van der Wouden 1994:30)

(94) Definition: Let B and B* be two Boolean algebras. A function f from B to B* is additive iff for arbitrary X, Y $\in$ B:
$f(X \cup Y) = f(Y) \cup f(X)$ (Van der Wouden 1994:30)

Expressions such as *the girls, the king of France* and proper names show the properties of both additives and multiplicatives.

(95) a. The king of France always sings and dances. = The king of France always sings and the king of France always dances.
b. The king of France always sings or dances. =The king of France always sings or the king of France always dances.

This means that both definition (93) and definition (94) apply. This leads to the conclusion that an expression such as *the king of France* belongs to the conjunction of the set of multiplicatives and the set of additives. This intersection is referred to as the set of homomorphisms. So for homomorphisms we have:

(96) $QP\ (VP_1 \text{ and } VP_2) = QP\ (VP_1) \text{ and } QP\ (VP_2)$
$QP(VP_1 \text{ or } VP_2) = QP\ (VP_1) \text{ or } QP\ (VP_2)$

The Boolean definition of a homomorphism is:

(97) Definition: Let B and B* be two Boolean algebras. A function f from B to B* is homomorphic iff for arbitrary $X, Y \in B$:
$f(X \cap Y) = f(Y) \cap f(X)$
$f(X \cup Y) = f(Y) \cup f(X)$

Thus the monotone-increasing expressions are divided into four classes. Firstly there is a big superset which includes the three subsets: the set of multiplicatives, the set of additives and finally the set of homomorphisms.

As I mentioned above monotone-decreasing and increasing expressions can be divided into mirror-image subsets. Let us turn to the monotone-decreasing expressions. Consider for example the expressions *no girl* and *not every girl*. First by *dictum de nullo* it can be proved that these expressions are monotone-decreasing.

(98) No girl/not every girl sings a song.
$\underline{\text{hymn} \subseteq \text{song}}$
No girl/ not every girl sings a hymn.

Although both of them are monotone-decreasing, not all the entailments that hold for *not every girl* hold for *no girl*.

(99) a. Not every girl sings and dances. = Not every girl sings or not every girl dances.
b. Not every girl sings or dances. ≠Not every girl sings and not every girl dances.
(100) a. No girl sings and dances. ≠ Not every girl sings or not every girl dances.
b. No girl sings or dances. = Not every girl sings and not every girl dances.

This shows that though both expressions are monotone-decreasing, they do not share all features. *Not every girl* belongs to the subset of antimultiplicatives, whereas *no girl* is a member of the subset of anti-additives. So for antimultiplicativity and anti-additives we have the equivalences:

Antimultiplicativity

(101) QP (VP_1 and VP_2) = QP (VP_1) or QP (VP_2)
QP (VP_1 or VP_2) ≠ QP (VP_1) and QP (VP_2)

Anti-additivity

(102) QP (VP_1 and VP_2) ≠ QP (VP_1) or QP (VP_2)
QP(VP_1 or VP_2) = QP (VP_1) and QP (VP_2)

For antimultiplicativity and anti-additivity we have the following Boolean definitions.

(103) Definition: Let B and B* be two Boolean algebras. A function f from B to B* is antimultiplicative iff for arbitrary X, Y ∈ B:
$f(X \cap Y) = f(Y) \cup f(X)$ (Van der Wouden 1994:32)

(104) Definition: Let B and B* be two Boolean algebras. A function f from B to B* is anti-additive iff for arbitrary X, Y ∈ B:
$f(X \cup Y) = f(Y) \cap f(X)$ (Van der Wouden 1994:32)

For monotone-increasing expressions there was a subset that met both the definition of multiplicativity and additivity. This leads to the conclusion that downward monotonicity has a subset for which both the equivalences in the definition of antimultiplicatives and anti-additives hold. This conjunction of the set of antimultiplicatives and the set of anti-additives is the set of antimorphics. So we have:

(105) QP (VP_1 and VP_2) = QP (VP_1) or QP (VP_2)
QP (VP_1 or VP_2) = QP (VP_1) and QP (VP_2)

Most prominently in this subset of antimorphics the sentence negation *not* is found. Besides this the emphatic negation *not at all* and the negations of homomorphisms (e.g. *the girls, the king of France*) are antimorphics: *not the girls, not the king of France.* Antimorphics like these can be found in a context such as (105).

(106) A: Who is going to sing and dance?
B: I don't know, but not the girls!

Let us check whether the negation of the sentence *not* is monotone-decreasing:

(107) The girl did not sing a song.
hymn $\subseteq$ song
The girl did not sing a hymn.

Not passes the *dictum de nullo*-test, so it is monotone-decreasing. We can check whether the equivalences in (105) hold.

(108) a. The girl doesn't sing and dance. = The girl doesn't sing or the girl doesn't dance.
b. The girl doesn't sing or dance. = The girl doesn't sing and the girl doesn't dance.

Both equivalences hold, so *not* is a full member of the class of antimorphics. The Boolean definition of antimorphic expressions is given in (109).

(109) Definition: Let B and B* be two Boolean algebras. A function f from B to B* is antimorphic iff for arbitrary X, Y $\in$ B:
$f(X \cup Y) = f(Y) \cap f(X)$
$f(X \cap Y) = f(Y) \cup f(X)$

Thus monotone-decreasing expressions can be subdivided into antimultiplicatives, anti-additives and antimorphics. There are, however, a number of expressions (e.g. *few girls, not all girls* and *seldom*) that belong to none of the three classes. Let *few girls* serve as an example.

(110) a. Few girls are singing or dancing. $\neq$ Few girls are singing and few girls are dancing.
b. Few girls are singing and dancing. $\neq$ Few girls are singing or few girls are dancing.

These equivalences don't hold. Consider first (110)a and an occasion in which it is the case that 5 percent of group of girls is singing and no one is dancing. One can say that *few girls are singing or dancing*, but one cannot conclude that *few girls are singing and few girls are dancing*, because there is in fact no girl dancing. Now consider (110)b. Imagine a party where every girl is singing and there are even a few girls dancing. About this party one can say: "few girls are singing and dancing", but not "few girls are singing or few girls are dancing", because every girl is dancing. This means that we have expressions that pass the *dictum de nullo*-test but that cannot fit into one of the three subclasses: the antimultiplicative subclass, the anti-additive subclass or the antimorphic subclass. These items are simply referred to as monotone downward expressions.

In the previous section, two main sets of monotone-increasing and monotone-decreasing expressions have been subdivided into a total of eight subsets. Next to monotone expressions there are expressions that lack the property of monotonicity, the set of discontinuous expressions. All these sets and subsets relate to each other, as is shown in the diagram in Figure 3. The diagram also gives a short overview of expressions that can be found in the various subsets.

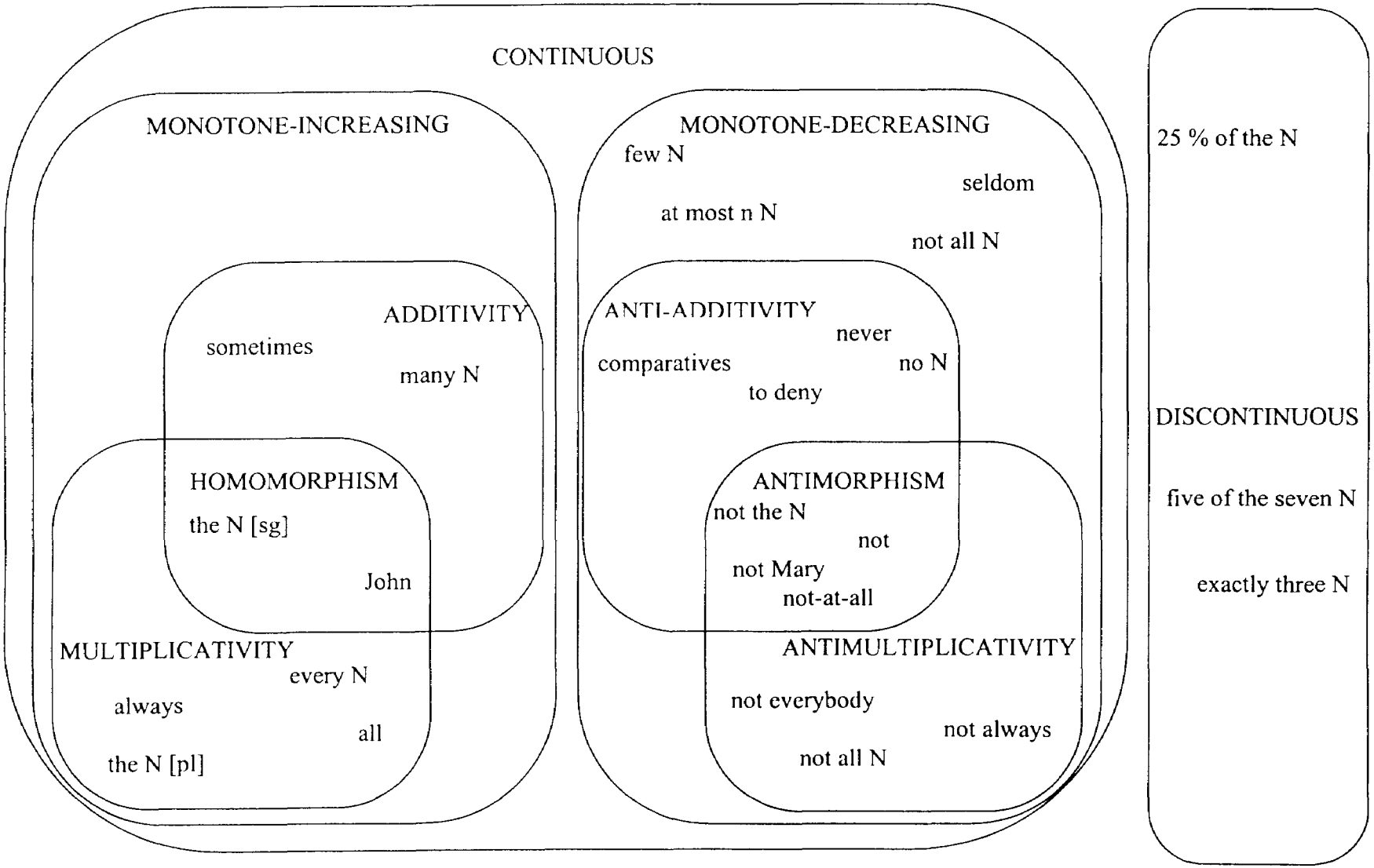


Figure 3 (In this diagram "N" stands for a noun, and "n" stands for a cardinal number.)

1.3.3 Strength of Polarity Items

Now that the monotone-decreasing subsets have been established, we can turn to the expressions in these subsets and account for their influence on NPIs. Recall that in examples (79) and (80) (repeated below as (111) and (112)) it is shown that NPIs proved to be inconsistent in terms of the scope of their triggers. I will repeat these examples for the convenience of the reader.

(111) a. **Niet iedereen** zal zulke beproevingen *hoeven* te doorstaan.
'Not everybody need undergo these temptations.'
b. **Hoogstens zes leden** zullen deze test *hoeven* te ondergaan.
'At most six members need undergo this test.'

(112) a. ***Niet iedereen** zal daarover *ook maar* iets weten te zeggen.
'Not everybody will be able to say even this about it.'
b. ***Hoogstens zes leden** zullen daarover *ook maar* iets weten te zeggen.
'At most six members will be able to say even this about it.'

The NPI *ook maar* cannot be triggered by *niet iedereen* (not everybody) or *hoogstens zes leden* (at most six members). *Niet iedereen* is an antimultiplicative and *hoogstens zes leden* is a monotone-decreasing expression. To make sure that it is because of their logical properties that these expressions can't license *ook maar*, I have replaced these expressions with other expressions of the same subset. In (113) *weinig scholieren* (few pupils) is monotone-decreasing and in (114) *niet altijd* (not always) is antimultiplicative.

(113) ***Weinig scholieren** zullen daarover *ook maar* iets weten te zeggen.
'No pupils will have anything to say about that subject.'

(114) *Zes leden zullen daarover **niet altijd** *ook maar* iets weten te zeggen.
'Six members will not always have anything to say about that subject.'

The sentences are still anomalous. This is additional evidence that *ook maar* can't be triggered by monotone-decreasing or antimultiplicative expressions. If monotone-decreasing expressions and antimultiplicatives can't trigger *ook maar*, which items can? In the sentence (115)a and b below, *ook maar* is in the scope of anti-additives. In (115)c *ook maar* is in the scope of the antimorphic expression *niet* (not).

(115) a. **Niemand** zal daarover *ook maar* iets weten te zeggen.
'Nobody will be able to say anything about it.'

b. Jan **ontkende** daarover *ook maar* iets te weten te zeggen.
'Jan denied that he would know anything to say about that.'
c. *Jan wilde **niet** bekennen dat hij er *ook maar* iets vanaf wist.
'Jan didn't want to admit that he knew anything about it.'

From the sentences in (113), (114) and (115) it appears that anti-additives are triggers for *ook maar*, but anti-multiplicatives and monotone-decreasing expressions aren't able to trigger *ook maar*. *Ook maar* is not unique in its behavior towards its triggers. For example the Dutch idioms *hand voor ogen* (which means 'hand before eyes', usually used in a sentence like [literally]: "I couldn't see a hand before eyes because of the fog") and *met een vinger* (which means 'with a finger' and denotes the slightest way of touching in for example [literally]: "John didn't touch his sister with a finger, but she started to cry") show similar behavior.

(116) a. ***Niet iedereen** ziet een *hand voor ogen*. (monotone-decreasing)
'Not everybody sees anything.'
b. ***Niet iedereen** zal hem *met een vinger* aanraken.
'Not everybody will even touch him.'
(117) a. ***Weinig scholieren** zien een *hand voor ogen*. (antimultiplicative)
'Few pupils see anything.'
b. ***Weinig scholieren** zullen hem *met een vinger* aanraken.
'Few pupils will even touch him.'
(118) a. **Niemand** ziet een *hand voor ogen*. (anti-additive)
'Nobody sees anything.'
b. **Niemand** zal hem *met een vinger* aanraken.
'Nobody will even touch him.'
(119) a. Jan zag nog **niet** een *hand voor ogen*. (antimorphic)
'Jan didn't see anything.'
b. Jan wilde hem nog **niet** *met een vinger* aanraken.
'Jan didn't even want to touch him.'

There is a slight difference between *ook maar* on the one hand and *hand voor ogen* and *met een vinger* on the other hand. In (119) the latter two can be triggered by the antimorphism *niet*. In (115)c we saw that *ook maar* could not be triggered by *niet*. This, however, might be due to scope preferences of *ook maar*.

We can conclude from these data that NPIs like *ook maar, hand voor ogen* and *met een vinger* are "choosier" than *hoeven* with respect to triggering environments. For this reason Zwarts (1986) calls NPIs such as *ook maar* strong NPIs, as opposed to weak NPIs like *hoeven*. *Hoeven*

is not the only weak NPI. *Kunnen uitstaan* (can stand) and *ooit* (ever) can also be triggered by a monotone-decreasing expression, as is evident from the sentences below:

(120) a. **Niet iedereen** zal zo'n schoonmoeder *kunnen uitstaan*.
'Not everybody could stand such a mother-in-law.'
b. **Hoogstens zes leden** zullen *ooit* mogen stemmen.
'At most six members will ever be allowed to vote.'

On the base of these data Zwarts formulates his Laws of Negative Polarity (Zwarts 1986:341).

(121) Zwarts's Laws of Negative Polarity

(1) Only sentences that contain a monotone-decreasing expression can contain a negative polarity item of the weak sort.
(2) Only sentences that contain an anti-additive expression can contain a negative polarity item of the strong sort.

So with Zwarts's Laws of Negative Polarity there is another refinement of the definition for NPIs. But as the reader has probably noticed, the list of monotone-decreasing environments is not exhausted yet. There are four kinds of downward monotonicity. It is easy to see that there are more possible types of NPIs than just these two. For Van der Wouden this was a reason to explore this matter more thoroughly. He found that there are at least two additional types. Firstly he found NPIs that are only allowed by antimorphics. The adverb *mals* ('gentle' (of criticism)) and the expression *voor de poes* (literally: 'for the cat' but its idiomatic meaning is 'gentle') are instances of this sort of NPI. In the sentences below, in which we find *zelden* (seldom), *niet altijd* (not always) *nooit* (never) and *allerminst* (not-at-all) as triggers, the polarity strength of these items is displayed.

(122) *De kritiek is **zelden** *mals/voor de poes*. (monotone-decreasing)
'The criticism is seldom gentle.'
(123) *De kritiek is **niet altijd** *mals/voor de poes*. (antimultiplicative)
'The criticism is not always gentle.'
(124) *De kritiek is **nooit** *mals/voor de poes*. (anti-additive)
'The criticism is never gentle.'
(125) De kritiek is **allerminst** *mals/voor de poes*. (antimorphic)
'The criticism is not-at-all gentle.'

Van der Wouden renames Zwarts's strong NPIs (e.g. *ook maar, hand voor ogen* and *met een vinger*) "NPIs of medium strength", because he wants to use the term "strong NPIs" for his new-

found class of *mals* and *voor de poes*. The NPIs *hoeven, ooit* and *kunnen uitstaan* remain in the class of weak NPIs. On the basis of these data Van der Wouden revises Zwarts's Laws of Negative Polarity as follows:

(126) Van der Wouden's Laws of Negative Polarity (Van der Wouden 1994:56)

(1) Weak NPIs are expressions which felicitously occur in monotone-decreasing contexts.
(2) NPIs of medium strength are expressions which felicitously occur in anti-additive contexts.
(3) Strong NPIs are expressions which felicitously occur in antimorphic contexts.

1.3.4 Negativity

According to Zwarts's Laws of Negative Polarity (121) there are two different contexts and according to Van der Wouden's Laws of Negative Polarity (126), there are as many as three different contexts that can trigger NPIs. Earlier approaches (especially Baker 1970 and Linebarger 1981 and to some extent Klima 1964 and Jackendoff 1972) assumed that it was negation that triggered polarity items. For this reason it is interesting to take a look at how the contexts in Zwarts's and Van der Wouden's Laws relate to negativity.

In classical logic negation is defined by DeMorgan's first and second laws.

(127) DeMorgan's First and Second Laws (Zwarts 1986:126)
(1) $\neg(X \cap Y) = \neg(X) \cup \neg(Y)$
(2) $\neg(X \cup Y) = \neg(X) \cap \neg(Y)$

Probably the reader has already noted the similarity between these laws of negation and the definition of antimorphism. Under (109), here repeated as (128), antimorphic expressions were defined by the following two equivalences:

(128) $f(X \cap Y) = f(Y) \cup f(X)$
$f(X \cup Y) = f(Y) \cap f(X)$

Comparing these equivalences to the laws of negation, we see a striking similarity. By only

changing the function f into a negation ¬ we obtain the De Morgan's First and Second Law from the equivalences that define antimorphism. Obviously the property of antimorphism corresponds to the notion of negation in *classical* logic. For Zwarts (1986:413) this is a reason for calling this negation "*classical* negation". Sentence negation *not* is the most frequently used form of classical negation.

Keeping DeMorgan's Laws in mind, we turn to monotone-decreasing functions. Monotone-decreasing functions were defined by *dictum de nullo*. The Boolean definition was given under (81). Below I repeat the implication made in that definition.

(129) $f(X \subseteq Y) \rightarrow f(Y) \subseteq f(X)$

This implication can be restated as:

(130) a. $f(X) \cup f(Y) \subseteq f(X \cap Y)$[9]
b. $f(X \cup Y) \subseteq f(X) \cap f(Y)$

DeMorgan's Laws can be rewritten as well. The two equivalences can be split up into a total of four entailments:

(131) a. $\neg(X \cap Y) \subseteq \neg(X) \cup \neg(Y)$
b. $\neg(X) \cup \neg(Y) \subseteq \neg(X \cap Y)$
c. $\neg(X \cup Y) \subseteq \neg(X) \cap \neg(Y)$
d. $\neg(X) \cap \neg(Y) \subseteq \neg(X \cup Y)$

This shows that downward monotonicity partly complies with the rules of classical negation. By filling in a negation for the function f in (130)a and b these implications become the same as (131)b and c respectively. It is clear that downward monotonicity is not a full negation. However, it has some of the properties of negation. For this reason Zwarts (1986) comes up with the name "minimal negation" (analogical to classical negation) as a linguistic term for downward monotonicity.

For two subclasses of downward monotonicity it has been shown that they share properties with

[9] For a proof of the restatement of (128) as (129) I refer the reader to Zwarts (1981:238).

DeMorgan's First and Second Law: downward-monotone expressions are similar to minimal negation and antimorphic expressions are similar to classical negation. This leaves us with antimultiplicativity and anti-additivity. Let us consider the latter first. Anti-additivity is defined by the equivalence in definition (104), here repeated for the convenience of the reader:

(132) $f(X \cup Y) = f(Y) \cap f(X)$

This equivalence can be split into two implications:

(133) a. $f(X \cup Y) \subseteq f(Y) \cap f(X)$
b. $f(Y) \cap f(X) \subseteq f(X \cup Y)$

Comparing these implications to those in (131), which designate classical negation, we see that by replacing the function f by $\neg$ (133)a and b become equal to (131)c and d. So anti-additives share features with negation as well. Zwarts (1986) suggests the name "regular negatives" for anti-additive expressions.

Finally we have to look at antimultiplicatives. In their definition in (103) we find the equivalence:

(134) $f(X \cap Y) = f(Y) \cup f(X)$

This equivalence has the following implications:

(135) a. $f(X \cap Y) \subseteq f(Y) \cup f(X)$
b. $f(Y) \cup f(X) \subseteq f(X \cap Y)$

By filling in the negation sign for the function f in the implications under (135), we can see the similarities between these implications and (82)a and b respectively. For antimultiplicativity Zwarts (1986) doesn't give a name. The reason is that antimultiplicativity doesn't play a crucial role in Zwarts's approach to NPIs, since the distinction between strong and weak NPIs, as defined in Zwarts (1986), depends on the difference between monotone-decreasing expressions and anti-additives.

In section 1.3.3 we have seen that there are different sorts of NPIs. In this section I have shown

how Zwarts classified negation into three groups. According to Zwarts (1986) and Van der Wouden (1994) these different NPIs can be found in the scope of different monotone-decreasing contexts. Weak NPIs can be triggered by any negation. Medium NPIs can be triggered by classical and regular negation, but not by minimal negation. And finally strong NPIs require the scope of a classical negation.

To recapitulate this section I will give in Table 1 an overview of the kinds of negative contexts in which the different sorts of NPIs can appear according to Van der Wouden.

Table 1: Classes of NPIs (Van der Wouden 1994:56)

	Strong NPIs	**Medium NPIs**	**Weak NPIs**
Minimal negation	–	–	+
Regular negation	–	+	+
Classical negation	+	+	+

1.3.5 Positive Polarity

Van der Wouden not only extends Zwarts's theory by adding an additional item to the list of types of NPIs, but, as we have seen in the former section, he also incorporates PPIs in the theory. Recall that according to Ladusaw's (1979) definition under (74), PPIs can straightforwardly appear everywhere, except in the scope of a negation.

(74) NPIs are appropriate in structures in the scope of a downward-entailing expression. APIs [=PPIs] are appropriate elsewhere. (Ladusaw 1979:132)

The examples in (136) show that Ladusaw's definition is not entirely accurate. In the sentences below the PPI *al* (already) is found under the scope of a monotone-decreasing expression (136)a and even an anti-additive expression in (87)b.

(136) a. **Weinig monniken** zijn *al* naar Rome geweest.
'Few monks have already been to Rome.'
b. **Geen schoolmeester** is *al* gelukkig.
'No schoolteacher is already happy.'

Van der Wouden (1988) supposes that the constraints on PPIs are more subtle than Ladusaw's definition suggests. Let us first consider the case of *al*. As shown in (136) above, this PPI is fine in a monotone-decreasing context and in a regular negative context as well. What happens to *al* in a classical negative or antimorphic context?

(137) *De schoolmeester is **niet** *al* gelukkig.
'The schoolteacher is not already happy.'

This means that the appearance of *al* in an antimorphic context results in an ungrammatical sentence whereas *al* can felicitously appear in monotone-decreasing and anti-additive contexts. Van der Wouden (1994) shows that *al* is not the only PPI that shows this behavior: *ooit* (ever) and *nog* (still) are two other instances.

However, not all PPIs are like *al*. For a PPI like *een beetje* (a bit, slightly) the scope of a monotone-decreasing trigger is no problem. Under the scope of an anti-additive expression or an antimorphism, *een beetje* gives ungrammatical results.

(138) a. **Weinig monniken** zijn *een beetje* gelukkig.
'Few monks are slightly happy.'
b.***Geen schoolmeester** is *een beetje* gelukkig.
'No schoolteacher is slightly happy.'
c.*De schoolmeester is **niet** *een beetje* gelukkig.
'The schoolteacher is not slightly happy.'

In the examples above we can see that, unlike *al, ooit* and *nog*, *een beetje* avoids anti-additive contexts. This means that we have identified two sorts of PPIs already. However, it is very probable that a third type will exist which is ungrammatical under the scope of any monotone-decreasing trigger. That is, there are PPIs that behave exactly according to the definition of Ladusaw under (48). *Inderdaad* (indeed, really) appears to be such a PPI. Below, consider *inderdaad* in a monotone-decreasing context, an anti-additive context and an antimorphic context respectively.

(139) a. ***Weinig monikken** zijn inderdaad gelukkig.
'Few monks are really happy.'
b. ***Geen schoolmeester** is inderdaad gelukkig.
'No schoolteacher is really happy.'
c. *De schoolmeester is **niet** inderdaad gelukkig.
'The schoolteacher is not really happy.'

This shows that *inderdaad* belongs to the strongest class of PPI. Van der Wouden (1994) refers to this class as strong PPIs. Besides *inderdaad*, *allerminst* (not at all) and *verre van* (far from) are members of this class.

The PPIs that can appear under the scope of anti-additives and monotone-decreasing expressions are called "weak PPIs" by Van der Wouden. Finally, PPIs that can be found in monotone-decreasing contexts but not in anti-additive contexts are called "medium PPIs". In this light Van der Wouden adds three laws that deal with positive polarity to his Laws of Polarity.

(140) Van der Wouden's Laws of Positive Polarity (Van der Wouden 1994:56)

(1) Strong PPIs are incompatible with all monotone-decreasing contexts.
(2) PPIs of medium strength are compatible with monotonic contexts but incompatible with anti-additive ones.
(3) Weak NPIs are compatible with downward monotonic contexts and anti-additive contexts, but incompatible with antimorphic ones.

According to these laws PPIs can be classified in the same way as the NPIs in Table 1. Table 2 below gives the classification of PPIs.

Table 2: Classes of PPIs (Van der Wouden 1994:56)

	Strong PPIs	**Medium PPIs**	**Weak PPIs**
Minimal negation	–	+	+
Regular negation	–	–	+
Classical negation	–	–	–

1.4 Concluding remarks

As I have pointed out in section 1.1, the problem of polarity is twofold. On the one hand we need to define what a trigger is and which trigger licenses which polarity item and on the other hand scope must be defined. In the remainder of this thesis I will discuss these two problems, in Chapter 2 and Chapter 3 respectively.

1.4.1. Which Trigger Licenses Which Polarity Item?

In the sections 1.3.3, 1.3.4 and 1.3.5 I have described Zwarts's and especially Van der Wouden's approach to NPIs and PPIs. This approach allowed us to arrange the different sorts of negation, NPIs and PPIs, in neat tables. The first thing I want to do in this section is to point out that these tables are somewhat idealised. In reality polarity items tend to be more disorganized. In the sections above, the discussion was mainly about the behavior of polarity items in the environment of monotone-decreasing expressions, anti-additive expressions and antimorphic expressions. We know, however, from section 1.3.3 that there is a fourth class, viz antimultiplicativity. In section 1.3 I assumed that antimultiplicatives and monotone-decreasing expressions didn't differ in the NPIs they were able to license. Van der Wouden (1994) shows that there is at least one exception to this assumption. He found at least one NPI which can be triggered by antimultiplicatives, but not by monotone-decreasing expressions: the expression *rozengeur en maneschijn* (literally: scent of roses and moonshine; a proper English translation is the expression *a bed of roses*). The NPI *rozengeur en maneschijn* makes Van der Wouden's Laws of Polarity less law-like. The behavior of *rozengeur en maneschijn* means that it cannot be concluded beforehand that if an NPI can be triggered by antimultiplicatives, it can be triggered by monotone-decreasing expressions as well. I will give examples using *rozengeur en maneschijn* under the scope of the different subclasses of downward monotonicity.

(141) a. *Het leven is **zelden** *rozengeur en maneschijn*. (monotone-decreasing)
'Life is seldom a bed of roses.'

(142) a. Het leven is **niet altijd** *rozengeur en maneschijn*. (antimultiplicative)
'Life is not always a bed of roses.'

(143) a. *Het leven is **nooit** *rozengeur en maneschijn.* (anti-additive)
'Life is never a bed of roses.'
(144) a. *Het leven is **allerminst** *rozengeur en maneschijn.* (antimorphic)
'Life is by no means a bed of roses.'

However, there is another way to view polarity items. Van der Wouden (1994:12) points out that cross-linguistically there are certain semantic fields in the lexicon where polarity items occur more often. He doesn't want to draw strong conclusions from this observation. The appearances of different NPIs in different semantic fields should rather be considered tendencies. Linebarger (1981) is less careful. She gives three fields in which NPIs can emerge. Firstly there are the scalar endpoints. An example of a scalar endpoint that is an NPI is *a soul.*

(145) I did**n't** see *a soul* at the party.

Secondly NPIs are found in understatements:

(146) I did**n't** know *too much* about wild animals.

Note that both *a soul* and *too much* can be used in positive sentences in other contexts. The third and last class is the class of negated verbs. Examples of negative polarity verbs are *can help, to bother, to need, to care* and *to dare.* Consider for instance.

(147) I *could***n't** *help* hitting him.

This means that we have two ways now of classifying NPIs. Firstly we have the classes of triggers that can license NPIs: that is, we can classify NPIs with respect to their strength, and secondly we have Linebarger's three classes (scalar endpoints, "understaters" and negated verbs). I intend to examine whether there is a match between these two classifications.

In order to do this, a corpus study will be presented in Chapter 2. I will take a closer look at certain Dutch and Afrikaans polarity items, focusing on the contexts in which they can appear. Moreover, I want to find out whether shifts have occurred with regard to the triggers the NPIs require. Such a shift will follow from possible differences in triggering between Dutch and Afrikaans counterparts. Note that there seems to be nothing to stop NPIs from shifting. There does not seem to be a good reason for a weak NPI to be a weak NPI, or for a strong NPI to be

a strong NPI. On the other hand, quantifiers are bound to their logical classes. *Nothing* means *nothing* by virtue of being anti-additive. If *nothing* were to shift to another logical class, its meaning would change completely.

1.4.2 Defining Scope

As I have explained in the introduction to this chapter, the problem of negative polarity is twofold. On the one hand we need a (semantic) definition of the notion trigger and on the other hand there is the grammatical problem of scope. In Chapter 3 I will try to explain the data from the corpus study in terms of a grammatical framework. This is not possible, however, without a proper definition of the trigger. In Chapter 2 I will try to find evidence in the corpus study for Van der Wouden's classification of NPIs. This classification originates from a logical classification of triggers (monotone downward expressions, antimuliplicatives, anti-additives and antimorphics). If there is evidence for Van der Wouden's classification, we can use this information in a Chomskyan framework (e.g. by assuming that it is available in the lexicon).

CHAPTER 2

A DATA CORPUS

2.1 The Corpus Study

2.1.1 Preparing the Corpus Study

In this chapter I will present a corpus study. In the first chapter it was shown that monotone-decreasing expressions can trigger NPIs. It appeared that there were four subsets of downward entailment, viz downward entailment, antimultiplicativity, anti-additivity and antimorphism. On the basis of these subsets Van der Wouden (1994) divided NPIs into a weak, a medium and a strong class. In Chapter 1 Table 1 from Van der Wouden (1994) was shown. This table is repeated below.

Table 1: Classes of NPIs (Van der Wouden 1994:56)

	Strong NPIs	**Medium NPIs**	**Weak NPIs**
Minimal negation	–	–	+
Regular negation	–	+	+
Classical negation	+	+	+

Van der Wouden (1994) also gives a list of Dutch NPIs for each group. To decide which group an NPI belongs to, he uses grammatical judgements. This list is quoted below. I will use some of the items in the list. However, I will not simply repeat Van der Wouden's judgements, but rather classify the NPIs myself on the basis of the results of the corpus study.

Table 2: List of NPIs (Van der Wouden 1994:57)

Strong NPIs	**Medium NPIs**	**Weak NPIs**
mals ('gentle')	ook maar ('even')	kunnen uitstaan ('can stand')
pluis ('okay')	hand voor ogen ('hand before eyes')	ooit ('ever')
voor de poes (gentle')	met een vinger ('with a finger')	een beetje ('a bit')
		hoeven ('to have to')

In the first chapter we came to the conclusion that this classification is an idealized one and that in natural language the arrangement of the NPI classes is fuzzy. Van der Wouden (1994) gives a couple of NPIs that he found to be are exceptional. He claims that the expressions *rozengeur en maneschijn* ('a bed of roses' or literally 'rose scent and moonlight'), *pluis* ('kosher') and *meer* ('anymore') can only be licensed by antimultiplicative triggers.

I want to examine what the different classes of NPIs have in common. Besides the logical classification, Linebarger (1981) gives a grammatical classification. She identifies three fields in the lexicon in which NPIs emerge: scalar endpoints, understatements and negated verbs. This grammatical classification shows similarities with the logical classification. If we consider Table 2, we find that all strong NPIs in the list are understatements and the medium NPIs are scalar endpoints. Among the weak NPIs two verbs are found: *kunnen uitstaan* ('can stand') and *hoeven* ('to need'). This leads to the following hypothesis:

Hypothesis: The logical classification has a grammatical basis.

By looking at the cross-linguistic differences between the Afrikaans and Dutch NPIs this hypothesis can be tested. The corpus study presented in this chapter contains 24 NPIs (twelve Afrikaans items and their Dutch counterparts), divided into four NPI classes which appear in the scope of triggers of four logical classes. For each of these items a data set is created, ideally consisting of a hundred tokens of the NPI in sentences. These sentences have been gathered from various newspapers on the Internet. For Afrikaans, *Die Burger* has been used. For Dutch *De Gelderlander*, *De Limburger* and *BN/De Stem* have been used, and sometimes *Gazet van Antwerpen, De Telegraaf* and *NRC Handelsblad*[1] have been used to complete the list of one hundred sentences. On the basis of the data sets, I will divide the NPIs into logical classes, i.e. into the class of weak, medium or strong NPIs or a fourth class of NPIs triggered by antimultiplicative expressions. Besides this, I will divide the NPIs into classes according to their grammatical properties and check whether this classification matches the logical one. I will pay special attention to the NPIs that show grammatical differences between Afrikaans and Dutch

[1] When using my data as examples I will give always state the source. I will give the date of the issues of the newspapers if possible. Some web sites, however, lack the facilities that are necessary to retrieve the dates.

and see how they behave towards the triggers.

2.1.2 Grammatical Classifications

In chapter 1 I mentioned Linebarger's classification of NPIs. In order to grasp what NPIs really are, she points out three fields in the lexicon in which NPIs emerge: scalar endpoints, understatements and negated verbs.

First consider scalar endpoints. Scalar endpoints either denote a minimal or maximal quantity. Recall the scale given in chapter 1, repeated below:

(1) A Scale, Σ (Ladusaw 1979:108)

p_0 Alex could lift the lightest weight.
↑
p_1 Alex could lift one kilo.
↑
p_2 Alex could lift five kilos.
↑
p_3 Alex could lift twenty-five kilos.
↑
p_{n-1} Alex could lift a hundred kilos.
↑
p_n Alex could lift the heaviest weight.

The last sentence on the scale, p_n, can be restated as:

(2) Alex could lift an elephant.

Here *an elephant* is idiomatically used, symbolizing the heaviest weight, that is, the scalar endpoint at the bottom of (1). Furthermore it was noted in chapter 1 that the scale in (1) can be reversed by negation. Suppose we negate all the sentences in (1). The implication made by the scale would than be from the top to the bottom. If Alex couldn't lift the lightest weight, he couldn't lift one kilo either, nor five, twenty-five nor hundred kilos and so on. Symbolizing the topmost scalar endpoint, the lightest weight, we could for example use *a feather*.

(3) Alex couldn't lift a feather.

Although *an elephant* and *a feather* are used idiomatically here, neither of them is a polarity

item. *An elephant* doesn't require a positive environment and *a feather* doesn't require a negative environment. It is only the special idiomatic use in (2) and (3) that makes them polarity sensitive. Consider *an elephant* and *a feather* in a non-idiomatic sentence below.

(4) The bodybuilder didn't lift an elephant; he lifted a rhino.
(5) A group of ants lifted a feather and carried it away.

In (4) and (5) *elephant* and *feather* are not used as scalar endpoints. Apparently it is not a fixed lexical feature but rather a stylistic feature which determines which words act as scalar endpoints. If we look at the lexicon, however, we can make a list of words that are reserved for use as scalar endpoints and that are polarity sensitive as well. Examples of such items are *a soul*, *a cent* and *a finger* in the expression *to lift a finger*. Consider the following examples:

(6) a. There was**n't** a *soul* at the party.
b. #I met a *soul* at the party and had a nice chat.
(7) a. The dirty job did**n't** earn him a *cent*.
b. #The dirty job earned him a *cent*.
(8) a. Bill did**n't** lift a *finger* to help a friend in distress.
b. #Bill lifted a *finger* to help to help his friend out of money troubles.

These scalar endpoints only make sense in a negative context. The b sentences, above, can be uttered in certain contexts, but the items *soul*, *cent* and *finger* don't denote scalar endpoints in these contexts.

The second group in of NPIs in Linebarger's classification is the understatements. Examples of understatements are:

(9) I'm not *thrilled* by your suggestion. (Linebarger 1981:161)
(10) I'm not *too pleased*. (Linebarger 1981:161)
(11) John was a not *unsuccessful* businessman.

Using an understatement is basically putting a negation in front of the opposite of what you actually mean. Thus the sentences (9) to (11) can be reformulated as:

(12) I'm skeptical about your suggestion.
(13) I'm disappointed.
(14) John was a successful businessman.

There is, however, a rhetorical difference between (9) to (11) and (12) to (14). The first three may be used in an euphemistic way, or in other contexts may sound sarcastic. There is one observation we can already make here. All scalar endpoints in (6)a, (7)a and (8)a above are noun phrases. Among the examples of understatements there is an adverb in (9), a verb in (10) and an adjective in (11).

Finally, Linebarger (1981) recognizes negated verbs as a field in the lexicon in which NPIs emerge. English examples of this group are the modal *to need*, a true verb like *to budge* and a number of verbs that combine with *can*: e.g. *can stand, can bear, can help.*

What is remarkable here is the large number of polarity-sensitive verbs in English that combine with *can*. In Afrikaans and Dutch the combination with *kan* and *kunnen* is productive as well, and again the result is polarity-sensitive. We find: *kan skeel/kunnen schelen* ('to bother'), *kan uithou/kunnen uithouden, kunnen harden* ('can bear'), *kan uitstaan/kunnen uitstaan, kunnen velen, kunnen lijden* (all meaning: 'can stand'), *kunnen aanzien* ('can bear the sight').

2.2 The Data Sets

In order to find out whether Linebarger's three classes have anything in common in terms of triggering, I created data sets for fourteen Dutch NPIs and their Afrikaans counterparts. The complete study consisted of 28 items, equally divided among Linebarger's three classes. Six of them (three Dutch and three Afrikaans) were scalar endpoints, twelve of them understatements (six Dutch and six Afrikaans, of which a total of six were of the type litotes), six negated verbs (three Dutch and three Afrikaans) and finally I considered four quantifying adverbs (two Dutch and their Afrikaans counterparts).

2.2.1 Scalar Endpoints

For the case of scalar endpoints the Dutch *snars*, Afrikaans *snars*, Dutch *greintje* and Afrikaans *greintjie* and Dutch *rooie cent* and Afrikaans *bloue duit* will be investigated. The actual meaning

of the word *snars* has been completely lost in both Dutch and Afrikaans. *Snars* is related to the Dutch verb *snarren*, which means 'make a buzzing noise'. The original meaning of *snars* is 'faint buzzing noise'. Nowadays nobody will use the word in its original meaning, either in Dutch or in Afrikaans. In Dutch *snars* in mainly used with the verb *begrijpen*. In Afrikaans *verstaan* is most frequently used with *snars*. Both *begrijpen* and *verstaan* mean 'to understand'or 'to grasp'.

(15) a. Karel begrijpt **geen** *snars* van het probleem. (Dutch)
b. Karel verstaan **nie 'n** *snars* van die probleem nie. (Afrikaans)
'Karel doesn't understand the problem at all.'

Greintje/greintjie is related to English 'grain'. Just like *snars* it has lost some of its original meaning. Nowadays *greintje/greintjie* denotes a very small amount. The noun phrase it modifies usually denotes something abstract (e.g. hope, fun, strength or respect), see for example (16).

(16) a. Jeanne heeft **geen** *greintje* eerbied voor haar ouders. (Dutch)
b. Jeanne het **nie 'n** *greintjie* respek vir haar ouers nie. (Afrikaans)
'Jeanne doesn't respect her parents at all.'

As a third example of a scalar endpoint the Dutch *rooie cent* ('red cent') and the Afrikaans counterpart *bloue duit* ('blue penny') will serve. These two items differ from *snars* and *greintje/greintjie*, because they are not cognate, although they have almost the same meaning. *Rooie cent* in Dutch is used as a scalar endpoint of sums of money.

(17) a. Bernhard is drie weken op reis geweest zonder een rooie cent uit geven.
'Bernhard has made a three-week trip without spending a red cent.'

Bloue duit has a wider use and is most often found with the verb *omgee vir* ('to give about').

(18) a. Die terroriste het nie 'n bloue duit vir die burgers omgegee nie.
'The terrorists didn't give a damn about the citizens.'

2.2.2 Understatements and Litotes

The items Linebarger refers to as understatements are basically negated adverbs or adjectives. In Leech (1983) understatements (or litotes; Leech doesn't distinguish between understatement

and instances of litotes) are defined as follows: "'Litotes' refers to a case where the speaker's description is weaker than is warranted by the state of affairs described" (Leech 1983:145). Recall the examples of understatements from section 2.1.1:

(9) I'm not *thrilled* by your suggestion. (Linebarger 1981:161)
(10) I'm not *too* pleased. (Linebarger 1981:161)
(11) John was a not *unsuccessful* businessman.

In the above examples we can distinguish between (9) on the one hand and (10) and (11) on the other hand. The difference between these sentences is the difference between an understatement and a special kind of understatement, viz litotes. I will consider litotes here as an understatement that incorporates a double negation. In sentence (11) above the adjective *unsuccessful* is already negated due to the prefix *un-*. In (11) a second negation is added in the form of *not*, negating the adjective and thus canceling its negative meaning. One might assume that there is not much difference between (9) and (11): the first negates an adverb with a positive meaning, whereas the latter negates an adjective with a negative meaning. This, however, is not completely true. There is a striking difference between an ordinary understatements and litotes Below, a scale is presented for an ordinary understatement.

(19)

thrilled	not thrilled

This scale is bipolar. There is no way to get an intermediate level between *thrilled* and *not thrilled*. For *unsuccessful* a similar scale can be made:

(20)

unsuccessful	not unsuccessful

Here again the scale is bipolar. This scale is not completely satisfactory, though. If someone is *not unsuccessful* we might wonder whether he or she is just fairly successful or simply successful. It seems that a third level is required here.

(21)

extreme	mediocre	extreme
successful	not successful	not successful
not unsuccessful	not unsuccessful	unsuccessful

In (21) the adverbs *successful* and *unsuccessful* are considered, the latter being the negated form of the former. If we look at the scale for *successful* we can distinguish two extremes: *successful* and *not successful*. The same holds for *unsuccessful*; it has the extremes of being *unsuccessful* and *not unsuccessful*. If we combine the two levels of *successful* with the two of *unsuccessful* it becomes obvious that there are actually three levels for each of the adverbs. If we consider the level of being not unsuccessful, than we see that this level can be subdivided into two levels. Being not unsuccessful doesn't automatically imply that someone is successful: he/she can be mediocre, that is neither successful nor unsuccessful. The same holds for being not successful: if someone is not successful, he/she can either be unsuccessful or mediocre. This means that the scales of *unsuccessful* and *successful* both have an intermediate level of mediocrity.

If we turn to sentence (10), we can see that something similar is going on there.

(10) I'm not too pleased.

A scale for *too pleased* would look like:

(22)

too pleased	not too pleased

If it is the case that someone is *not too pleased* we might wonder whether he or she is not pleased at all or rather (but not too) pleased ("medium" on the scale). This observation results in the following scale:

(23)

extreme	medium	extreme
too pleased	not too pleased	not too pleased
more than pleased	pleased	less than pleased

Since understatements and litotes have different rhetorical functions, I have provided different data sets for them. The three items I have chosen as examples of litotes are the Dutch: *onaanzienlijk* ('unsightly, inconsiderably'), *onverdienstelijk* ('not meritorious'), and *al te* ('too'). The Afrikaans counterparts are: *onaansienlik*, *onverdienstelik* and *alte*.

In both Dutch and Afrikaans *onaanzienlijk/onaansienlik* and *onverdienstelijk/onverdienstelik* can

be used as an adjective and adverb, although the adjective is more usual. Both items are nice examples of litotes. I will give an example for *onaanzienlijk/onaansienlik*:

(24) a. Het aantal soldaten dat ontplooid wordt, is niet onaanzienlijk.
b. Die getal soldate wat ontplooi word, is nie onaansienlik nie.
'The number of soldiers that will be deployed is rather high.'

If we consider *aanzienlijk* ('sightly'), this has a positive connotation. By adding the prefix *on-* its negative counterpart is created. Subsequently this negative counterpart of *aanzienlijk* is negated (or: has even become an NPI) and this negated negative counterpart has the same meaning again as the original *aanzienlijk.*

Finally consider *al te/alte. Al te* and *alte* differ from the other examples of litotes. *Al te/alte* cannot modify a noun or verb phrase itself, but rather, it modifies an adjective or an adverb. Although it is more than felicitous for these items to occur in a negative context, it is unclear whether they really are NPIs. A sentence like the following sounds completely natural:

(25) a. Onrustbarende voortekenen daarvan zijn maar *al te* zichtbaar. (Dutch)
b. Kommerwekkende tekens daarvan is reeds *alte* sigbaar. (Afrikaans)
'Alarming omens are already too obvious.'

The three items that I will use as understatements in this corpus study are: *pluis* (most accurately translated by 'kosher' or 'okay'), *noemenswaardig* ('worth mentioning', 'considerably') and *rozengeur en maneschijn/maanskyn en rose* ('a bed of roses'). The items are to some extent similar to the items used as litotes. That is, they have an adjectival or adverbial use.

The expression *pluis* can only be used as a predicative adjective:

(26) a. Van verre kon hij zien dat het er **niet** *pluis* was. (Dutch)
b. Van ver af kon hy sien dinge is **nie** *pluis* **nie**. (Afrikaans)
'From far off he could see that things were not kosher.'
'From far off he could see that there was something fishy there.'

It is unclear where this expression comes from. The etymological dictionary gives *zuiver* ('pure') and *glad* ('smooth') or *geplukt* ('plucked') as its original meaning. Nowadays none of these meanings is current in Dutch or Afrikaans. The expression most probably has existed for more

than 300 years (i.e. its is older than Afrikaans), since in both Dutch and Afrikaans it has exactly the same meaning. As I pointed out above, grammatically *pluis* is strictly a predicative adjective (probably due to its etymological root, the participle 'plucked').

Noemenswaardig is similar to the instances of litotes in the way it is used grammatically: it can be both an adjective and an adverb. Its scale, however, is bipolar, so that it cannot be considered an instance of litotes.

Like *noemenswaardig* and *pluis* the expression *rozengeur en maneschijn/maanskyn en rose* is used as an understatement as well. The expression actually is a noun phrase, but it is unclear whether it is used in this way. Consider the sentences below:

(27) a. Het leven van een kunstenaar is geen rozengeur en maneschijn. (Dutch)
b. Die lewe van 'n kunstenaar is nie maanskyn en rose nie. (Afrikaans)
'The life of an artist is not a bed of roses.'

In the Dutch sentence (27)a the negation *geen* ('no') is used. This is the normal way to negate NPs in Dutch. The Afrikaans counterpart of this negation is most frequently *nie 'n* and sometimes *geen* or *g 'n*. However, none of these items is used. Instead, Afrikaans uses *nie*, which can be used to negate adjectives or adverbs and mass nouns, but not count nouns. In section 2.3.2 I will discuss this matter thoroughly.

One other thing should be pointed out here. All examples of scalar endpoints (*snars, greintje/greintjie* and *rooie cent/bloue duit*) are noun phrases. The examples of litotes and understatements are adjectives or adverbs, whereas the usage of *pluis* is purely as a predicative adjective. This means that the examples of litotes and understatements don't show the same homogeny as scalar endpoints, which are always noun phrases. The grammatical variation shown by understatements and litotes might have some influence on the status (weak, medium or strong) of the NPIs, i.e. they might influence the way the understatement is negated.

2.2.4 Quantifying Adverbs

There is at least one field which I found necessary to add to Linebarger's list. Van der Wouden mentions a few quantifying adverbs that show polarity-sensitivity. Among them are *meer* ('anymore'), and *even* ('all that'). For these items I intended to make data sets. However, I encountered a couple of problems. In the first place, all these items are homonymous, which makes it a lengthy process to establish a set of a hundred appropriate occurrences. This is the reason why I resorted to a smaller data set (of fifty instead of hundred sentences) for *meer* in both Dutch and Afrikaans. For *meer* this was a possible solution, because in about 10% of the cases *meer* means 'any more'. This reasonable percentage allowed me to select the tokens I needed "by hand". For Dutch *even,* and its Afrikaans counterpart *ewe,* this percentage was much smaller. *De Limburger* and *Die Burger*'s search modes, however, provided me with another way of searching for the NPIs *even* and *ewe*. These NPIs always precede the predicative adjective they modify:

(31) Inmiddels is **niet iedereen** *even* blij met de Droste-zuster. (De Limburger)
'Meanwhile not everybody was all that happy with the Droste-nurse.'

This property of *even* allowed me to search for *even/ewe* in combination with an adjective. Instead of searching for the adverb only, the predicative adjective was included. By searching for the phrase *even blij*, ('all that happy') for example, many of the homonyms of *even* are filtered out of the search action. A drawback of this method of searching is that there is no clear picture established of the possibilities of the quantifying adverb. In the first place it doesn't become fully clear which items can be modified by *even/ewe.* My current data set consists of *even/ewe* modifying *blij*, *gelukkig*, *tevreden/tevrede* (all more or less meaning 'happy'). Since I needed to choose these items to accompany *even/ewe*, there is no clear picture of what items *even/ewe* can modify. Another drawback is the scope. The search method required *even/ewe* to have the modified adjective to its right. It is very likely that this is the only way *even/ewe* can modify any adjective. However, the search method didn't allow me to find (possibly ungrammatical) exceptions in the written sources.

2.3 The Data

In this section I will present the outcome of the analysis of the various data sets. For each of the four classes defined in the section above (scalar endpoints, understatements, litotes and negated verbs) I will present the way they are triggered and I will pay special attention to the logical classes of the triggers (i.e. monotone downward expressions, antimultiplicatives, anti-additives and homomorphics). Table 3 below shows the distribution of the data set for the Afrikaans verb (*kan*) *skeel*. The data set consists of a hundred tokens. In the first column of the table the trigger of (*kan*) *skeel* is given. The second column shows the number of tokens of the trigger in the data set. Finally in the last column the logical class of the trigger is given.

Table 3: Triggers of the Afrikaans verb (*kan*) *skeel*

Trigger	**Tokens (out of 100)**	**Logical class of trigger**
min	55	monotone downward
nie	30	antimorphic
geen/ nie'n	6	anti-additive
niks	3	anti-additive
nie veel	2	antimultiplicative
niemand	1	anti-additive
conditional	1	anti-additive
question	1	anti-additive
nie juis	1	antimultiplicative

The data of the last column are brought together in a diagram, together with the results of the data set for *kunnen schelen*, the Dutch counterpart of (*kan*) *skeel* (see Figure 1).

Graphs like the one in Figure 1 are meant to make it easy to see if there is a correlation between the classes as defined in section 2.2. and the strength of NPIs as defined by Van der Wouden (1994). If there is such a correlation, this is a strong piece of evidence that it actually is the grammatical use of an NPI (or of any lexical item) that defines how an item is triggered (read: in a weak, medium or strong way).

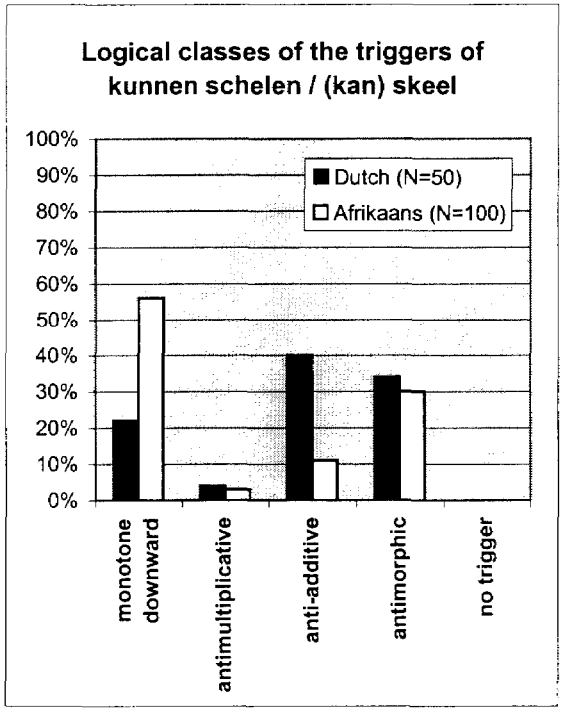


Figure 1

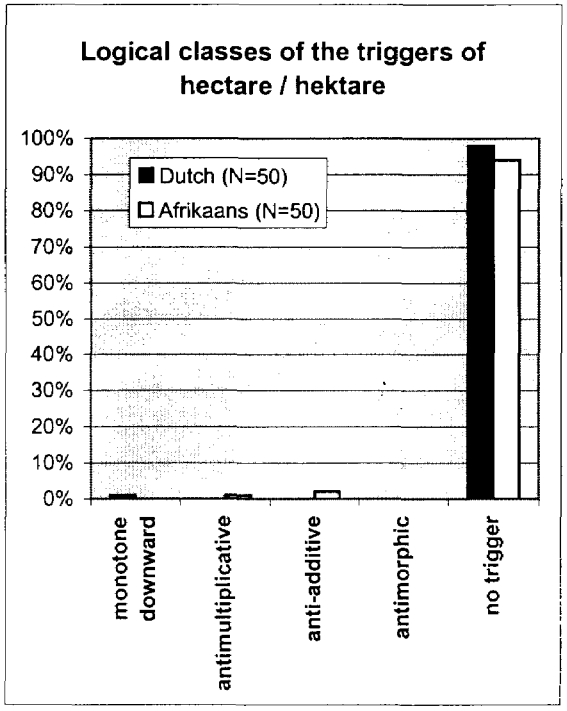


Figure 2

2.3.1 Data Sets for Scalar Endpoints

In this section I will discuss the distribution of the scalar endpoints. The scalar endpoints I want to focus on are those mentioned in section 2.2.1: *snars*, Dutch *rooie cent* and Afrikaans (*bloue*) *duit* and finally Dutch *greintje* and Afrikaans *greintjie*. As I showed in section 2.2.1, all these items have different meanings, but they have it in common that they denote a small amount.

Remember that the scalar endpoints I have selected are believed to be NPIs (though not all scalar endpoints are NPIs). This means that the data should show a high percentage of negations. Among Van der Wouden's medium NPIs (see Table 2 above) three scalar endpoints (viz *ook maar* ('even'), *hand voor ogen* ('hand before eyes') and *met een vinger* ('with a finger')) are identified. Since scalar endpoints seem to be medium NPIs, we can more specifically expect mainly anti-additives and antimorphics as triggers in the data of the items. Scalar endpoints are members of the larger class of measurements.

Before turning to the data of *snars*, *rooie cent*/(*bloue*) *duit* and *greintje/greintjie*, it might be interesting to check the negation of measurements. That is, it might be interesting to find out what percentage of all occurrences of measurements are negated, and if they are negated, it is of interest to discover by which logical class of downward entailments they are negated. In order to find out how a prototypical measurement is negated I investigated the item 'hectare' (in Dutch *hectare* and in Afrikaans *hektaar*). See Figure 2 for the results.

In Figure 2, for Dutch 98 percent and Afrikaans 94 percent of the occurrences are found in positive contexts[3]. The remaining two and six percent respectively are equally spread over the different negative contexts. None of the negative contexts is more prominent than any other. This leads to the conclusion that it is much more common for a prototypical measurement to be found in a positive than in a negative context. Furthermore it can be concluded that if *hectare/hektaar* is negated, it doesn't show a preference for one particular logical class of negatives. With this conclusion in mind, consider the graphs of the scalar endpoints in Figure 4.

[3] In the graph in Figure 2 positive contexts are stated as "no trigger" contexts. Since *hectare* is not an NPI there is no need for it to be triggered, so that in fact all contexts of *hectare* are triggerless. I will, however, use the term "no trigger" to refer to contexts that lack a monotone downward expression.

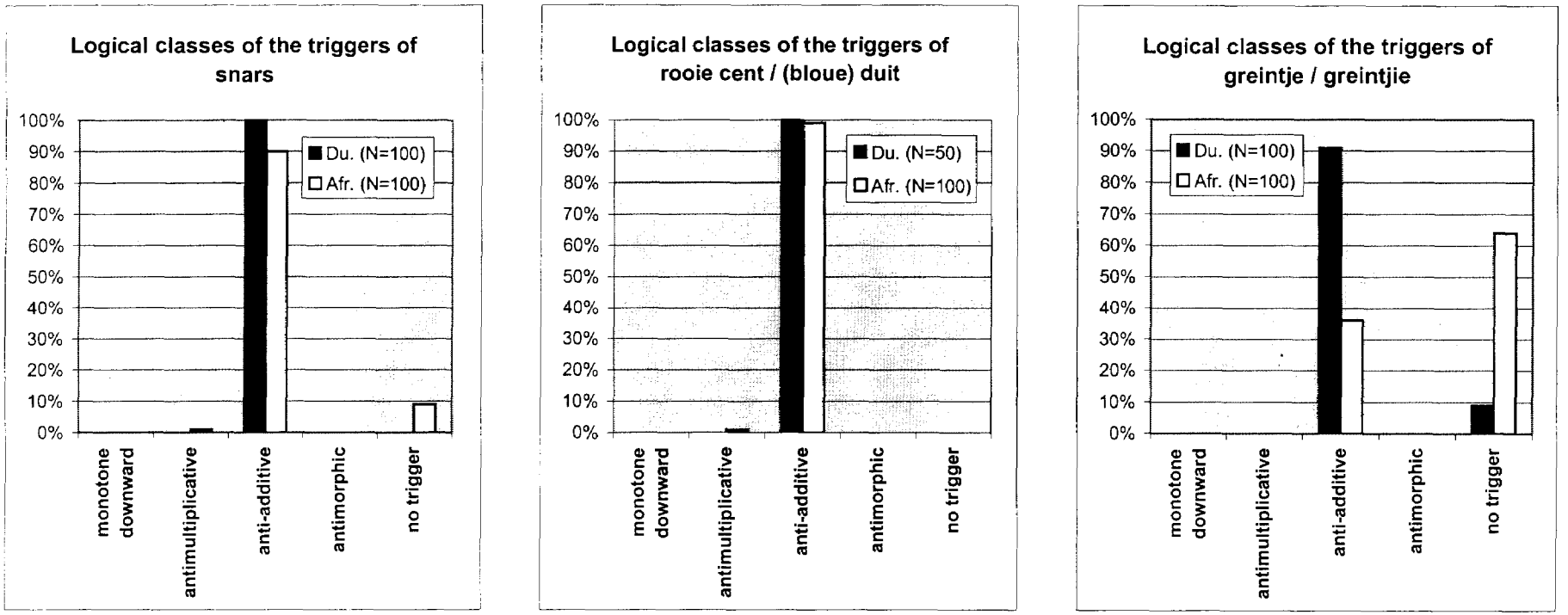

Logical classes of the triggers of snars
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Du. (N=100)
Afr. (N=100)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger
Logical classes of the triggers of rooie cent / (bloue) duit
Du. (N=50)
Afr. (N=100)
Logical classes of the triggers of greintje / greintjie
Du. (N=100)
Afr. (N=100)

Figure 3

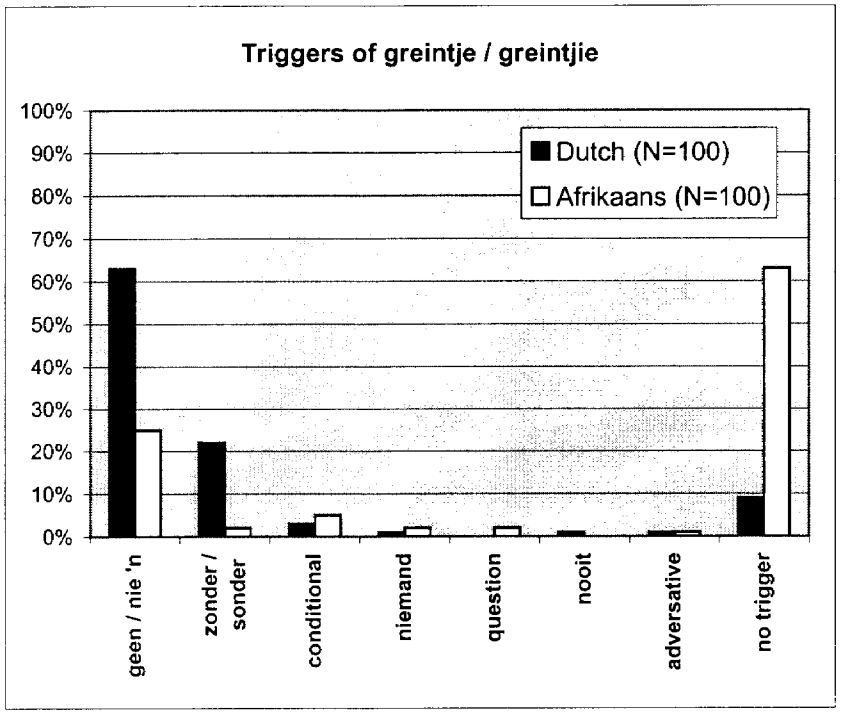

Triggers of greintje / greintje
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=100)
Afrikaans (N=100)
geen / nie 'n
zonder / sonder
conditional
niemand
question
nooit
adversative
no trigger

Figure 4

First of all the high percentage of negation in these data is striking. Dutch *snars* and *rooie cent* and (*bloue*) *duit* appear in negative contexts without exception. They can be considered true NPIs. However, the other items have an extremely high rate of negative contexts as well in comparison with a prototypical measurement like *hectare/hektaar*.

Considering the graphs in Figure 3 it is unclear where the line has to be drawn between NPIs and non-polarity items. Of course it is impossible for *greintjie,* with only 37 percent of its occurrences in negative contexts, to be considered an NPI, although 37 percent still is a high rate, though. Recall that for a pr totypical measurement like Afrikaans *hektaar,* only six percent of the occurrences are found in negative contexts and that this six percent was equally spread over all four monotone downward classes. Furthermore it must be asked why the negative contexts in which *greintjie* occurs are always anti-additive contexts. The only possible answer to this question is that *greintjie* is a scalar endpoint and *hektaar* isn't. Apparently it is the property of any scalar endpoint (polarity-sensitive or not) that if it is negated it has to be negated by an anti-additive expression. How does this relate to Van der Wouden's scale of NPI strength? Van der Wouden's label of medium NPIs doesn't apply to scalar endpoints in Figure 3. Medium NPIs are defined as NPIs that can be triggered by anti-additives and antimorphics. In fact scalar endpoints are stricter; they are constrained to anti-additives only.

A scalar endpoint requires an anti-additive expression as a negation. Knowing this, it might be interesting to take a closer look at the actual anti-additive expressions that negate the scalar endpoints. In Figure 4 the results are given of the analysis of the data set for *greintje/greintjie.* Seven different triggers are found in this data set, all of them belonging to the anti-additive class. Among them, *geen* in Dutch and *nie 'n* in Afrikaans were the most prominent ones. This can be explained easily. Scalar endpoints are noun phrases. The commonest way to negate a noun phrase is by *geen* in Dutch or by *geen* or *nie 'n* in Afrikaans. However, the negation of *greintje/greintjie* is not constrained to *geen/nie 'n*. For Dutch, 28 percent of the sentences have negation other than *geen,* and for Afrikaans twelve percent have negation other than *geen* or *nie 'n*. Nevertheless all negations are anti-additives. If no other anti-additive expression than *geen/nie 'n* was found together with scalar endpoints, then this would explain why the negation was restricted to the class of anti-additives. From Figure 4 it appears, however, that the anti-additive triggering of

scalar endpoints is not a sheer coincidence. Besides *geen/nie 'n* six other anti-additive expressions trigger *greintje/greintjie.*

At least one other question should be asked here: why is it that *snars*, *rooie cent/bloue duit* and Dutch *greintje* are strictly polarity-sensitive, whereas the Afrikaans *greintjie* seems to be much less strictly used? Although one cannot say that *greintjie* is an NPI, *greintjie* can be considered a scalar endpoint, since its meaning denotes a "smallest possible amount". However, for *greintjie,* it is not a requirement that is should appear in a negative context. This makes sense if we take into account that a scale has two endpoints: the lowest possible point and the highest possible point. Consider *greintjie* in the positive sentences below:

(32) Elke *greintjie* inligting word in die rekenaarprogram ingevoer. (Die Burger 28-2-90)
'Every bit of information is entered into the computer program.'

(33) Michel het egter die laaste *greintjie* krag uit Sword Ruler gehaal en naelskraap gewen. (Die Burger 19-5-86)
'But Michel got the last ounce of power out of Sword Ruler and won by a hair's breadth.'

From (32) and (33) it appears that besides denoting a smallest possible amount, *greintjie,* or rather *elke greintjie* or *die laatste greintjie,* can denote the largest possible amount as well. Recall the pragmatic scales of Fauconnier (1975) given in section 1.3.1. Below, *greintjie* is fitted into such a scale.

(34) Scale of *greintjie*

-'n greintjie
-x_1
-x_2
-x_{n-1}
-x_n
-elke greintjie, die laaste greintjie

Greintjie can appear at both the top and the bottom of the scale. For the other scalar endpoints considered in this section this is impossible.

In this section it has become obvious that scalar endpoints require anti-additive negation. There is one very important observation made here, namely, that it is the property of being a scalar

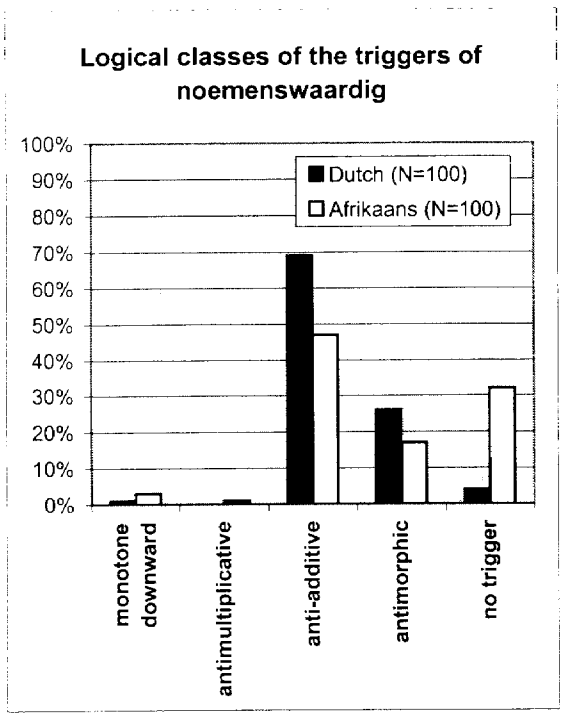
endpoint that requires anti-additivity. The data of *hectare/hektaar* showed that measurements were not specifically attracted to anti-additive contexts. The data of *greintjie* showed that it is not the property of being an NPI that puts constraints on the way an item is negated. The scalar endpoint *greintjie* is not an NPI. Nevertheless, if it is negated, it is negated in the same way, viz by an anti-additive, like the other scalar endpoints that are NPIs. This leaves only one possible conclusion: if an item is a scalar endpoint it must be negated by anti-additives.

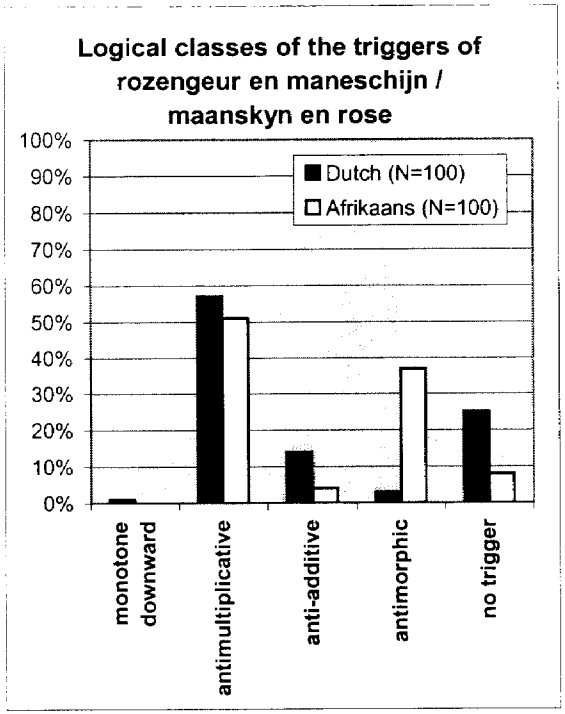
2.3.2 Data Sets for Understatements

In section 2.2.2 *noemenswaardig*, *rozengeur en maneschijn/maanskyn en rose* and *pluis* were chosen to represent the class of understatements in this corpus study. As far as *pluis* is concerned, it has been pointed out that in both Dutch and Afrikaans it can only be used as a predicative adjective. For *rozengeur en maneschijn/maanskyn en rose* it was pointed out that its status as an NP might be doubted. This expression can also function as an AP. In Table 2 *pluis*, *mals* and *voor de poes* are identified as strong NPIs. All of them can function as understatements. This means that it may be possible for *pluis*, *noemenswaardig* and *rozengeur en maneschijn/maanskyn en rose* to appear in antimorphic contexts: if we check Van der Wouden's Table 2 the understatements are found among the strong NPIs. In Figure 5 the results are given of the analysis of the data sets for the understatements.

The graphs in Figure 5 don't give as neat a result as Figure 3 does for the scalar endpoints. Apparently there is a bit more to explain here. However, from Figure 5 it is obvious that understatements aren't strong NPIs. *Noemenswaardig* seems to prefer anti-additive contexts, *rozengeur en maneschijn/maanskyn en rose* is mostly found in antimultiplicative contexts and *pluis* prefers antimorphics.

To get a better picture of the negative contexts selected by understatements, it is important to divide them according to their grammatical status. For *noemenswaardig* there are three main groups that will be considered here: the group of the attributive adjectives (see Figure 6), the


Logical classes of the triggers of noemenswaardig
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=100)
Afrikaans (N=100)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger


Logical classes of the triggers of rozengeur en maneschijn / maanskyn en rose
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=100)
Afrikaans (N=100)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

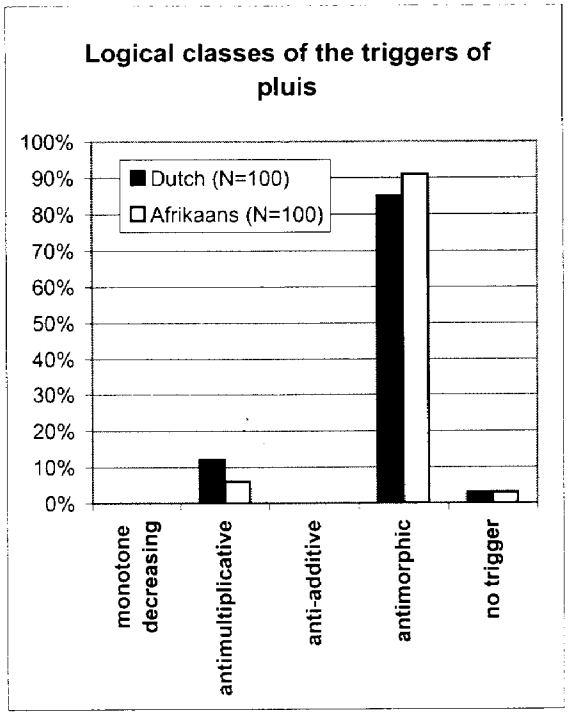

Logical classes of the triggers of pluis
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=100)
Afrikaans (N=100)
monotone decreasing
antimultiplicative
anti-additive
antimorphic
no trigger

Figure 5

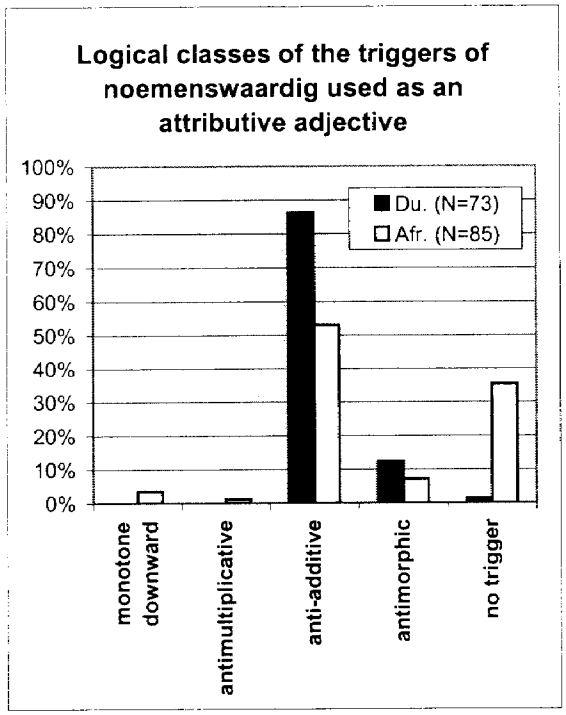


Figure 6

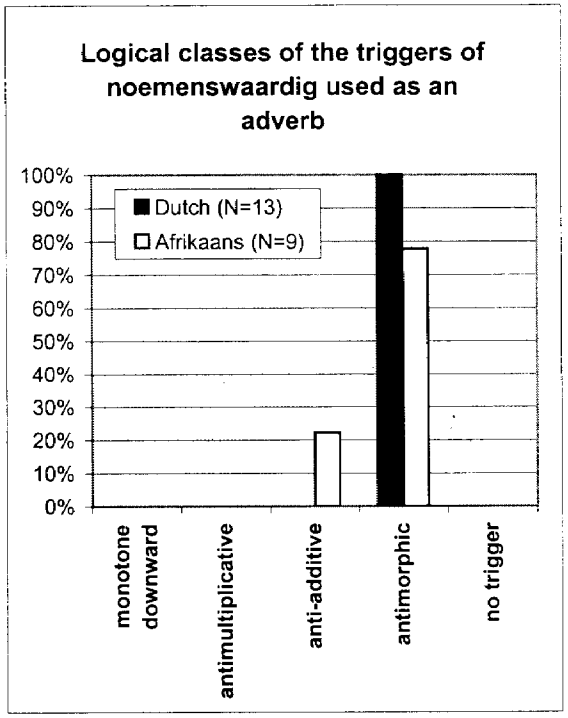
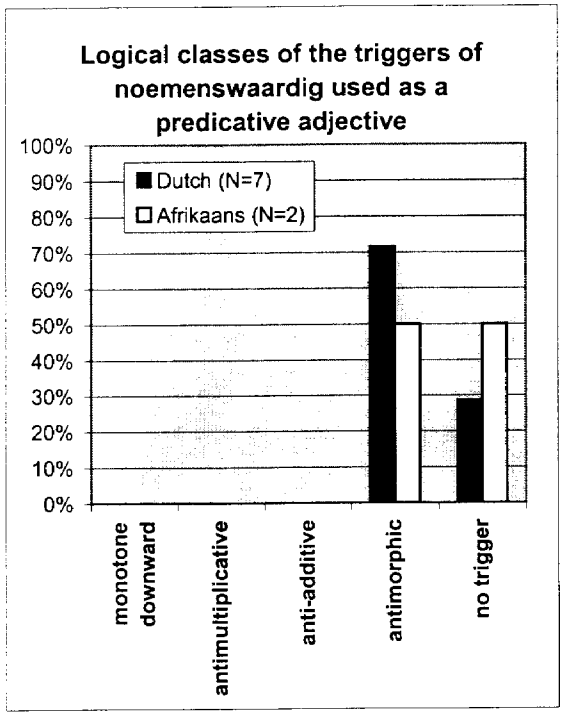


Figure 7


Logical classes of the triggers of noemenswaardig used as a predicative adjective
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=7)
Afrikaans (N=2)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

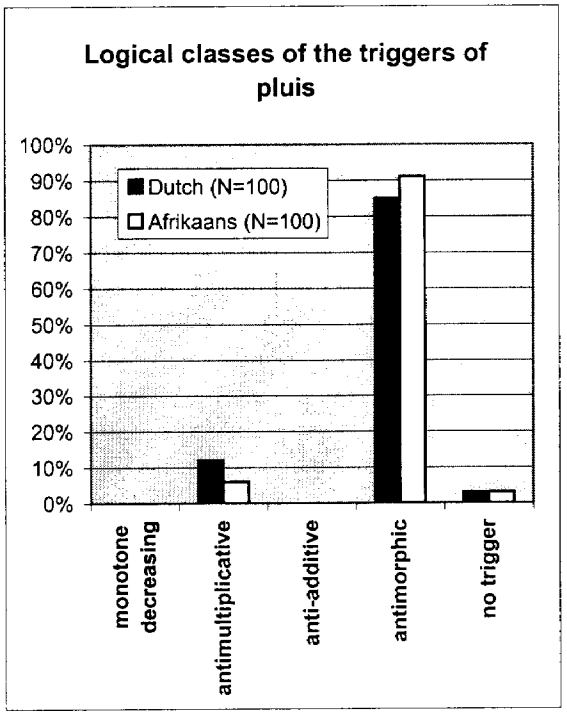

Logical classes of the triggers of pluis
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=100)
Afrikaans (N=100)
monotone decreasing
antimultiplicative
anti-additive
antimorphic
no trigger

Figure 8

group of adverbs (see Figure 7) and the group of the predicative adjectives (Figure 8)[4]. Figure 8 not only shows *noemenswaardig*, but the expressions *maanskyn en rose* (Afrikaans only) and *pluis* (both Dutch and Afrikaans) in their use as predicative adjectives as well.

In example (27) in section 2.2.2 the difference in grammatical status of Dutch *rozengeur en maneschijn* and Afrikaans *maanskyn en rose* was mentioned. Example (27) is repeated below as (35). To highlight the difference in grammatical status, the Afrikaans sentence is given a different (ungrammatical) English translation.

(35) a. Het leven van een kunstenaar is **geen** *rozengeur en maneschijn*. (Dutch)
'The life of an artist is no bed of roses.'
b. Die lewe van 'n kunstenaar is **nie** *maanskyn en rose* **nie**. (Afrikaans)
'The life of an artist is not bed of roses.'

In (35) *rozengeur en maneschijn* and *maanskyn en rose* are NPs, like the English expression 'a bed of roses'. The NPs in Dutch and Afrikaans in (35) require different negations, however, due to a difference between Dutch and Afrikaans. In Afrikaans *maanskyn en rose* is negated by the antimorphic expression *nie...nie*. In the Dutch sentence (35)a the anti-additive *geen* is used. It can be argued that *rozengeur en maneschijn* and *maanskyn en rose* are used as mass nouns in (35). If we look at the negation of the mass nouns "water" ('water' in both Dutch and Afrikaans) and "candy" ('snoep' in Dutch and 'lekkergoed' in Afrikaans) we will recognize a pattern which is similar to the one in (35):

(36) a. Dit is geen snoep. (Dutch)
b. Dit is nie lekkergoed nie. (Afrikaans)
'This is no candy.'
(37) a. Dit is alcohol, geen water. (Dutch)
b. Dit is alkohol, nie water nie. (Afrikaans)
'This is alcohol, not water.'

It appears from Figure 5, though, that three percent of the occurrences of *maanskyn en rose* are

[4] It should be mentioned furthermore, that *noemenswaardig* can occur as a postpositive (in the guise of *noemenswaardigs*) and as an adverb modifying an adjective. Although these occurrences are counted among the hundred used for the graph in Figure 5, I will not make separate graphs for them, because their numbers are small (three and four respectively for Dutch, and for Afrikaans one and three respectively). For the same reason the nominal use of *maanskyn en rose* will not be displayed in a graph.

triggered by an anti-additive. The triggers in these cases, however, are not, like Dutch *geen* in (35)a, left-adjacent to *maanskyn en rose*. The three sentences with anti-additive triggers from the data set for *maanskyn en rose* are given below.

(38) a. **Niemand** wat nugter oor die politiek dink, het egter ooit voorspel dat konsensuspolitiek die ene *maanskyn en rose*, ewige kopknikke en voortdurende eensgesindheid sou meebring **nie**. (Die Burger 17-6-86)
'No one who has a clear picture of politics, however, has ever expected consensus politics to bring a bed of roses, perpetual agreement and everlasting unanimity.'
b. **Geen huwelik, of liefdesverhouding** is net *maanskyn en rose* **nie**. (Die Burger 15-2-89)
'No marriage or love relationship is only a bed of roses.'
c. **Niks in hul verhouding of omstandighede** is *maanskyn en rose* **nie.** (Die Burger 18-2-98)
'Nothing in their relationship or circumstances is a bed of roses.'

From these sentences it can be concluded that triggering of *maanskyn en rose* by anti-additive expressions is possible, provided that the expression is not left-adjacent.

In some exceptional cases *maanskyn en rose* is used as the subject of a sentence as well. In its normal use *rozengeur en maneschijn/maanskyn en rose* appears in a sentence with a focus. In (35) a and b the focus is *het leven van een kunstenaar* and *die lewe van 'n kunstenaar* respectively. Below, an example of *rozengeur en maneschijn/maanskyn en rose* without focus is given.

(39) a. De *rozengeur en maneschijn* van de romantische liefde worden er via de achterdeur uitgesmeten. (De Gelderlander)[5]
b. Die *maanskyn en rose* van die romantiese liefde word by die agterdeur uitgesmyt.
'The bed of roses of romantic love has been thrown out the backdoor.'

In the example above *rozengeur en maneschijn/maanskyn en rose* is used as a mass term in both Dutch and Afrikaans. If *rozengeur en maneschijn/maanskyn en rose* is used without focus, it lacks a negative context in all cases. This special usage is limited, though (six percent in the Dutch data, three percent for Afrikaans).

[5] I collected my data from newspapers on the Internet. Depending on the facilities available on the web sites I was able to give the dates of the issues in which my data appeared.

Consider Figures 6 and 7. From these graphs it appears that *noemenswaardig* is mostly used as an attributive adjective (73 percent for Dutch and 85 percent for Afrikaans). If it is used as an attributive adjective it is usually triggered by an anti-additive. There are, however, instances of attributive *noemenswaardig* triggered by an antimorphic. Three instances are given in (40) below.

(40) a. Het lijkt erop dat we de milieudoelstellingen gaan halen met een **niet** [*noemenswaardig*$_{AP}$] inkomensverlies. (De Gelderlander 22-1-1994)
'It looks as if we are going to meet our environmental targets with no significant loss of income.'
b. *Noemenswaardige* schade was er **niet.** (De Gelderlander 22-4-1996)
'Significant damage, there was not.'
c. Dit leidde **niet** [tot *noemenswaardige* files$_{PP}$] (De Gelderlander 15-2-1996)
'This didn't result in significant traffic jams.'

In most of the sentences with *noemenswaardig* used attributively the noun phrase that includes the attributive is negated. The sentences in (40), however, show three different kinds of exceptions. In (40)a *niet* negates that adjectival phrase that contains only *noemenswaardig*, in (40)b *niet* negates the entire sentence and in (40)c the prepositional phrase is negated by *niet*.
If *noemenswaardig* is used as an adverb (see Figure 7) an antimorphic trigger is preferred. In the Afrikaans data set, there are two (out of nine) sentences in which the adverbial *noemenswaardig* is triggered by an anti-additive:

(41) a. Sommige van die plekke is gebou **sonder** om die natuurlike omgewing *noemenswaardig* aan te tas (Die Burger 27-9-1993)
'Some of the places are built without significantly affecting the natural environment'
b. Ekonome meen dit is **onwaarskynlik** dat die reserwes binnekort *noemenswaardig* sal herstel (Die Burger 8-9-1993)
'Economists believe it to be unlikely for the reserves to recover significantly soon'

Sentence (42) is an example of *noemenswaardig* triggered by the antimorphic expression *nie...nie*.

(42) Die koste gaan **nie** *noemenswaardig* daal as gevolg van hoër produksie elders in die wêreld **nie.** (Die Burger 31-7-1993)
'Prices will not drop significantly because of a higher production elsewhere in the world.'

What is important about the sentences in (41) is that the anti-additive triggers, different from antimorphic triggers (see for example (42)), don't appear left-adjacent to the NPIs. The triggers in (41) are found in the matrix clause, whereas the NPI *noemenswaardig* appears in the subordinate clause. Apparently this is a requirement: if the trigger of the adverb *noemenswaardig* is an anti-additive expression, then the trigger has to appear in a higher clause than the NPI.

Figure 8 shows predicative adjectives. In the graphs it is shown that antimorphism is the most prominent context for predicative adjectives. *Maanskyn en rose* occasionally occurs in anti-additive contexts. These occurrences were shown in (38). Like the sentences in (41) the sentences in (38) have an anti-additive trigger which is never left-adjacent to the NPI. In the next chapter I will discuss them in more detail.

The expressions in Figure 8 show differences in their behaviour towards the antimultiplicative trigger. For *maanskyn en rose* this is the most frequent way of triggering, for *pluis* a minority of the occurrences is triggered by an antimultiplcative and for *noemenswaardig* there is no example in the data set of an antimultiplicative trigger. It seems that it is dependant on the semantics of the NPI whether it is triggered by an antimultiplicative. *Maanskyn en rose* and *pluis* both describe a situation that is rather unstable, so that one can say:

(43) a. Dinge is **nie altyd** *pluis* daar **nie.** (Afrikaans)
'It is not always kosher there.'
b. Dit is **nie vir almal** *maanskyn en rose* **nie.** (Afrikaans)
'It is not a bed of roses for everybody.'

So the instability of a situation can be expressed by an antimultiplicative. For *noemenswaardig* ('worth mentioning') things are different. A very peculiar situation is required for someone to say whether something is always worth mentioning or not for everybody.

2.3.3 Data Sets for Litotes

In section 2.2.2 a distinction was made between understatement and litotes. It was shown that an understatement is a member of a binary set, whereas an instance of litotes is a member of a set with three levels as is shown in (21) and repeated below:

(21)

extreme	mediocre	extreme
unsuccessful	not unsuccessful	not unsuccessful
not successful	not successful	successful

The three possible levels in (21) are: (1) unsuccessful (which implies 'not successful'), (2) not unsuccessful (and at the same time 'not successful') and (3) not unsuccessful (and at the same time 'successful'). In 2.2.2 the distinction between understatement and litotes was made because the rhetorical function of the two is different. This difference might influence the way they are negated. Except for this existence of three levels, litotes and understatements are quite similar and they can have the same grammatical functions: adverbial or adjectival.

In Van der Wouden's list of NPIs in Table 2, no instance of litotes is to be found. However, since litotes is quite similar to understatement, we might expect them both to be triggered in the same way. That is, we might expect litotes to be triggered by antimorphics, since understatements are supposed to be strong NPIs. Recall that in 2.2.2 *al te/alte* ('too') was considered a special case of litotes.

The first thing that should be checked is whether or not these items are NPIs. Table 4 below shows the percentage of negative contexts for litotes.

Table 4: Percentage of negative contexts for litotes

	% Negative Contexts in which Litotes occurs
onoverkomelijk (N=100)	49 %
onoorkomelik* (N=100)	54 %
onaanzienlijk (N=105)	80 %
onaansienlik (N=65)	15 %
al te (N=50)	46 %
alte (N=100)	28 %

* The Dutch items precede their Afrikaans counterparts

Table 4 raises the question of what percentage of an item's contexts must be negative to make

the item an NPI. In the table above, only for Afrikaans *onoorkomelik* (54%) and Dutch *onaanzienlijk* (80%), the majority of their occurrences are in negative contexts. The huge difference in percentage between Dutch *onaanzienlijk* and Afrikaans *onaansienlijk* is due to the homonymy of the word. In both languages the word can mean 'unsightly' and 'insignificant'. In Afrikaans, however, the first meaning, which is not polarity-sensitive, is more common and in Dutch the latter, polarity-sensitive meaning is more frequent.

Furthermore, the grammatical functions of litotes are of interest to us. See Table 5 below:

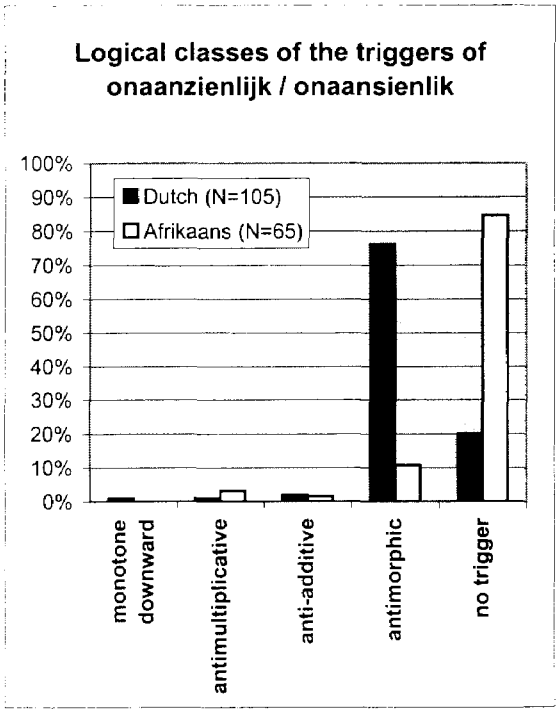
Table 5: Grammatical functions of litotes

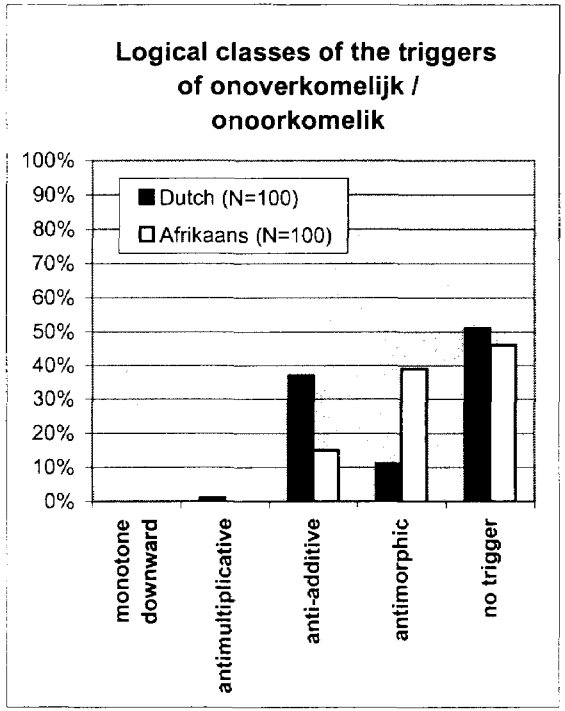
	attributive adjective	**predicative adjective**	**adverb**
onoverkomelijk / onoorkomelik*	86 % / 65 %	14 % / 35 %	0 % / 0 %
onaanzienlijk / onaansienlik	90 % / 72 %	10 % / 28 %	0 % / 0 %
al te / alte**	30 % / 9 %	16 % / 26 %	54 % / 64 %

* The Dutch items precede their Afrikaans counterparts

***Al te/alte* is not used as an attributive or predicative adjective itself. It is an adverbial intensifier, modifying another adverb or an adjective.

In section 2.1 examples of litotes are considered to be strong NPIs. In Figure 9 the results of the analysis of the data from the instances of litotes are shown. In order to see whether the contexts depend on the grammatical use of litotes all data are subdivided on the basis of their grammatical use, and they are brought together in graphs. Figure 10 shows the graphs of *onoverkomelijk/onoorkomelik* and *onaanzienlijk/onaansienlik* used as attributive adjectives and *al te/alte* used as the modifier of an attributive adjective. The data of attributive *onoverkomelijk/onoorkomelik* show that this item appears in anti-additive and antimorphic contexts in Dutch as well as in Afrikaans. Dutch *onaanzienlijk* is mostly found in antimorphic contexts, whereas its Afrikaans counterpart is hardly ever found in any of the downward-entailing contexts. Let us focus on the two items in Dutch. Attributive *onoverkomelijk* is most commonly negated by *geen* ('no'), whereas *onaanzienlijk* clearly prefers the negation *niet* ('not'). Recall that something similar was valid for *noemenswaardig* used as an attributive adjective:


Logical classes of the triggers of onaanzienlijk / onaansienlik
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=105)
Afrikaans (N=65)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger


Logical classes of the triggers of onoverkomelijk / onoorkomelik
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=100)
Afrikaans (N=100)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

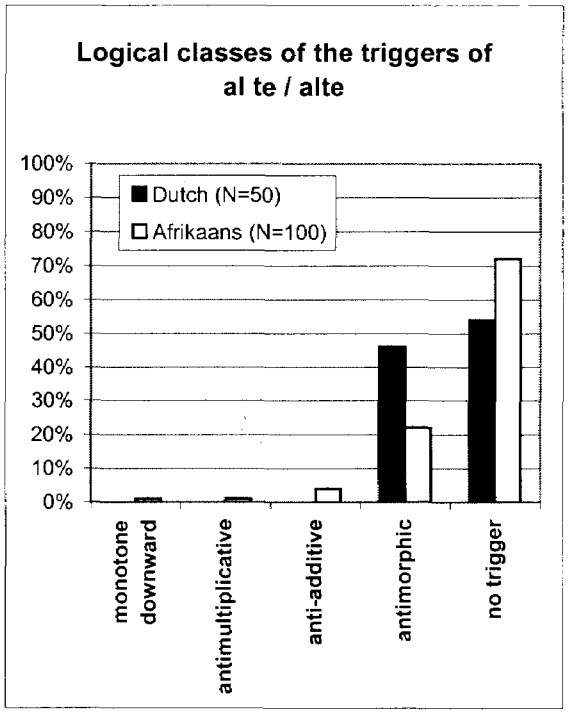
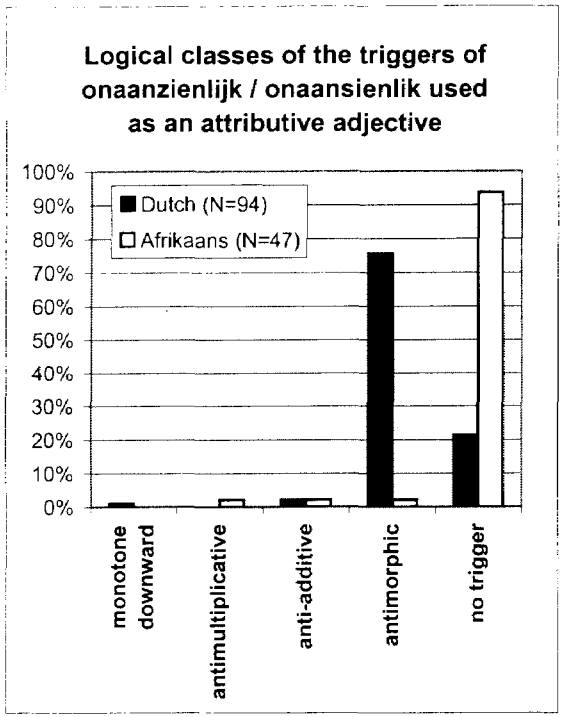
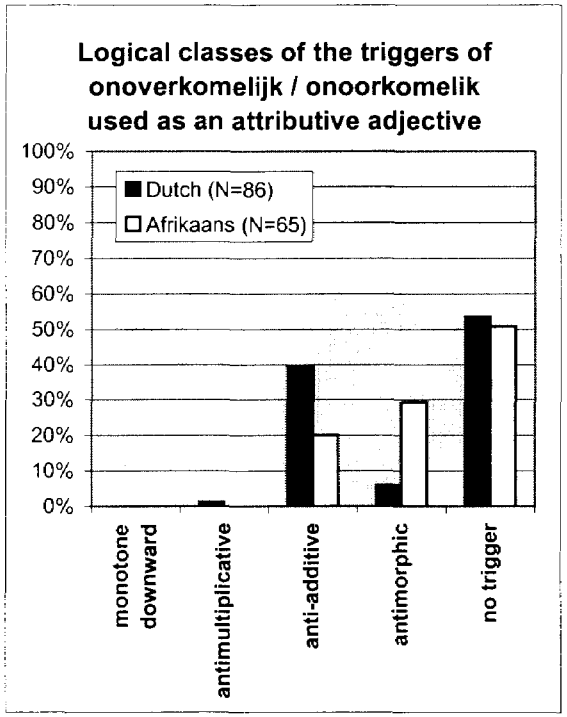

Logical classes of the triggers of al te / alte
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=50)
Afrikaans (N=100)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

Figure 9


Logical classes of the triggers of onaanzienlijk / onaansienlik used as an attributive adjective
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=94)
Afrikaans (N=47)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger


Logical classes of the triggers of onoverkomelijk / onoorkomelik used as an attributive adjective
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=86)
Afrikaans (N=65)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

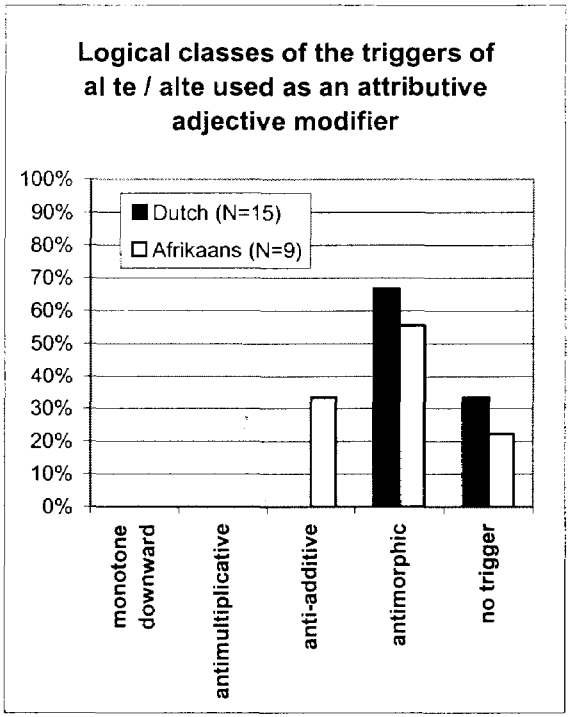

Logical classes of the triggers of al te / alte used as an attributive adjective modifier
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=15)
Afrikaans (N=9)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

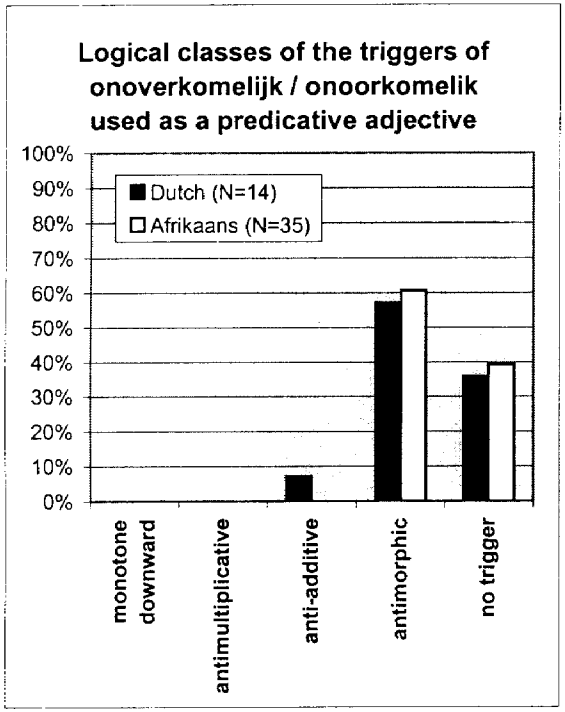
Figure 10

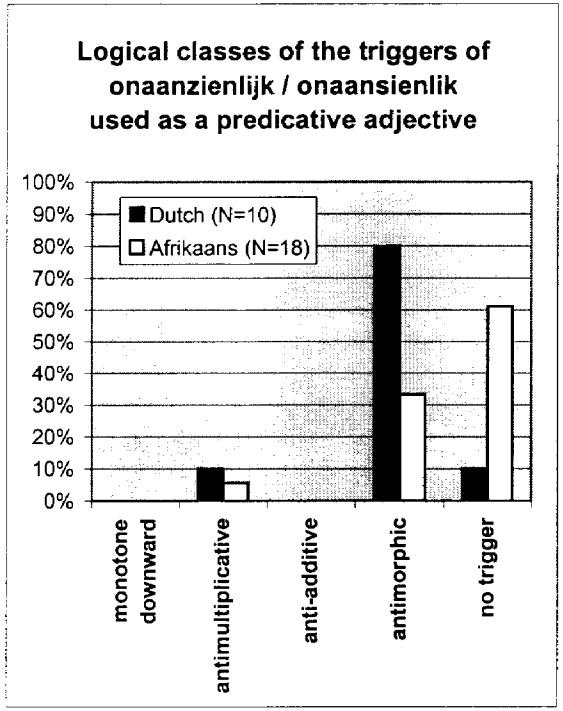
attributive *noemenswaardig* was mostly used in the context of an anti-additive, but there were a couple of exceptions, shown in (38), which contained an antimorphic trigger. The reason for this deviant triggering is grammatical: if an antimorphic trigger is used the negated phrase would not be a noun phrase. The dissimilarity between *onoverkomelijk/onoorkomelik* and *onaanzienlijk/onaansienlik* has a similar cause. Consider the examples below:

(44) Zijn koffieverslaving was geen [onoverkomelijk probleem $_{NP}$]
'His addiction to coffee was not an insurmountable problem.'
(45) Haar oude vader had een niet [onaanzienlijke $_{AP}$] bankrekening.
'Her old father had a not inconsiderable bank account.'

What actually happens in the sentences above is that in (42) the anti-additive expression *geen* negates the entire NP, i.e. the compound of the adjective *onoverkomelijk* and the noun *probleem*. In (43) the antimorphic expression *niet* negates the adjectival phrase only. Apparently it depends on the adjective which negation is preferred: the NP negation or the AP negation. The data for *al te/alte* in Figure 9 show something similar: Afrikaans *alte* can appear in anti-additive contexts, whereas for Dutch *al te* no such occurrences are found. Note, however, that examples in the data of attributive *al te/alte* are limited. For the Dutch expression *al te* the number of examples is only fifteen; for Afrikaans *alte* the number is even smaller (viz nine), so that it is not possible to draw strong conclusions from these data. It can, however, be concluded that instances of litotes don't belong to the strong NPIs, if they are used as attributive adjectives.

If we turn to the instances of litotes used as predicative adjectives, it appears that they are triggered in a different way. In Figure 11 the graphs of litotes expressions used as a predicative adjective are given. The attributive adjectives are most commonly found in anti-additive contexts. Predicative adjectives seem to avoid anti-additive contexts and stick mainly to antimorphic environments instead. Besides, it appears that *onaanzienlijk/onaansienlik* and *pluis* occasionally occur in antimultiplicative contexts, whereas no antimultiplicative contexts are found for *onoverkomelijk/onoorkomelik* and *al te/alte*. Recall that in section 2.3.2, when Figure 8 was discussed, similar results were found: *maanskyn en rose* and *pluis* occurred in antimultiplicative contexts, in contrast with *noemenswaardig*. In section 2.3.2 it was pointed out that this was most probably due to the semantics of the NPIs. I think the same holds for the items in Figure 11.


Logical classes of the triggers of onoverkomelijk / onoorkomelik used as a predicative adjective
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=14)
Afrikaans (N=35)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger


Logical classes of the triggers of onaanzienlijk / onaansienlik used as a predicative adjective
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=10)
Afrikaans (N=18)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

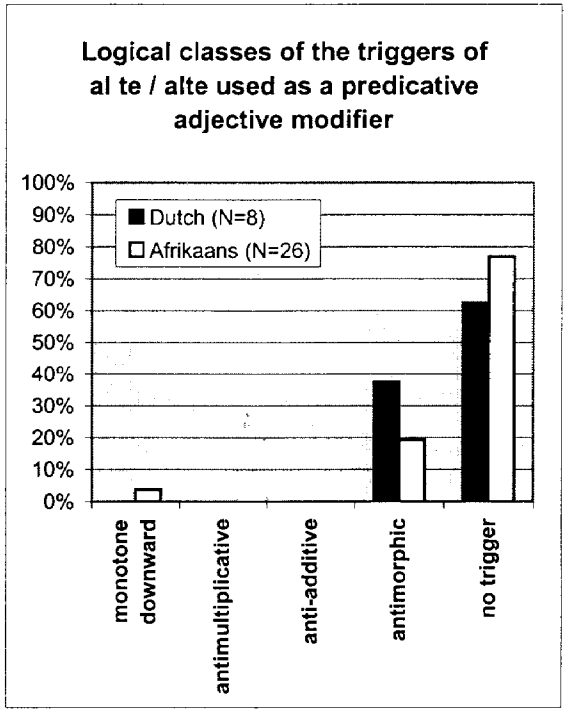

Logical classes of the triggers of al te / alte used as a predicative adjective modifier
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=8)
Afrikaans (N=26)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

Figure 11

There is something else that needs explanation in Figure 11. *Onoverkomelijk/onoorkomelik* occasionally occurs in anti-additive contexts, whereas the other instances of litotes, used as predicative adjectives, do not. For Dutch there is one such occurrence, whereas Afrikaans has two almost similar sentences with an anti-additive trigger. These sentences are given below:

(46) a. Hoewel het niet altijd even makkelijk is, heb ik het **nooit** *onoverkomelijk* gevonden om zelf al die archiefstukken te bewaren. (De Limburger 30-8-95)
'Although is not always that easy, I have never found it impossible to keep all those archive documents myself.'
b. **Geen probleem** is hier *onoorkomelik.* (Die Burger 29-3-89)
'No problem is insurmountable here.'
c. Hulle sê **geen probleem** is *onoorkomelik* **nie**, en ek glo hulle goed. (Die Burger 21-4-89)
'They say no problem is insurmountable and I truly believe them.'

Apparently it is no problem for predicative adjectives to be triggered by anti-additives if necessary. In all the examples in (46) it is somehow necessary. In sentence (46)a *nooit* ('never') (for which there is no antimorphic counterpart) is used. The sentences (46)b and c are special in terms of scope. Sentence (46)b can be expressed in first order logic as:

(47) $\neg\exists(x)$ (x = probleem $\wedge$ x = onoorkomelik)

If in (46)a the antimorphic expression *nie...nie* ('not') had been used, the sentences would have read:

(48) Die probleem is **nie** *onoorkomelik* **nie**.
'The problem is not insurmountable.'

The expression in first order logic for this sentence is:

(49) $\exists(x)$ (x = probleem $\wedge$ x = $\neg$onoorkomelik)

This means that predicative adjectives prefer antimorphic contexts, but that they resort to anti-additive contexts only if it is inevitable.

A comparison of Figure 10 and Figure 11 furthermore shows that predicative adjectives appear more often in negative contexts than attributive adjectives do. In Table 6 below the precise percentages of the predicatives and attributives in negative contexts are given:

Table 6: Percentage of negative contexts of adjectival litotes (attributive vs. predicative)

	% Negative Contexts of used Litotes attributively	**% Negative Contexts of used Litotes Predicatively**
onoverkomelijk	**47 %**	**83 %**
onoorkomelik*	**49 %**	**61 %**
onaanzienlijk	**79 %**	**90 %**
onaansienlik	**6 %**	**39 %**
al te	**67 %**	**33 %**
alte	**78 %**	**23 %**

*The Dutch items precede their Afrikaans counterparts

How can these data be explained? Let us focus on the adjectives first, ignoring, for the time being, the adjective modifier *al te/alte*. It follows from Table 6 that negative contexts are more frequent for predicative adjectives. For an explanation of this phenomenon, consider sentence (50), containing an attributive adjective, and sentence (51), containing a predicative adjective.

(50) Hij bezit een **niet** *onaanzienlijke* som geld.
'He owns a not inconsiderable amount of money.'
(51) De som geld die hij bezit is **niet** *onaanzienlijk*.
'The amount of money he owns is not inconsiderable.'

Sentence (50) is a more complicated way of saying (51). One might wonder why anyone would prefer to use the predicative adjective instead of the attributive adjective, unless they wanted to stress the negation. The answer seems to be that by using the predicative adjective the negated adjective appears in focus position in the final position of that sentence. This means that it is more effective to use the negated adjective predicatively. The same phenomenon explains the successful use of *pluis* as an NPI: *pluis* can only be used as a predicative adjective.

An exception has to be made for *al te/alte*. *Al te* and *alte* are found more frequently in negative contexts if they modify an attributive adjective and not a predicative adjective. But *al te/alte* is exceptional anyway. These items cannot function as adjectives themselves, but only modify adjectives. *Al te/alte* is exceptional for more than one reason. *Al te/alte* not only combines with adjectives, it combines with adverbs as well. Figure 12 shows the frequency of *al te/alte* modifying adverbs. The graph shows more or less the same pattern as the graph of *al te/alte* modifying predicative adjectives: a majority of the contexts are not negative and if the context is negative it is antimorphic.

From Figure 5 in section 2.3.2 and Figure 9 in this section the conclusion can be drawn that the rhetorical feature (i.e. understatement or litotes) has little or no influence on the negative context in which the NPI appears. The differences that occurred in Figure 5 and Figure 9 could be explained mostly by looking at the grammar. For that reason these figures were subdivided according to there grammatical uses in Figures 6,7 and 8 and Figures 10 and 11 respectively. In some other cases (e.g. the antimultiplicative triggering for *pluis* and *rozengeur en maneschijn/maanskyn en rose* in Figures 5 and 8) the semantics of an item seems to play a role.

2.3.4 Data Sets for the Negated Verbs

Negated verbs constitute the third and last of Linebarger's proposed negative polarity fields. In Van der Wouden's list of NPIs in Table 2, the negated verbs are weak NPIs, i.e., they appear in antimorphic, anti-additive, antimultiplicative and downward-entailing contexts. For the verbs *hoeven/hoef* ('have to'), *kunnen schelen/(kan) skeel* ('to bother', 'to mind') and *(kunnen) uithouden/(kan)uithou* ('to bear') I collected data. The results are given in the graphs in Figure 13. The first conclusion that can be drawn here is that Van der Wouden's observation that negated verbs are weak NPIs is probably correct. Furthermore, it follows from Figure 13 that *hoeven/hoef* and *kunnen schelen/(kan)skeel* are strict NPIs. They are never found in positive contexts. *Uithouden* and *uithou* are not so strict. The Afrikaans verb *uithou* has fourteen out of a hundred occurrences in positive contexts and its Dutch counterpart is found in a positive context twenty-five times. Note that there is no coherence between the inconsistent use of *kunnen/kan* and the token in positive contexts, because (*kan*) *skeel*, with optional *kan*, only

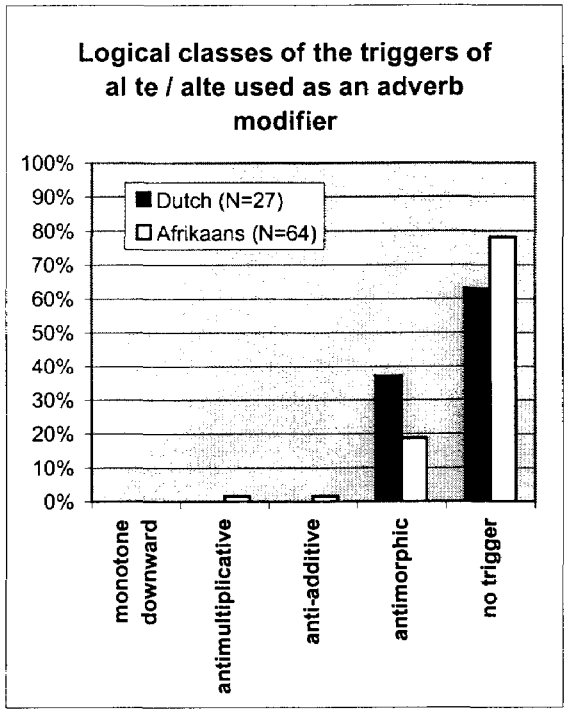

Logical classes of the triggers of al te / alte used as an adverb modifier
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=27)
Afrikaans (N=64)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

Figure 12

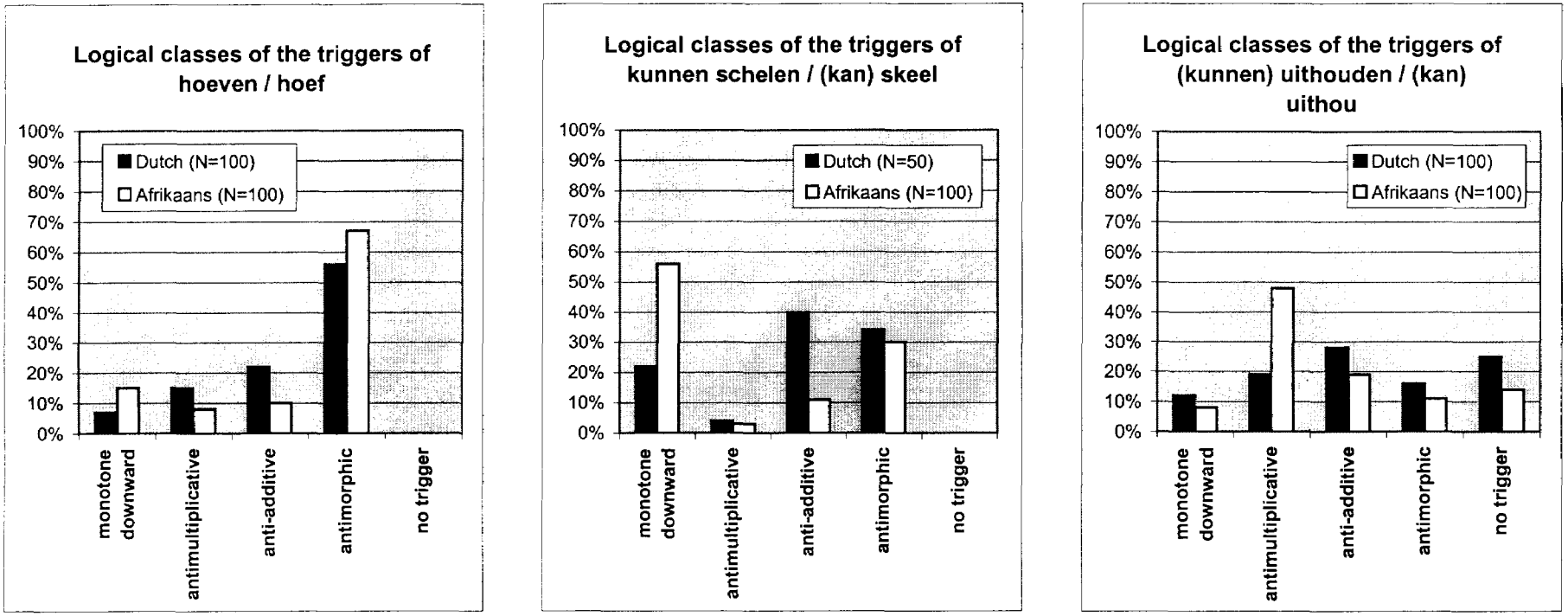

Logical classes of the triggers of hoeven / hoef
Dutch (N=100)
Afrikaans (N=100)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger
Logical classes of the triggers of kunnen schelen / (kan) skeel
Dutch (N=50)
Afrikaans (N=100)
Logical classes of the triggers of (kunnen) uithouden / (kan) uithou
Dutch (N=100)
Afrikaans (N=100)

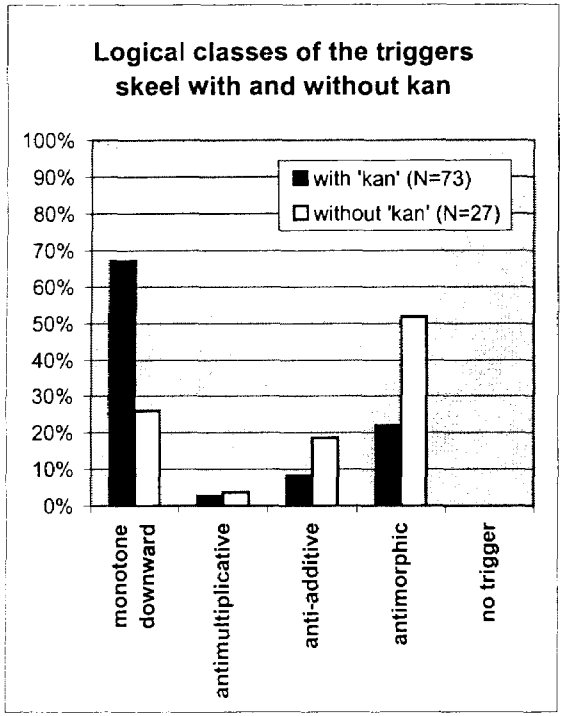
Figure 13

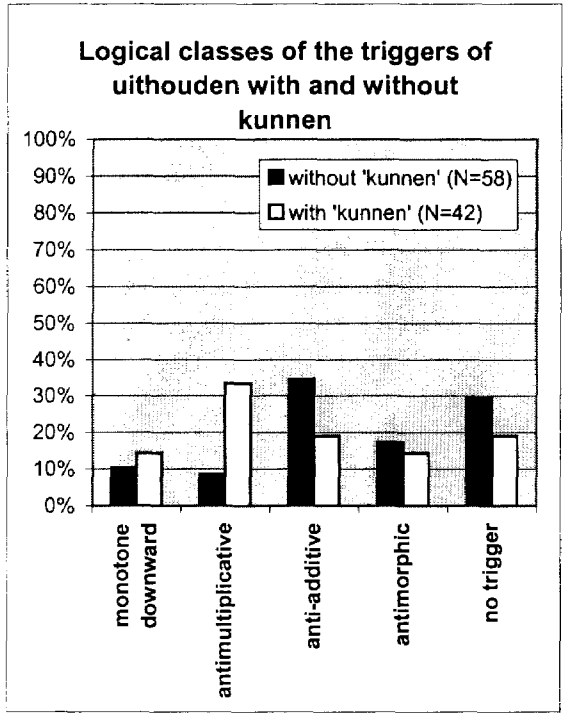
appears in negative contexts.

Another observation concerns the use of *kunnen* (Dutch) and *kan* (Afrikaans) in combination with *schelen/skeel* and *uithouden/uithou*. Dutch *schelen* is always accompanied by *kunnen*. Its Afrikaans counterpart *skeel*, however, is optionally accompanied by *kan*. This means that if *skeel* is used on its own, the meaning of *kan* is incorporated into *skeel*, since there doesn't seem to be a difference in meaning between *skeel* and *kan skeel*. The same observation can be made for *uithouden* and *uithou*. *Kunnen/kan* can be optionally added to both items. In Figure 13 the graphs depict the occurrences of *skeel*, *uithouden* and *uithou* (with and without the modal *kunnen/kan).*

One of the points that needs explanation is the different kinds of triggering of Dutch *kunnen schelen* and Afrikaans *kan skeel*. Dutch *kunnen schelen* appears mostly in anti-additive contexts, whereas *(kan) skeel* seems to prefer monotone downward contexts. A closer look at the data sets for these items leads to the following explanation: it seems that there is an idiomatic difference between the Dutch and the Afrikaans items. For Dutch *kunnen schelen* 20 percent of the tokens are with a scalar endpoint. The scalar endpoints are: *moer* ('nut', 6 percent), *barst* ('crack', 6 percent), *reet* ('crevice' or 'bottom', 4 precent), *zak* ('sack', 2 percent) and *lor* ('rag', 2 percent). Only 6 percent of the occurrences of Afrikaans *kan skeel* come with a scalar endpoint. In all cases the scalar endpoint used is *duit* ('penny'). For Afrikaans 54 of the occurrences contain the monotone downward trigger *min* ('few'). There is only one occurrence with the synonym *weinig*. Apparently there is a strong preference for using *(kan) skeel* together with *min*, whereas in Dutch it is more common to use *kunnen schelen* with a scalar endpoint. Scalar endpoints require an anti-additive negation, that why the contexts of Dutch *kunnen schelen* are mostly anti-additive.

For *(kunnen) uithouden/(kan) uithou*, there seems to be a similar difference in triggering. Dutch *(kunnen) uithouden* is mainly triggered by anti-additives and Afrikaans *(kan) uithou* is mainly licensed by antimultiplicatives. The reason why becomes clear in Figure 14 (the two graphs on the left in Figure 14 give the logical classes of the triggers of *uithouden*, with and without *kunnen* and of *skeel* with and without *kan* ('can')). For Dutch, a majority of the occurrences of *uithouden* are without *kunnen*. For Afrikaans, however, only fourteen percent of *skeel*'s occurrences are not accompanied by *kan*. The graphs show that for both Dutch *uithouden* and Afrikaans *uithou*, antimultiplicativity is the most likely way of triggering the co-occurrence of


Logical classes of the triggers skeel with and without kan
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
with 'kan' (N=73)
without 'kan' (N=27)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger


Logical classes of the triggers of uithouden with and without kunnen
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
without 'kunnen' (N=58)
with 'kunnen' (N=42)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

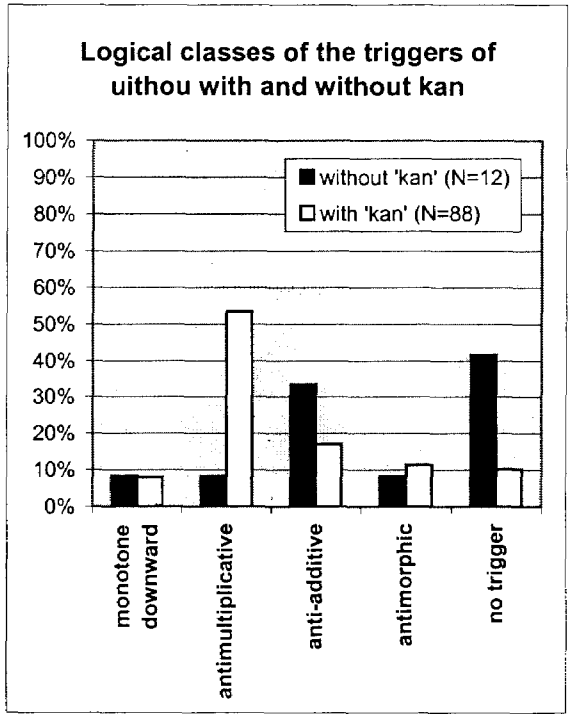

Logical classes of the triggers of uithou with and without kan
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
without 'kan' (N=12)
with 'kan' (N=88)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

Figure 14

uithouden/uithou with *kunnen/kan*. If *kunnen/kan* is left out, in both languages anti-additivity is the most frequent context. Apparently it is the modal *kunnen/kan* that favors antimultiplicatives. This explains the result in Figure 13. For Dutch *uithouden* the number of anti-additives is high, since sixty-one percent of its occurrences are without *kunnen*. For Afrikaans *skeel*, however, a vast majority of the occurrences (viz eighty-six percent) come with *kan*. This is the reason why antimultiplicative contexts are so frequent for *skeel*.

2.3.5 Data sets for the Quantifying Adverbs

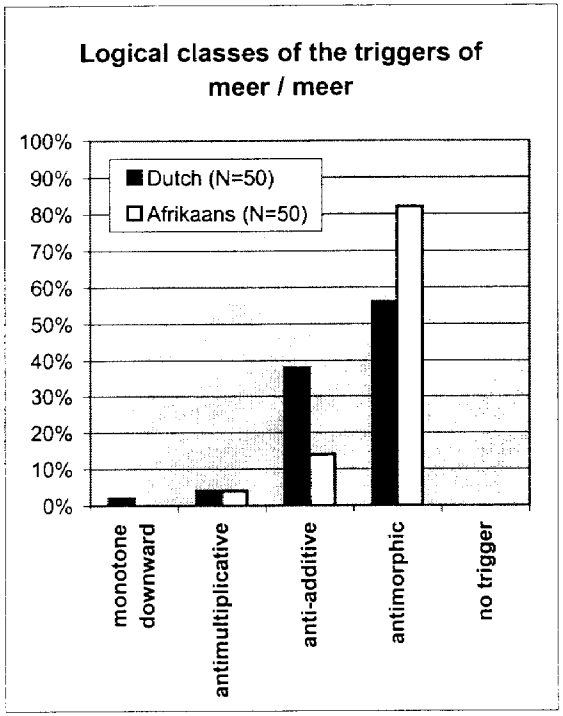
Finally I want to consider a group of words that is not mentioned by Linebarger (1981): quantifying adverbs. I established a data set for *meer* ('any more') and *even/ewe* ('all that'). Figure 15 shows that, in Afrikaans, antimorphic contexts (or more specifically the negation *nie...nie*) are by far the most likely way to trigger *meer*. In Dutch as well, antimorphic contexts are most frequent, but the anti-additive is quite prominent as well. By taking a closer look at the data of Dutch and Afrikaans, the cause of this difference becomes evident. The most common anti-additive expression in Afrikaans is *nie'n* ('no'). *Nie'n* has a more emphatic, old-fashioned variant, viz *geen*. In Dutch there is no true counterpart of Afrikaans *nie'n*. The most frequent anti-additive in Dutch is *geen*. In the Afrikaans data set for *meer* the anti-additive expression *nie'n* is not to be found. Apparently it is not a valid trigger for the NPI *meer*. The variant of *nie'n*, *geen*, does occur as a trigger of *meer*.

(52) a. Zij hebben **geen** verblijfplaats *meer*. (Dutch)
b. Hulle het **geen plek** *meer* om te bly nie. (Afrikaans)
'They had no place to stay any more.'

Although a similar construction with *nie'n* is possible in Afrikaans according to the judgements of informants, but this construction was not found in my data set. From this we can conclude that a sentence like (53) is marked.

(53) Hulle het **nie'n plek** *meer* om te bly nie. (Afrikaans)
'They had no place to stay any more.'

What happens in Afrikaans is that where Dutch would use *geen*, Afrikaans would have the choice


Logical classes of the triggers of meer / meer
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=50)
Afrikaans (N=50)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

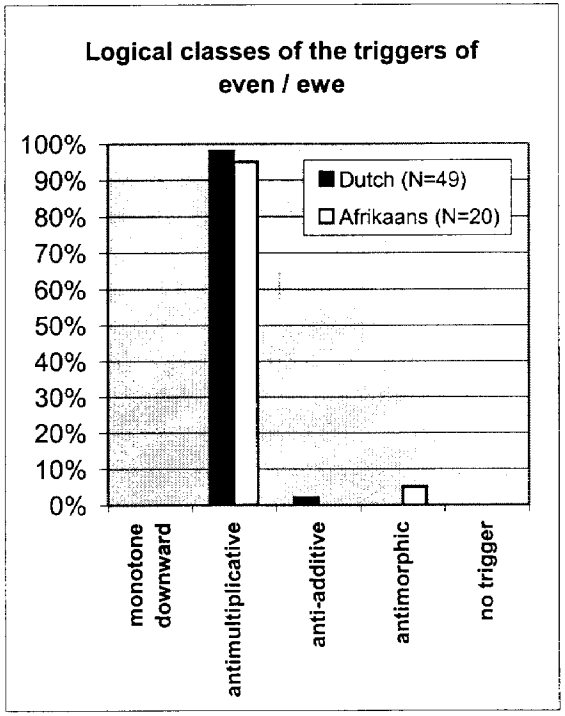

Logical classes of the triggers of even / ewe
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Dutch (N=49)
Afrikaans (N=20)
monotone downward
antimultiplicative
anti-additive
antimorphic
no trigger

Figure 15

between *geen* and the antimorphic trigger *nie,* whereas *nie'n* doesn't seem to be an option. Below, two examples of the triggering by *geen* and *nie* in Afrikaans are given, together with their Dutch and English translations.

(54) a. Vele talentvolle seuns sien **nie** *meer* kans om na matriek aan rugby deel te neem **nie.** (Die Burger 2-7-1993)
b. Veel talentvolle jongens zien **geen kans** *meer* om na hun eindexamen aan rugby te doen. (Dutch)
'Many talented boys don't see any opportunity any more to play rugby after their matric.'

(55) a. Sedertdien het ons **nie** *meer* 'n probleem met 'gees' gehad **nie.** (Die Burger 18-6-1993)
b. Sedertdien hebben we **geen problemen** *meer* met 'geest' gehad. (Dutch)
'We have had no problems with 'spirit' ever since.'

The patterns of occurrence of the data of *even/ewe* are much more straightforward: these items are mainly found in antimultiplicative contexts. For both Dutch *even* and Afrikaans *ewe* there is only one exception found in the data set for *even* and *ewe*. The reason why these results are so neat is probably because of their restricted use. In both Dutch and Afrikaans *even* and *ewe* can only modify a limited number of adjectives, all of which have meanings which are synonymous with 'happy'. Consider for example:

(56) Nie alle Duitsters was ewe gelukkig met die van van die Berlynse muur nie. (Die Burger 22-12-90)
'Not all Germans were equally happy with the fall of the Berlin wall'

Although *meer* and *even/ewe* can both be called quantifying adverbs, they have in fact very little in common. *Meer* always appears to the right of its trigger. *Even/ewe* always modifies a predicative adjective and is always to be found left-adjacent to this adjective. Its trigger can occur much more freely in the sentence, but its logical class is much more restricted (viz antimultipicative), whereas *meer* occurs in antimultiplicative, anti-additive and antimorphic contexts. This partly explains why the patterns of triggering of the two items are different. Another reason for the different triggering patterns must be sought in the idiosyncracy of the expressions.

2.4 Conclusions

Looking back at the graphs in Figures 1 to 15, the first thing that can easily be concluded about the data is that hardly any of the items that were considered NPIs in the beginning of this chapter are consistent in their patterns of negation. Although most of them have a high, or even an extremely high, percentage of occurrences in negative contexts, there are almost always positive exceptions. Only the verbs *hoeven/hoef* and *schelen/skeel* and the quantifying adverbs *meer* and *even/ewe* were found exclusively in the scope of monotone downward expressions. In all the other cases, negative polarity seemed to be a tendency rather than a prerequisite.

The hypothesis that was formulated at the beginning of this chapter was:

> **Hypothesis**: The logical classification has a grammatical basis.

Is there evidence for this hypothesis found in the corpus study? In order to answer this question I will recapitulate the different grammatical classes one by one.

Scalar endpoints: From the data of the scalar endpoints it appeared that they occurred with anti-additives if they were NPIs. If they were not NPIs, then if they were negated, they were negated by anti-additives. This is a strong piece of evidence for the hypothesis.

Understatements and litotes: The results for understatements and litotes were less straightforward, though the data showed some strong tendencies in terms of what grammatical function was triggered by which trigger. The predicative adjectives, for instance, were mainly triggered by antimorphics and sometimes (if it was allowed by the semantics of the expression) by antimultiplicatives. However, there were some instances of predicatives triggered by anti-additives as well. These instances (see example (46)), however, seemed to have special requirements in terms of scope. This means that semantics is unable to solve this problem and that syntax comes into play. In case of *rozengeur en maneschijn/maanskyn en rose* it was shown that some differences were due to grammatical differences between Dutch and Afrikaans. In other cases (e.g. the different meanings of *onaanzienlijk/onaansienlik*) the semantics of the expressions may have caused exceptions.

Negated verbs and quantifying adverbs: As I mentioned above, the verbs *hoeven/hoef* and *schelen/skeel* were exceptional because they appeared exclusively in negative contexts. What can be concluded from this outcome? Why do these verbs need their triggers so desperately whereas other NPIs seem to be less demanding of triggers? The same holds for *meer* and *even/ewe*. Both items are inevitably triggered. It might be that verbs and quantifying adverbs have a special status in the grammar. I will go into this matter in the next chapter.

There are two other issues that need some explanation. *Even/ewe* was mainly triggered by the antimorphic expressions *niet* and *nie...nie* or by antimultiplicative expressions. Why is it impossible for anti-additives to trigger *ewe/even*? Furthermore, recall that the Afrikaans data set for *meer* contained sentences with anti-additive triggers. For example, the anti-additive trigger *geen* was found in the context of *meer*. However, *nie 'n* is anti-additive as well and on top of that it is a perfect synonym of *geen*. Although it is quite possible for *geen* to act as a trigger, for *nie 'n* this is impossible. This complicates Van der Wouden's idea of weak, medium and strong NPIs.

Apparently the matter is less straightforward than Van der Wouden hypothesizes it. Although a great deal of the triggering can be explained semantically by distinguishing the different logical classes of negation, some questions remain open. Above, I mentioned the anti-additive triggering of predicative adjectives (see the examples in (46)) and the puzzling difference between Afrikaans *geen* and *nie 'n* as triggers of the quantifying adverb *meer*. Since semantics seems to be unable to give a proper semantic explanation for triggering, the answer might be grammatical and formulated in terms of scope. In Chapter 3 I will look at the data from a grammatical angle and to use a grammatical approach in explaining the triggering of NPIs. In this approach, however, I want to incorporate the logical definitions of the triggers, since they have been shown in Ladusaw (1979), Zwarts (1981, 1986) and Van der Wouden (1994) to be an important step forward in our attempt to understand the puzzle of negative polarity.

CHAPTER 3

POLARITY IN THE MINIMALIST PROGRAM

3.1 Polarity and the MP

In Chapter 1 it was shown that according to Ladusaw (1979), Zwarts (1981, 1986) and Van der Wouden (1994), triggers belong to logical classes. These different classes show a particular behaviour towards NPIs. On the basis of this behaviour, Van der Wouden (1994) divided the NPIs into three different groups: weak NPIs, medium NPIs and strong NPIs.

The most important conclusion drawn from the corpus study in Chapter 2 was that the different groups of NPIs have different grammatical properties and that Van der Wouden's division of the NPIs actually has a grammatical basis.

This being the case, it should be possible to describe the behaviour of NPIs in terms of a grammatical framework. In this Chapter I will investigate the possibilities of such a description in terms of the Minimalist Program (MP). Initially in this chapter what I will do is give an overview of the grammatical structures of the sentences in the data from Chapter 2. In Chapter 2 the data were divided into scalar endpoints, understatements, instances of litotes, negated verbs and quantifying adverbs. In section 3.2 I will broadly outline the Minimalist Program, with special emphasis on negation. In section 3.3 I will give an overview of the grammatical structures of the different classes of data. I will especially emphasize exceptional ways of triggering, i.e. the ways of triggering that cannot be explained by the distinctions between the logical classes. The aim of this chapter is to find out how far it is possible to account syntactically for the sentences that cause problems for a purely semantic approach.

3.2 The Minimalist Program

3.2.1 Dutch and Afrikaans in the MP

In this section I will spell out some topics in the MP that are important to the licensing of polarity items. I will start by giving a short overview of how Dutch and Afrikaans sentences can be dealt with in MP. Firstly, I will pay attention to the word order in matrix clauses and in subordinate clauses. Secondly, I will show how negation can be approached, especially the Afrikaans double negation. I will mainly follow the account of the Minimalist Program as given by Radford (1995a, 1995b), Webelhuth (1995) and Haegeman (1994). In addition to this I will use Haegeman's (1995) and Klooster's (1993) approaches to negation in Dutch and Haegeman's (1995) and Oosthuizen's (1997) approaches to negation in Afrikaans.

In the MP the words in a simple sentences like the ones in (1) below are taken from the lexicon.

(1) a. Jan breekt zijn been. (Dutch)
b. Jan breek sy been.
'Jan breaks his leg.'

As a first step, the Computational System (CS) forms a Verb Phrase (VP):

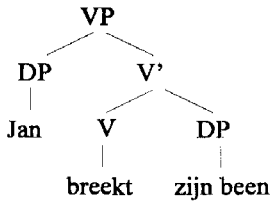


Figure 1

In Figure 1 the VP splits up in a V' and a specifier (Spec VP). In the example above the Spec VP if filled by the Determiner Phrase (DP) "Jan". The V' consists of a head V (filled by "breekt") and a complement, the DP "zijn been". In order to find their proper places in the sentence these phrases have to move. To make sure that the phrases move to the right place a checking system is operative. Phrases that function as subject, object or auxiliary have a bundle of abstract features (which are also referred to as formal features or Φ-features, e.g. tense, case, agreement, person, number and gender).

Φ-features have to be checked in functional heads. In the specifier of the Agreement Subject Phrase (Spec AgrSP) the Φ-features of the subject are checked and in Spec AgrOP the Φ-features of the object are checked. The head of AgrSP carries tense-features. That is why the finite verb has to rise to the head of AgrSP in order to have its tense features checked. The Φ-features can be divided into two kinds: N-features and V-features. N-features are features in the specifiers of phrases. These features have to be checked against the N-features of a feature bundle that is raised to the head of that same phrase at some stage in the derivation. This stage is either before Spell-Out, if it is an overt move, or after Spell-Out in the case of a covert move. Heads of functional phrases (AgrSP, Agreement Object Phrase (AgrOP), Tense Phrase (TP) and Negation Phrase (NegP)) carry V-features. Note that AgrSP and AgrOP are basically the same kind of phrase. The difference is that the former governs the TP and the latter the VP. It is this difference that gives the AgrSP the nominative Case feature and the AgrOP the objective Case feature. The V-features of the functional phrases have to be checked against the V-features of the heads to which they are raised. The checking takes place in the course of the derivation of the structure. One of the ways in which this checking can take place is by overt movement of the lexical category or its bundle of Φ-features. This is the case when a functional head has strong Φ-features. If a functional head has weak Φ-features the movement can be procrastinated and can take place covertly at a later stage of the derivation: after Spell Out.

Following Oosthuizen (1997) (who in turn follows Zwart 1997) and Klooster (1993), I will assume that AgrS, AgrO and T all have strong Φ-features in Dutch and Afrikaans. This entails that a structure like the one in Figure 1 above will undergo the following derivation:

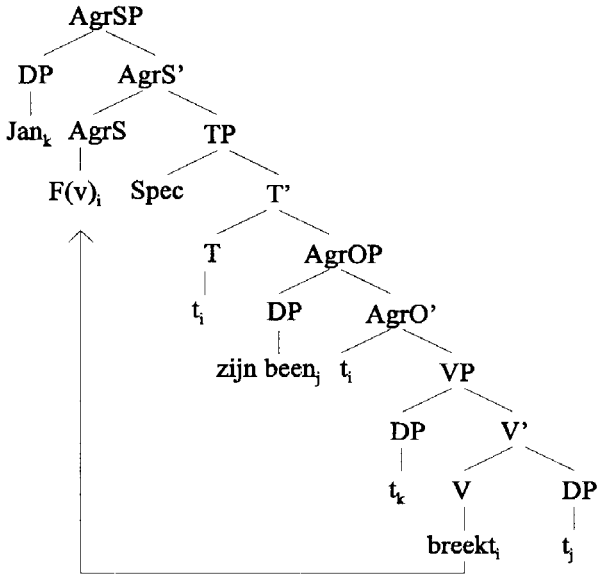


Figure 2

In Figure 2 the VP first merges with AgrOP. This allows the object to raise to Spec AgrO and V to raise to the head of AgrO. In Spec AgrO the object can check its objective case against the strong N-features of the AgrO that has combined with V. The N-features of the verb will move up to AgrO to check its Case feature against the strong N-features of Spec AgrO. Next, AgrOP merges with TP. The Φ-features of the verb move from AgrO further up to T, where the strong tense features can be checked. The TP merges with AgrSP. The combination of T and AgrSP creates the N-feature nominative case. This strong N-feature forces the subject to raise to Spec AgrS to have its Case features checked. The verb's bundle of Φ-features raises from the head of T to the head of AgrS, where it checks the strong V-features: person, number and gender. However, the bundle of Φ-features F(v) can't remain in AgrS like this: Φ-features need lexical categorical features in order to be licensed in a site. It is impossible for F(v) to move to a higher position, because it is already in the highest functional head. The only way to have F(v) licensed in AgrS is to move the lexical categorical head of V, viz *breekt*, to AgrS as well.

In both Dutch and Afrikaans the surface word orders of matrix clauses differ from those of subordinate clauses. Matrix clauses have an SVO order, similar to the English word order, but subordinate clauses have an SOV word order. Compare the matrix clauses in Dutch and Afrikaans

given in (2) to the subordinate clauses given in (3):

(2) a. Jan breekt zijn been. (Dutch)
b. Jan breek sy been. (Afrikaans)
Jan breaks his leg.
'Jan breaks his leg.'

(3) a. ...dat Jan zijn been breekt. (Dutch)
b. ...dat Jan sy been breek. (Afrikaans)
...that Jan his leg breaks.
'...that Jan breaks his leg.'

It is obvious that the different superficial word orders need different derivations. Figure 3 below shows how this matter can be dealt with:

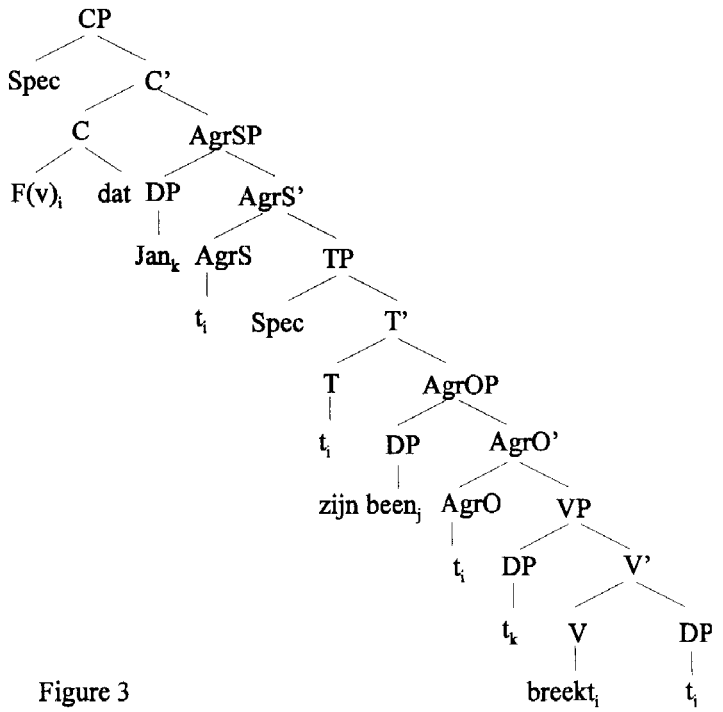


Figure 3

The derivation in Figure 3 is quite similar to the one in Figure 2. The subordinate clause, however, is introduced by the complementizer *dat*. In Figure 3 an extra functional category is added to the AgrSP, namely CP. For F(v) this means that after it is raised to AgrS there is a higher head to which it can raise in order to find a site that licenses its Φ-features. The head of CP does have lexical categorical features, since it contains the lexical head *dat*. Hence there is no need for *breekt* in Figure

3 to move all the way up to AgrS. The AgrS-to-C movement is much more economical and thus preferable in terms of the MP, where economy is one of the guiding principles.

3.2.2 Negation in the MP

In the previous section it was shown that functional heads are added to grammatical trees in order to derive the right PF and LF from the canonical structure. Negation can be dealt with in the same way. In order to place a negation in the right place in PF and LF a new functional category is created: NegP. In this approach either the Spec Neg or the head of the NegP is filled by a lexical category, or both the Spec Neg and the head are filled. This will depend on the language. Haegeman (1995) finds evidence for this in West Flemish, a dialect of Dutch. An example of a negative sentence in West Flemish is given below:

(4) ...da Valère woarschijnlijk nie nor us en-goat. (Haegeman 1995:117)
'...that Valère probably doesn't go home.'

West-Flemish has double negation. In the sentence above, the negative clitic *en-* is prefixed to the auxiliary *goat*. This negative clitic coincides with the neg-operator *nie*, which is similar to Dutch *niet*. For the sentence above Haegeman provides the tree diagram in Figure 4. According to Haegeman (1995), NegP dominates TP and TP dominates VP. Haegeman believes that all projections are head-final, except for NegP (since the clitic *en-* precedes the auxiliary). In the figures above I have assumed left-headedness, which is why this diagram might look unfamiliar:

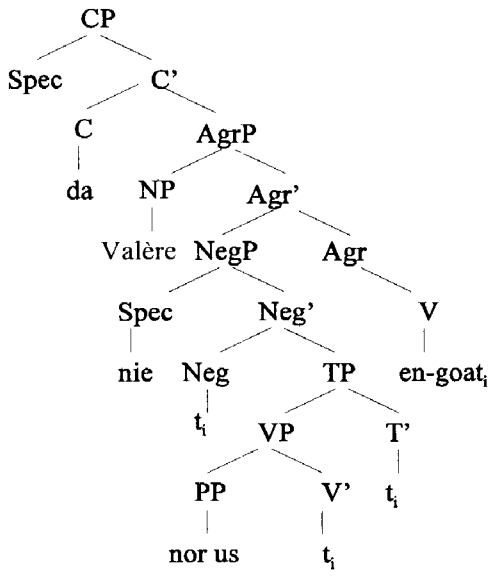


Figure 4

As shown in Figure 4, the auxiliary *goat* is first moved from V to T. This movement is necessary for *goat* to have its tense features checked. The next step is from T to Neg. V raises to Neg to pick up the negative clitic *en-*. The last step is from Neg to Agr. In Agr the number of the auxiliary is checked. In the course of this derivation, the second part of the double negation, the neg-operator *nie,* remains in its canonical place, since there is no reason, in terms of checking features, for *nie* to move. The negative clitic *en-* and *nie* depend on each other. The one cannot appear without the other. Haegeman (1995) formulates this mutual dependence in terms of the following criterion:

(5) Neg-criterion
a. A NEG-operator must be in a Spec-Head configuration with a X^0 [Neg].
b. A X^0 [Neg] must be in a Spec-Head configuration with a NEG-operator.

It is Haegeman's claim that in all languages negation works in a way similar to the one spelled out here. For languages that don't have an overt double negation either the neg-operator or the negative clitic is replaced by an invisible zero variant. In languages like Dutch and English the negative clitic is replaced by a zero variant. In other languages (Haegeman mentions Turkish and Berber) the negation in the head is lexical, whereas the neg-operator consists of a zero variant. It will be shown in this section that Afrikaans is exceptional in its negation. It does have double negation, but the two parts of the negation don't fill Spec Neg and the head of Neg.

For the MP-analysis of negation in Dutch I will follow Klooster (1993). Klooster follows the Neg-criterion, but places NegP between AgrOP and VP in the grammatical tree. Consider the negative counterpart of the Dutch sentence (2)a:

(6) Jan breekt zijn been niet. (Dutch)
'Jan doesn't break his leg.'

For the moment I will assume that the derivation of (6) is similar to the one in (2)a, with the exception that (6) has an extra category: NegP. In Figure 5 below, the derivation of sentence (6) is given:

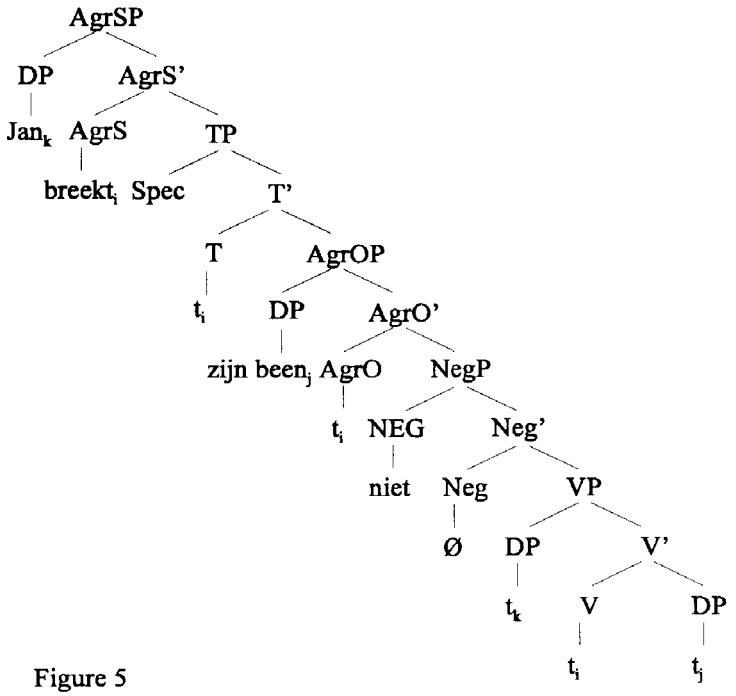


Figure 5

In Figure 5 the head of Neg is filled by the zero operator Ø. Following the Neg-criterion, Spec Neg has to be filled by a neg-operator. In Figure 5 *niet* functions as neg-operator.

For Afrikaans the analysis of negation is much less straightforward. In this section I will spell out the approach given by Oosthuizen (1997), who follows Haegeman's (1995) Neg-criterion, which is

given above. Like West Flemish, Afrikaans has double negation. The neg-operator *nie* (henceforth referred to as nie_1) and negative words like *geen* (no), *niemand* (nobody) and *niks* (nothing) coincide with a second *nie* (henceforth nie_2), which is usually found at the end of a sentence. Adversative words like *onmoontlik* (impossible), *skaars* (hardly) and *weinig* (little) may also be accompanied by nie_2, though this seems to be a colloquial use. In order to find out how this negation can be dealt with in the MP, consider the negative Afrikaans sentence below:

(7) Sy maak nooit die gereg nie_2. (Oosthuizen 1997:19)
She prepares never the dish neg.
'She never prepares the dish.'

Oosthuizen (1997) points out that nie_2 must be a functional item, since it can't be modified by any adverb:

(8) a. Sy maak nooit die gereg (*bykans) nie_2.
She prepares never the dish almost neg.
b. Sy maak bykans nooit die gereg nie_2.
She prepares almost never the dish neg.
'She hardly ever prepares that dish.'

If nie_2 is a functional item, it is a good candidate for the head of NegP. If we make this assumption, however, this results in the tree diagram in Figure 6[1]:

[1] My derivation of the sentence in Figure 6 differs somewhat from Oosthuizen's (1997) derivation. Oosthuizen (1997) places the NegP between TP and AgrOP. This allows the object *nooit* to raise from an adjunct of VP to NEG, where it satisfies the neg-criterion. I have chosen to place NegP between AgrOP and VP. One reason I chose this option is because this makes a straightforward analysis of a sentence like (i) possible:

(i) Jan breek sy been nie_1.

This sentence has a single negation. The neg-operator nie_1 fills Spec Neg. In the head of Neg a zero variant must be operative. This analysis is exactly the same as the analysis of sentence (6) in Figure 5. Another reason for assuming that position of NegP is between AgrOP and VP is that we want similar analyses for Dutch and Afrikaans. A third reason is the it solves the following problem:

(ii) a. dat sy die gereg nooit maak nie_2. (Oosthuizen 1997:10)
b. dat sy nooit die gereg maak nie_2.

For Oosthuizen (1997) this sentence is problematic. In his analysis *nooit* has to appear before the object *die gereg*.

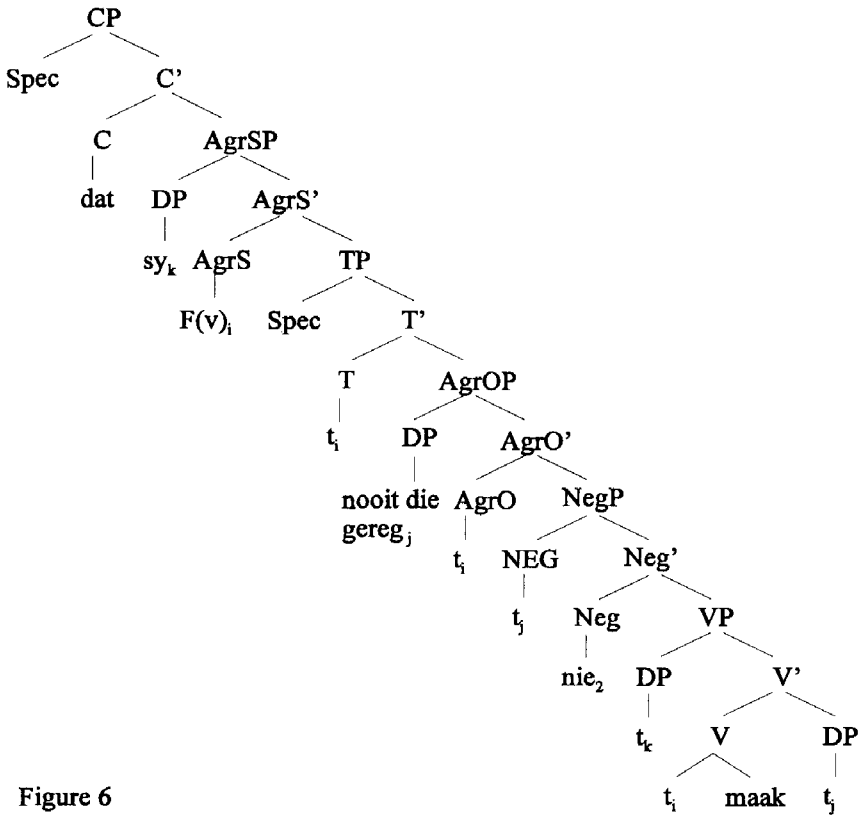


Figure 6

The problem with the analysis in Figure 6 is that *nie*$_2$ ends up left of *maak*. If we want the diagram in Figure 6 to give the surface structure of sentence (7), an additional movement is required. However, *nie*$_2$ cannot be lowered to the end of the sentence, since such a movement (leaving an ungoverned trace) is not available in the MP. Another possibility would be to raise the auxiliary *maak* to a higher position. This, however, raises two objections. Firstly there is no landing site for *maak* at the required spot (i.e. somewhere between *gereg* and *nie*$_2$) and secondly, even if there were such a site, there wouldn't be a reason for *maak* to move, since all its features are checked anyway.

In Oosthuizen's analysis of (ii)b nooit will remain in NEG (before the object) because there is no reason to move. For sentence (ii)a I will assume that *nooit* is base-generated in NEG. In that case *nooit* doesn't move, but remains in NEG. The analysis of the verb second variant of sentence (ii)b is given in Figure 7a and 7b. In (ii)b *nooit* is base-generated in the complementizer of VP together with the object. The DP that consists of the object and the negation will move to NEG first (in order to satisfy the neg-criterion) and then to Spec AgrOP (in order to satisfy the agreement features of the object). Although this approach works out quite well, there is one disadvantage. The fact that nooit is a VP-modifier and not a DP-modifier is ignored. Nevertheless I will use this approach in this chapter.

The solution Oosthuizen (1997) gives for this problem requires yet another functional category, namely PolP (Polarity Phrase). PolP carries information about the polarity of a sentence, i.e. whether it is positive or negative. If a sentence is negative the functional category PolP becomes active. Consider the diagram of sentence (7) in Figure 7 below. Sentence (7) is negative. For this reason AgrSP in the tree diagram in Figure 7a merges with PolP. The functional negation *nie*$_2$ is base-generated in the head of PolP.

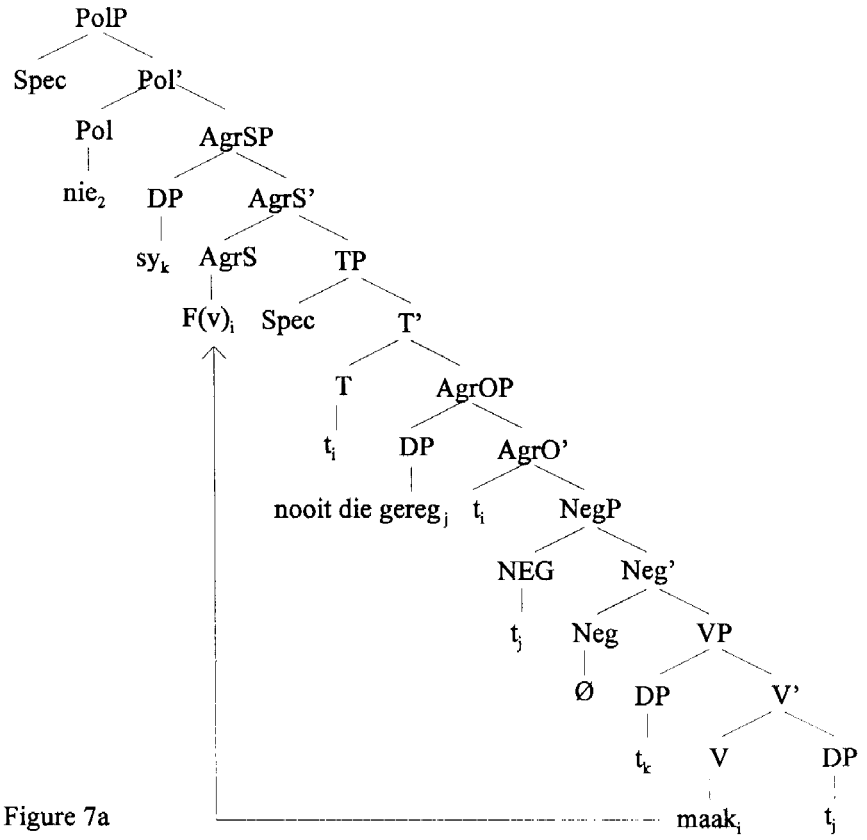


Figure 7a

The derivation in Figure 7a is almost the same as the derivation in Figure 2: the features F(v) of the verb raise from V to Neg, from Neg to AgrO, from AgrO to T and finally from T to AgrS. Recall that in Figure 2 F(v) was left stranded at this stage. It couldn't stay in the head AgrSP, since AgrS is a functional category and thus not a legitimate host for Φ-features. F(v) couldn't raise higher, since there was no higher head available, so it had to resort to attracting the verb. Similar things happen in Figure 7a. F(v) ends up in the head of AgrSP. In Figure 7a, however, there is a higher category

to raise to. Furthermore this category contains the lexical categorical features that are necessary to license the Φ-features in the form of *nie*$_2$. However, the features of the verb are of the type V, whereas *nie*$_2$ has an N-feature. The result of this is that the verb in Figure 7a has to move to Agr anyway. One feature of F(v) remains unsatisfied, though. It is assumed in Figure 7a that the feature bundle F(v) also contains a polarity feature. This feature hasn't been checked in the derivation at the stage shown in Figure 7a. Percolation makes the polarity feature available for the entire AgrSP. In order to check the Pol-feature the AgrSP raises in its entirety up to Spec Pol. In Spec Pol the Pol-feature is checked and the sentence takes its final form with the functional negation *nie*$_2$ in sentence-final position. This final state of this derivation is given in Figure 7b:

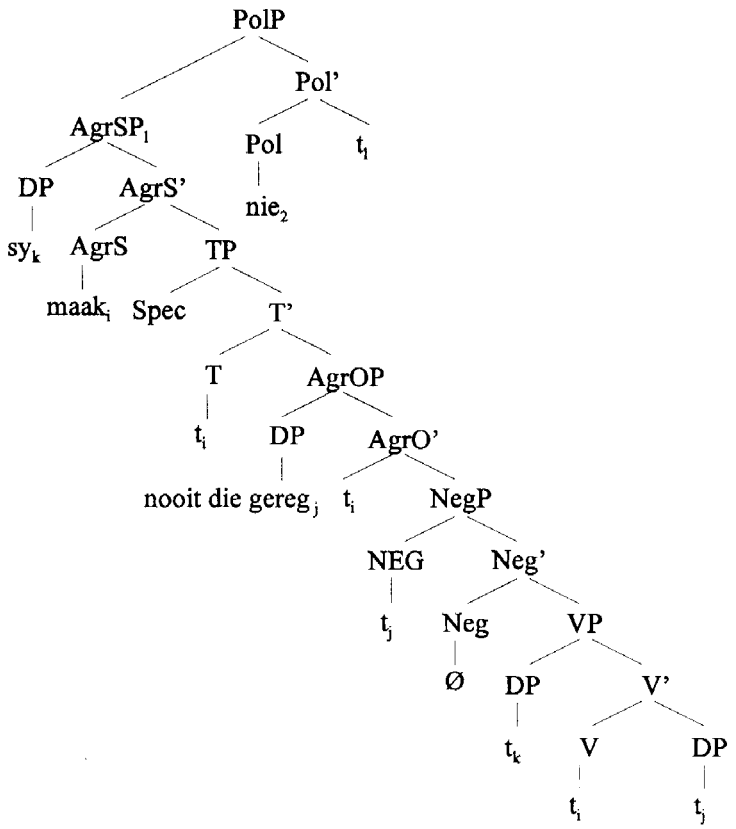


Figure 7b

3.3 The Grammatical Structure

3.3.1 Scalar Endpoints in MP

In Chapter 2 it appeared from the data that scalar endpoints are, almost without exception, triggered by anti-additives. In this section I want to investigate how this outcome can be accounted for in terms of the MP. Let us once more look at some of the data:

(9) a. De mensen hebben **geen** *rooie cent* (anti-additive) (De Gelderlander)
'The people don't have a cent'
b. **Niemand** heeft een *rooie cent* (anti-additive)
'Nobody has a cent'
c. ***Niet iedereen** heeft een *rooie cent* (antimultiplicative)
'Not everybody has a cent'
d. ***Hoogstens drie mensen** hebben een *rooie cent* (monotone downward)
'At most three persons have a cent'

The sentences (9)a and b are grammatical. In (9)a the anti-additive trigger *geen* is found in object position. In (9)b the anti-additive *niemand* is situated in subject position. Apparently the place in the sentence doesn't influence the grammaticality. However, if an antimultiplicative trigger is used (as in sentence (9)c) or if a monotone-decreasing trigger is used (as in sentence (9)d) the result is not well-formed. For sentences (9)a and b the following diagram can be drawn:

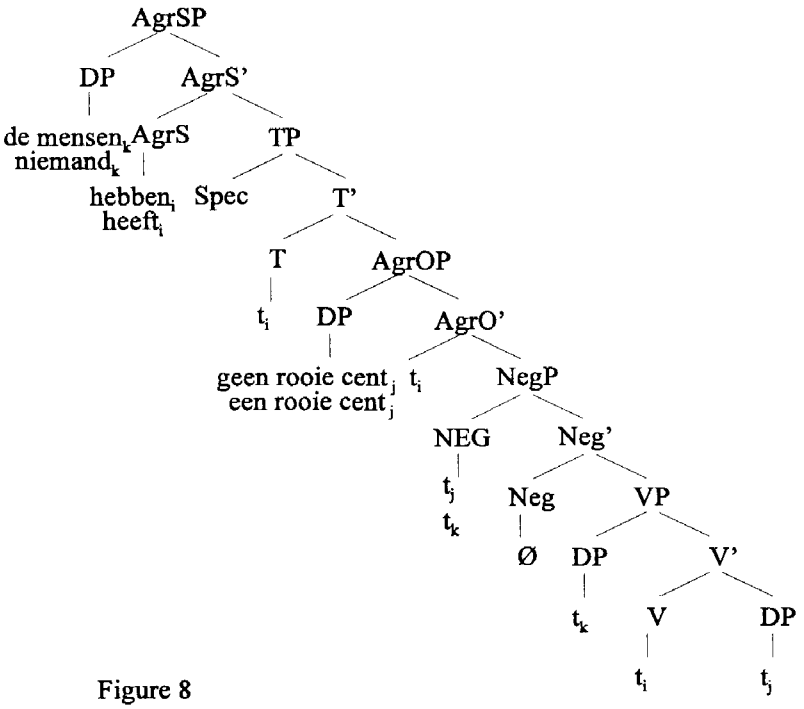


Figure 8

The sentences in (9)c and d are ungrammatical because the NPI in these sentences is not triggered by an anti-additive. The sentence in (9)a and b are fine, thanks to the anti-additives *geen* and *niemand*. In the framework of the MP, it is the checking system that is operative in the Computational System. If we want to explain the polarity in the sentences in (9), some kind of checking has to be created to rule out (9)c and d but allow (9)a and b. This feature is not hard to find. From the data in Chapter 2, is clear that scalar endpoints need anti-additive environments. Let us assume that the scalar endpoints that are polarity-sensitive bear an N-feature "anti-additive". This feature doesn't mean that these items themselves are anti-additive but rather that they need to be checked by an anti-additive N-feature of some head.

The question that surfaces at this point is: "What heads can bear the anti-additive N-feature?". Oosthuizen (1997) had a similar problem in his approach to the double negative in Afrikaans. After he had postulated the functional phrase PolP, which contained the strong polarity feature, he needed another phrase so that PolP's pol-feature could be checked. He decided that it was the verb that carried this feature:

(10) Werkwoorde word geselekteer met 'n F-kenmerk [pol], wat 'n bepaalde waarde het in sinne met 'n "negatiewe polariteit" (bv. sinne met ontkenningswoorde soos niemand, niks, nie, ens.); die lisensiëring van 'n V hou o.m. in dat sy [pol]-kenmerk gekontroleer word teen die ooreenstemmende sterk kenmerk van die funksionele kategorie Pol, waarmee bedoel word dat die N-kenmerk van 'n waarde voorsien word. (Oosthuizen 1997:18)
Verbs are selected with an F-feature [pol], which has a certain value in sentences that have a "negative polarity" (e.g. sentences that contain a negation word like nobody, nothing, not etc.); the licensing of a V means that its [pol]-feature will be checked against the similar strong feature of the functional category Pol, by which it is meant that the N-feature is provided with a value.

Oosthuizen places his pol-feature in the verb's bundle of features. This raises the question whether this is the right place for the anti-additive feature about which we are concerned here. What is the relation of the verb to the NPI on the one hand and the triggering expression on the other hand? The verb is an intermediary rather than the source of one of the checking features. Remember that we have given the NPI the anti-additive N-feature, which has to be checked. In Chapter 1 I demonstrated that NPIs need a trigger to license them. If this is the case than we should give the trigger the N-feature that can do the checking job.

If we now go back to the sentences in (9)a and b, we recognize *geen* and *niemand* as triggers. It is because they are negative that these items are triggers. For this reason NegP is the most appropriate place for the anti-additive feature to stem from. Let us assume that the anti-additive N-feature originates in the head of Neg. If we look at sentence (9)a and its derivation in Figure 8, we can see that checking can take place when the object *geen rooie cent* moves to Spec Neg. The object has to move to Spec Neg anyway to have its neg-feature checked. After the checking of the neg feature of *geen* and the anti-additive feature of the NPI *rooie cent* the object raises to Spec AgrOP to have its case-feature checked. So far there doesn't seem to be a problem. But what happens in the case of the grammatical sentence (9)b? In this sentence the NPI *rooie cent* is found in object position again. This time *rooie cent* is not accompanied by a negation, so it needn't move to Spec Neg for the sake of a neg-feature. However, we have assumed above that not only the neg-feature is found in the head of Neg, but also features that deal with negation. In sentences (9)a and b the polarity feature is anti-additive. This is an N-feature of the head of Neg and it has to check the NPI. For this reason *een rooie cent* in (9)b will move to Spec Neg. There its anti-additive feature can be checked against the

anti-additive feature of Spec Neg. A checking system like this prevents an NPI from appearing in positive sentences or in sentences with the wrong logical properties (like, for example, a monotone downward environment for scalar endpoints). But there is one drawback to the approach above, which can already be pointed out: the Spec NegP in sentence (9)b is visited twice, by two different phrases. This is highly unusual in the MP. This is one reason to suggest that there is an independent functional phrase which contains information about polarity. A candidate for this functional phrase would be MDP (a Monotone Downward Phrase) which could be situated between NegP and VP.

Two other sentences which I found in my scalar endpoint data are worth looking at. These are sentences in which an NPI is triggered by something other than a negation:

(11) **Kan** daar in sulke politieke onsin selfs net 'n *greintjie* waarheid wees? (Die Burger 14-3-90)
'Is it possible that there is perhaps a grain of truth in such political nonsense?'

(12) Maar **zolang** er ook maar een *greintje* hoop was dat het betaalde voetbal er zou terugkeren, hebben wij geen poging gedaan de baan er te situeren. (De Gelderlander)
'But as long as there was even a grain of hope for professional soccer to make a comeback, we didn't make any attempt to plan the course there.'

Before looking at the tree diagrams of sentences (11) and (12) we have to clarify one issue: both sentences (11) and (12) have an exceptional subject, or rather, there are two phrases that can be identified as subjects. In sentence (11) the expletive *daar* is found in the position that is usually filled by the subject. The actual subject is the phrase *'n greintjie waarheid*. In the Dutch sentence (12) the expletive *er* is found in subject position. The real subject in (12) is *een greintje hoop*. In this regard, Paardekooper (1971:56) distinguishes between *plaatsonderwerp* (place subject) and *getalsonderwerp* (number subject). Chomsky (1996) refers to the place subjects as expletive subjects[2]. The expletive is associated with the specifier in the canonical VP. That is why this phrase is referred to by Chomsky as "the associate". In Belletti (1988) the associate is called the i(nverted)-subject. I will use Chomsky's terminology below. In the sentences above, *daar* and *er* are expletive subjects, since

[2] Unlike Paardekooper (1971) Chomsky (1996) assigns agreement features (person and number) to the expletive subject. This entails that in Chomsky's approach the expletive subject also has the function of the number subject. The associate remains in canonical position. At LF, however, the expletive and its associate join together in Spec AgrSP. This move is necessary because there are no true expletives allowed in an LF representation. Simply deleting the expletive is impossible, since it carries the agreement features.

they occupy the place of the subject in the sentence (in the MP this is Spec AgrSP). *'n Greintjie waarheid* and *een greintje hoop* are associates. These subjects are called "number subjects" by Paardekooper because he assumes that the verb is inflected according to the number feature of the number subject. For the sentences (11) and (12) it can be assumed that the associates remain in their canonical position under VP. One might question, though, if this is completely right[3]. Assuming a canonical position for the associate we can draw that following tree diagram for sentence (11):

[3] Note in the first place that associates can only be an indefinite DP rather than a definite DP:

(i) Er kuste iemand/een idioot/een stelletje idioten/*Jan/*de slager Marie.
There kissed someone/an idiot/a bunch of idiots/Jan/the butcher Marie.
'Someone/some idiot/some bunch of idiots/Jan/the butcher kissed Marie.'

For a discussion of this phenomenon see Belletti (1988).

Secondly one might wonder where in the tree diagram the associate fits in. In order to find an answer to this question, consider the matrix clause in (ii) and the subordinate clause in (iii) below:

(ii) Er kuste een idioot Marie. (Dutch)
[$\text{There}_{\text{expl subj}}$] kissed [an $\text{idiot}_{\text{associate}}$] [$\text{Marie}_{\text{obj}}$]
'Some idiot kissed Marie.'

(iii) ...dat er een idioot Marie kuste. (Dutch)
...that [$\text{there}_{\text{expl subj}}$] [an $\text{idiot}_{\text{associate}}$] [$\text{Marie}_{\text{obj}}$] kissed.
'...that some idiot kissed Marie.'

If we assume that the object "Marie" in both sentences raises to Spec AgrOP in order to check case, then the associate in (ii) is situated between the verb (which must be in the head of AgrS) and the object and in sentence (iii) between the expletive subject (which is presumably in Spec AgrSP) and the object (in Spec AgrOP). Looking at these data, it is most likely that the expletive subject in (ii) is situated in Spec CP. The verb has moved (why?) to the head of C and the associate *een idioot* is found in its normal Spec AgrSP position. If we look at (iii) however, we can see that the expletive subject cannot be in Spec CP, since that place is filled by the complementizer. In (iii) it is more likely that the expletive subject *er* and the associate *een idioot* share the Spec AgrSP. An alternative solution worth exploring is placing the expletive subject in Spec AgrSP, where it can receive case. The associate has to be placed lower than the head of AgrS (because this place is occupied by the verb in (ii)), but higher than Spec AgrOP, the place of the object *Marie*. Given these facts there is only one candidate for the associate, which is Spec TP. If the associate is raised to Spec TP, there must be a reason for this. We could give a reason if we assumed that the number of the finite verb has to be checked at TP level, instead of AgrSP level. In that case the associate would be moved to Spec TP as soon as TP merges with AgrOP. At a later stage the expletive subject *er* can be situated in Spec AgrSP to have its Case feature checked against the verb.

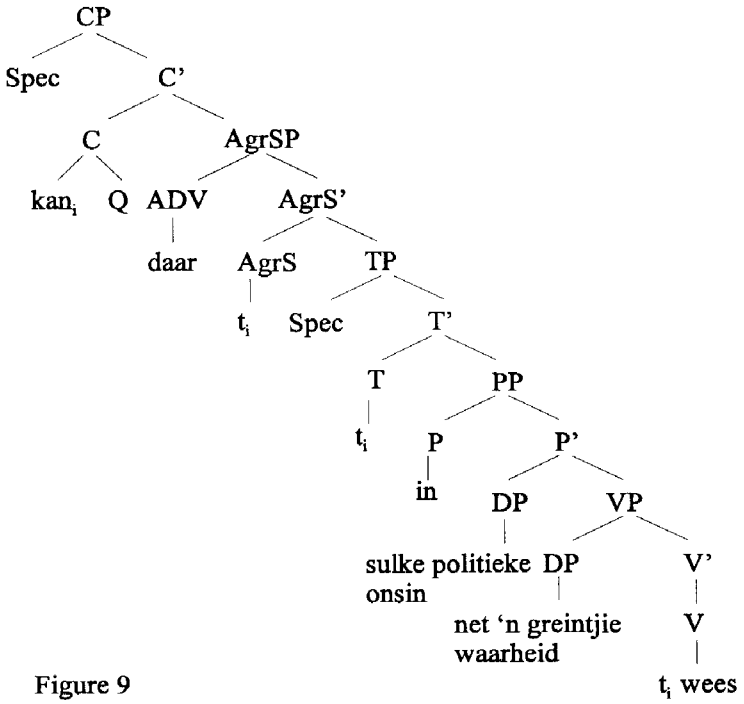


Figure 9

A sentence like (11) is a suitable environment for the NPI *'n greintjie* because it is a question. Let us assume (following Radford 1997b:109) that the head of C has a question feature Q. The auxiliary has an identical V-feature Q, which has to be checked against the question feature in C. The associate contains the NPI *'n greintjie*. Above, we have assumed that scalar endpoint NPIs have an anti-additive feature that needs checking. One good candidate for checking the NPI's anti-additive feature would be an N-feature of the head of C. One possibility would be to assume the anti-additive feature of *'n greintjie* to be weak, which would mean that it would move covertly to Spec CP after Spell Out. However, in the sentences that involved NegP we assumed that the anti-additive feature was strong, and that the NPI moved overtly to Spec NegP to have its anti-additive feature checked. This would be a second reason to postulate an MDP to which the NPI can move overtly. In Figure 10 this MDP has to be situated between the PP and the VP.

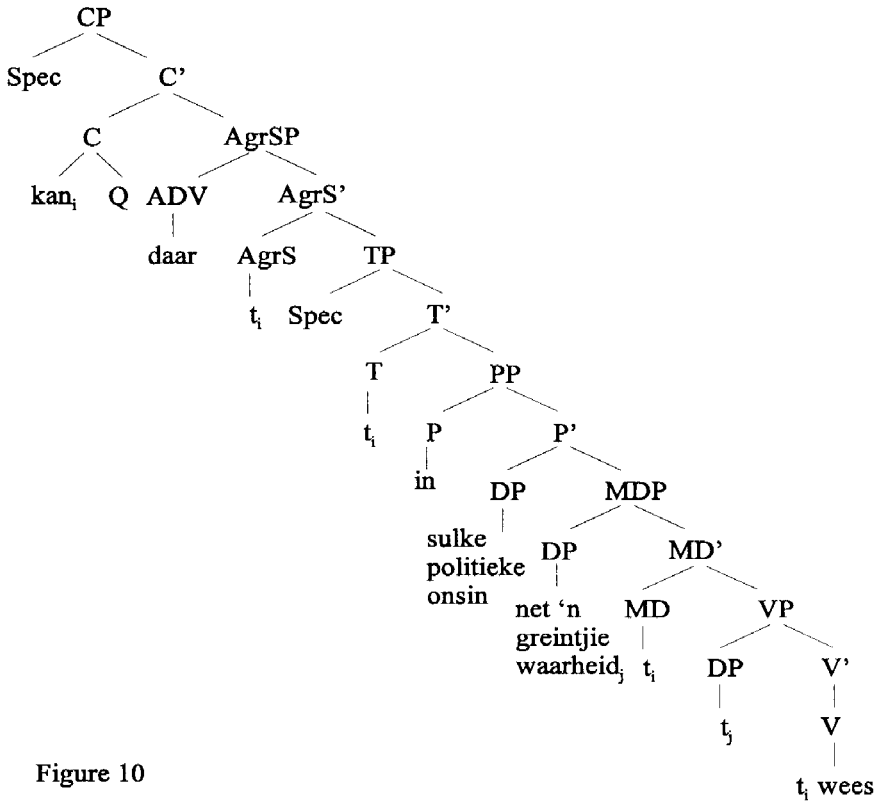


Figure 10

For the auxiliary *kan* we have to assume an additional anti-additive feature, next to its Q-feature. Before being raised to the head of C, *kan* has to make a stop in the head of MD, where its anti-additive feature is checked.

Thus it has been shown that it is likely that we will need a monotone downward phrase if we want to account for polarity in the Minimalist Program. In the data set for the scalar endpoints, however, there is still the problematic sentence (12) to be solved. Sentence (12) is repeated below:

(13) Maar **zolang** er ook maar een *greintje* hoop was dat het betaalde voetbal er zou terugkeren, hebben wij geen poging gedaan de baan er te situeren. (De Gelderlander)
'But as long as there was even a grain of hope for professional soccer to make a comeback, we didn't make any attempt to plan the course there.'

In this sentence the conditional *zolang* ('as long as') triggers the NPI. The sentence has the following tree diagram:

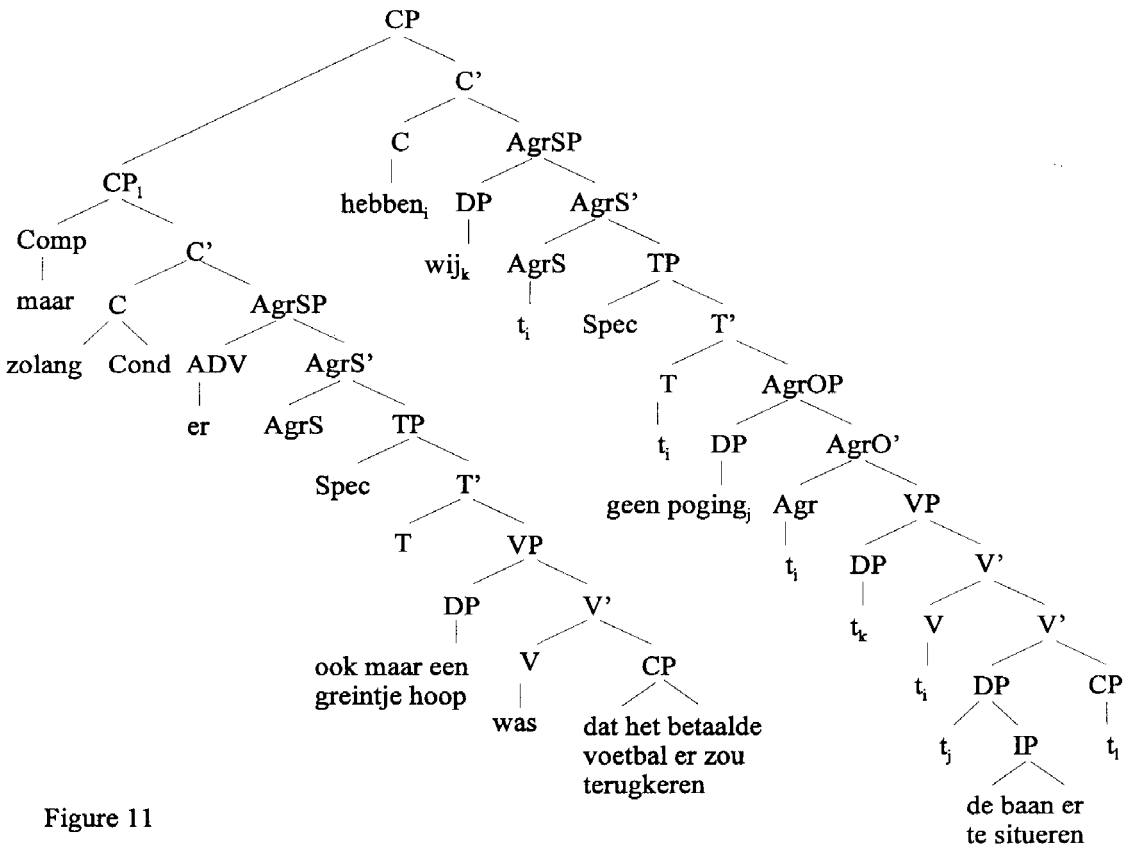


Figure 11

For us, the important part of the tree in Figure 11 is the CP introduced by the complementizer *maar*. In this tree the anti-additive feature of the NPI *een greintje* has to be checked against the N-feature of a head. If we assume, as we have done before, that there is an MDP located between the VP and the TP, than the DP *ook maar een greintje hoop* can be raised to Spec MDP. There its anti-additive feature can be checked. However, in the section above we assumed that monotone downward features in the head of the MDP have to be checked as well. In Figure 11 the conditional *zolang* is base-generated in the head of C, so that there is no way for the conditional to pass through the head of the MDP to check the monotone downward V-feature. This is a piece of evidence against the existence of the MDP.

In the above we have primarily had the choice between dealing with the NPI and its trigger either by assigning polarity features to NegP or by establishing a separate MDP, which can check polarity features. In the next section we will look at understatements and we will look for more evidence

whether one of the two above-mentioned approaches is applicable or if we have to look for an alternative solution.

3.3.2 Understatements

The understatements and the instances of litotes (in this chapter I will no longer distinguish between the two, but simply refer to both as understatements) of Chapter 2 were not consistent in their polarity strength. We can state that the attributive adjective can be triggered by either an anti-additive or an antimorphic. Monotone downward triggers and anti-multiplicative triggers were very scarce in the data of the attributive adjectives. Predicative adjectives can be triggered by anti-multiplicatives and antimorphics. There were some exceptional cases pointed out in the data of the predicative adjectives, which I will also pay attention to in this chapter. Finally, some understatements (i.e. *noemenswaardig* and *al te/alte*) were used as adverbs as well. As adverbs, they were mostly triggered by antimorphics, though there were some instances of anti-additive triggering as well.

The attributively used understatements don't differ too much from scalar endpoints grammatically. Consider a prototypical sentence like the one below:

(14) Volgens dr. Craven is dit [[**geen** *onoorkomelike* probleem$_{i\,AgrOP}$] t$_{i\,NegP}$] nie. (Die Burger 1-10-88)
'According to Dr. Craven this is not an insurmountable problem.'

In sentence (14) the object *geen onoorkomelike probleem* moves from it canonical position under VP to Spec NegP. In Spec NegP the neg features of *geen* can be checked against those of the head of Neg. At the same time the polarity features of *onoorkomelike* can be checked as well. After this checking, the phrase has to be raised to Spec AgrOP to have its Case features checked. The derivation of sentence (14) is very similar to the derivations shown for the scalar endpoints: a DP (either subject or object) moves from canonical position via Spec Neg to Spec AgrP. It is possible for an understatement to appear in a PP as well. Consider for example sentence (15):

(15) Dit leidde **niet** [tot *noemenswaardige* files$_{PP}$] (De Gelderlander 15-2-1996)
'This didn't result in significant traffic jams.'

Sentence (15) was also discussed in Chapter 2 (under (40)), as one of the exceptional sentences in which the attributive adjective was triggered by an antimorphic. The reason I gave for this antimorphic triggering is that the PP includes the NPI. For sentence (15) I suggest that the PP is generated between the NegP and the PP. The antimorphic *niet* is base-generated in Spec Neg. The PP contains the NPI *noemenswaardig*, which means that the PP has polarity features that have to be checked. For this reason the PP will move to Spec NegP, where it adjoins to the negation *niet*.

(16) De gehele integratie is [[[**zonder** *noemenswaardige* spanningen$_{PP}$]$_{NegP}$]verlopen] (De Gelderlander)
'The entire integration process has taken place without significant problems.'

In sentence (16) again there is a PP situated between the NegP and the VP. This time the Spec NegP is empty. The PP, however, contains the negative preposition *zonder* ('without'). This is one reason why the PP has to move to Spec NegP. A second reason is that the PP contains the NPI *noemenswaardig*, which needs checking of its polarity features.

Something else that deserves attention here is the difference between sentences (44) and (45) in Chapter 2, repeated below as (17) and (18):

(17) Zijn koffieverslaving was **geen** [*onoverkomelijk* probleem $_{NP}$] (Dutch)
'His addiction to coffee was not an insurmountable problem.'
(18) Haar oude vader had een **niet** [*onaanzienlijke* $_{AP}$] bankrekening. (Dutch)
'Her old father had a not inconsiderable bank account.'

In Chapter 2 it was shown that it depends on the attributive adjective whether it is negated by the anti-additive *geen* (e.g. sentence (17)) or by the antimorphic *niet* (e.g. sentence (18)). When we analyse these sentences in Minimalist terms, we will see, however, that they don't differ too much. The figures below show the (slightly simplified) VPs of (17) and (18) before they enter the CS:

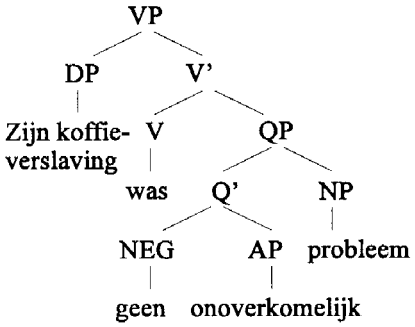


Figure 12a

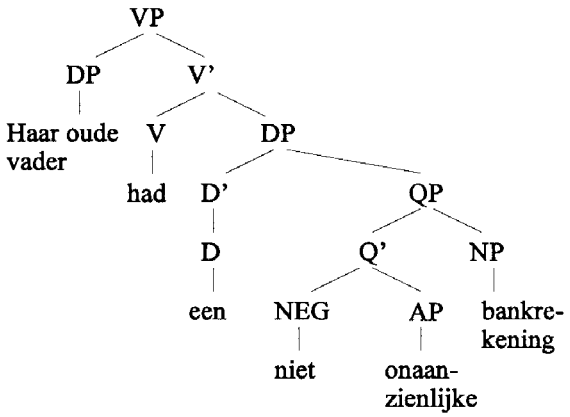


Figure 12b

In Figure 12a the object containing the attributive adjective is generated under a QP. In Figure 12b the object containing the attributive adjective is generated under a DP. This, however, is only a superficial difference, due to the different negations (i.e. *geen* vs. *niet*). In fact the derivations of the two sentences proceed along the same lines: in both sentences the object, the negation and the NPI are found in the same phrase. This means that the entire phrases, the QPs, are moved to Spec NegP, where both their negative and polarity features are checked. After this checking the QPs in Figure 12a and 12b have to move further to Spec AgrOP to have their Case features checked.

Predicative adjectives are generated in AP. This AP must be situated between VP and, in negative sentences, NegP. If the AP contains an NPI the polarity features have to be checked. For this reason the adjective has to move up to Spec Neg. Consider sentence (19):

(19) Het was **niet** *pluis* in de loods. (De Gelderlander)
'It was not okay in the shed.'

In a tree diagram this sentence looks like Figure 13 below:

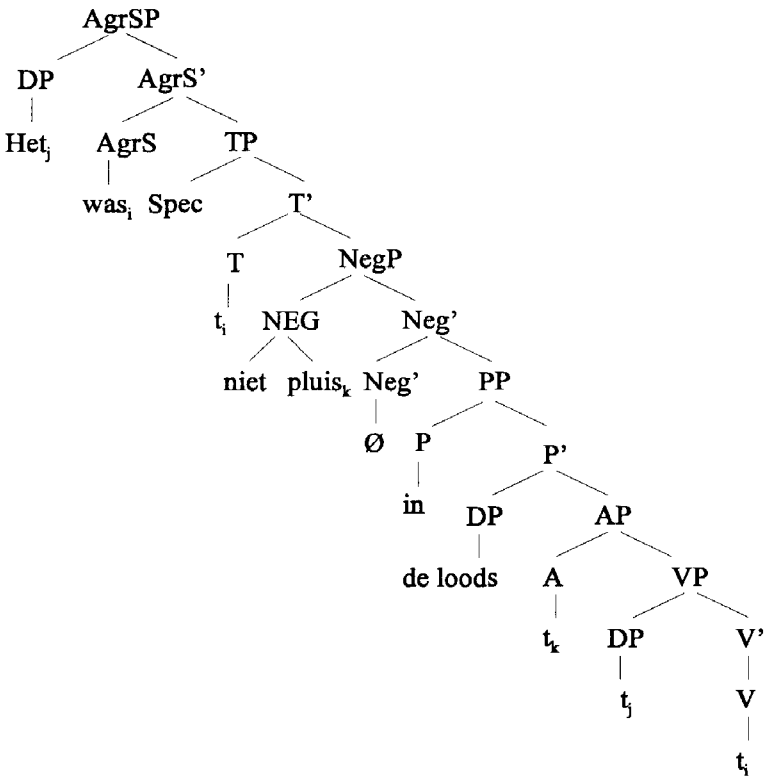


Figure 13

In Chapter 2 we came across the sentences in (46) in which adjectives were triggered by anti-additives, although they were used predicatively. I repeat these exceptional cases below under (20):

(20) a. Hoewel het niet altijd even makkelijk is, heb ik het **nooit** *onoverkomelijk* gevonden om zelf al die archiefstukken te bewaren. (De Limburger 30-8-1995)
'Although is not always that easy, I have never found it an insurmountable problem to keep all those archive documents myself.'
b. **Geen probleem** is hier *onoorkomelik.* (Die Burger 29-3-1989)
'No problem is insurmountable here.'
c. Hulle sê **geen probleem** is *onoorkomelik* **nie**, en ek glo hulle goed. (Die Burger 21-4-1989)
'They say no problem is insurmountable and I truly believe them.'

I think that we are dealing with two different problems here. If we look at the class of anti-additive triggers, then we can conclude that many of them have nominal features. By this I mean that many of them can be used instead of an NP (e.g. "nobody", "nothing", "no NP"). Other anti-additives are interchangeable with adverbial phrases (e.g. "never" with "at the moment") or prepositional phrases (e.g. "nowhere" with "at Frank's"). In (20)a the adjective is modified by the adverbial negative *nooit*

('never'). It is because of its adverbial character that *nooit* is allowed in this position. It is impossible for nominal or prepositional anti-additives to appear in one phrase together with an adjective. For the nominal anti-additives there are other possibilities. In (20)b and c the anti-additive NP *geen probleem* is found in subject position. From this position it triggers the predicative adjective in exactly the same way as we have seen for scalar endpoints and attributive adjectives. From this we can conclude that it is indeed possible for anti-additives to trigger predicatives. The reason why it doesn't happen very often is that predicatives are more naturally (or in a way that is less grammatically marked) negated by antimorphic adverbs. This means that the difference between the so-called strong predicative adjectives and medium attributive adjectives is not a semantic or logical problem at all. The difference is purely grammatical. Therefore there is no need to distinguish between strong and medium NPIs. They are all the same: in appropriate contexts (like those in (20) above) the predicative will be triggered by an anti-additive. Note, however, that it is still impossible for monotone downward expressions to trigger any adjectives in any construction whatever.

In the data sets for predicatively used understatements I found one instance of neg-raising. Neg-raising happens when a negation in the matrix clause has scope over elements in the subordinate clause. Only a small group of verbs (the so called neg-raising verbs or, in Klooster's 1993 terms, negative transport verbs) are able to neg-raise. Among these verbs we find "to think", "to dream" and "to find". An example of neg-raising is found in the Afrikaans sentence (21) below, where the negation nie_1 is able to trigger the NPI *onoorkomelike* in the subordinate clause. Note that in Afrikaans nie_2 is found sentence finally, although nie_1 is found in the matrix clause. From this we can conclude that the subordinate clause has to move together with the matrix clause from AgrSP to Spec PolP (see Figure 14). Consider sentence (21)a:

(21) Hy dink **nie**$_1$ [$_{CP}$ dit sal 'n *onoorkomelike* probleem wees] **nie**$_2$. (Die Burger 30-3-90)
'He doesn't think this will be an insurmountable problem.'

Klooster (1993) suggests an approach to sentences like this, in his discussion of the neg-raising sentence given in (22) below. What Klooster aims for in his approach is to account for the occurrence of the negative polarity verb *talen naar* ('to long for') in the subordinate clause. As we have seen in earlier derivations, verbs are found in head position, whereas other categories like APs

are found either in specifier position or in complement position. This requires another way of triggering, as we will see in section 3.3.3 on negative verbs. Consider Klooster's (1993) neg-rasing sentence below:

(22) Ik denk **niet** dat hij naar drank *taalt.* (Klooster 1993:128)
'I don't think that he is longing for some booze.'

The derivation of sentence (22) starts off with the VP of the matrix clause. According to Klooster the verb acquires a zero morpheme that is either negative or non-distinct if it merges with NegP. In the case of (22) it is negative. This negative zero-morpheme forces the verb to select a CP that carries a negative zero operator, as the reader can see in Figure 14 (which shows the derivation of sentence (21)). The reason why Spec CP must carry a negative operator NEG which is not phonologically overt is because the neg-criterion has to be satisfied. The NPI *talen* is licensed by covertly moving its Φ-feature bundle up all the way to the head of C, where it can check its polarity feature (or its [+neg], according to Klooster 1993) against the features of the head of C.

For sentence (21) this approach is problematic, since the NPI is found in Spec AgrOP. There is no checking connection (either overt or covert) between Spec AgrOP and CP. This means that it is impossible for the NPI *onoorkomelik* in sentence (21) to be licensed properly.

Recall the conditional sentence (13) and its tree diagram in Figure 11. In that diagram the conditional *zolang* was incapable of triggering the negative-polarity-sensitive scalar endpoint *greintje.* For exactly the same reason the negative CP in Figure 14 below cannot trigger *onoorkomelik*:

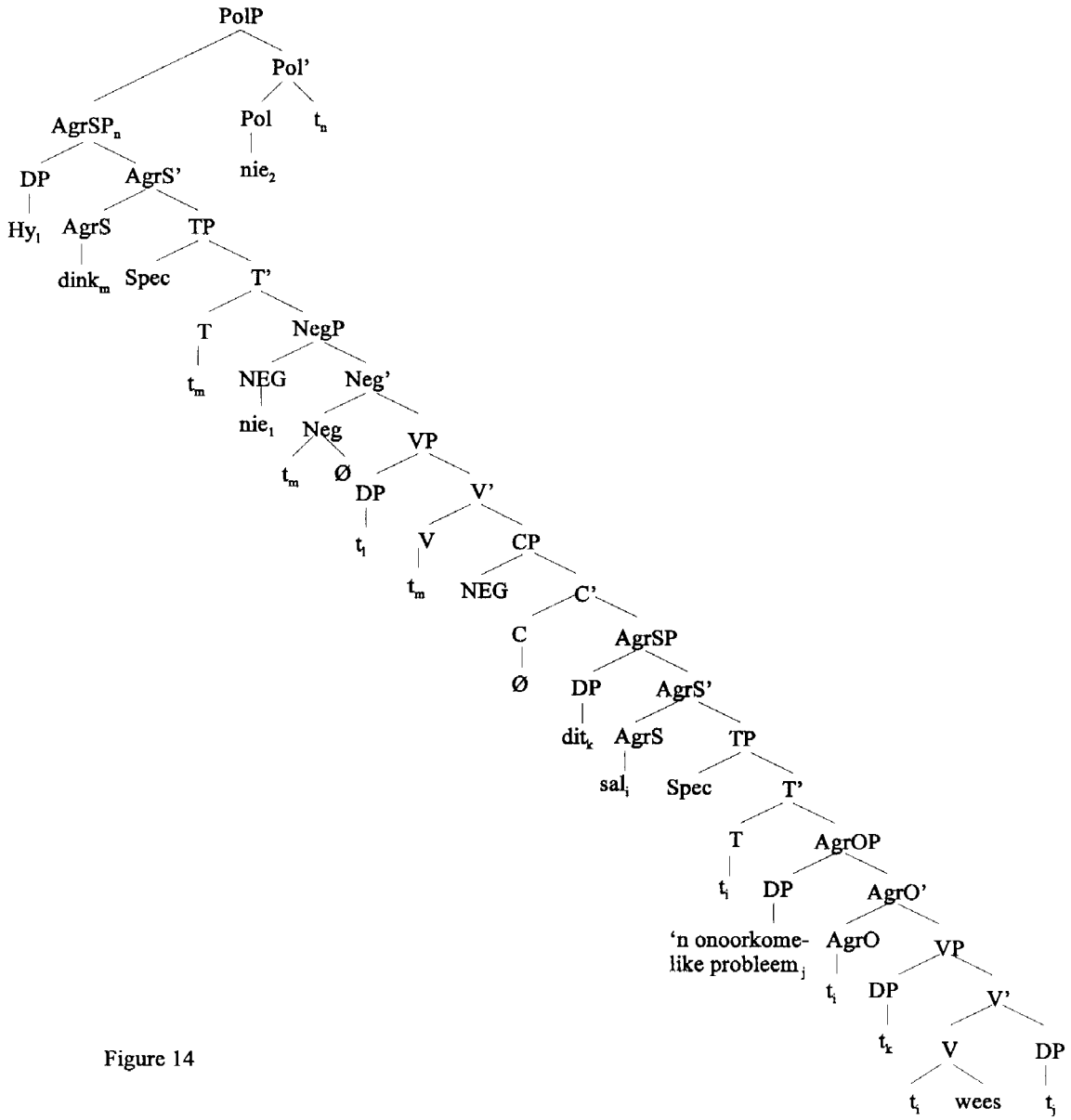


Figure 14

If the checking of the polarity features fails again in Figure 14 (after the failures shown in Figures 9, 10 and 11) the situation becomes alarming. This means that the issue probably can't be solved by assuming a checking system. It is interesting to note what Klooster (1993) has to say about sentences like (13) and (21):

(23) Kijkend naar Figuur 2 kunnen we verder vaststellen dat de neg-operator in de ingebedde zin van negatietransportconstructies hoog genoeg zit om negatief polaire subjecten te c-commanderen. Zinnen van het type (25b) (Ik vond niet dat er ook maar iemand weg mocht) kunnen zo dus verantwoord worden. (Klooster 1993:128)
Looking at Figure 2 [which is similar to Figure 14:PtH] *we can furthermore conclude that the neg-operator in embedded sentences of negation transport constructions* [=neg-raising construction:PtH] *is situated high enough to c-command negative polarity subjects. Sentences like (25b) (I didn't think that anyone was allowed to leave) can be licensed in this way.*

For Klooster (1993) the mere fact that triggers are in a c-commanding position is a sufficient requirement for NPIs other than verbs (e.g. scalar endpoints and understatements). Here Klooster makes the same mistake as his predecessors in the sixties and the seventies. In Chapter 1 (where I spelled out Klima's 1964 and Jackendoff's 1972 approaches) I discussed at length what the problems of the c-command[4] approach were. There were two main arguments against the c-command approach. Firstly Baker (1970) showed that a PPI can appear in the scope of a negation. In Chapter 1 I gave sentence (26) which contained the PPI "would rather" to illustrate this. Sentence (26) is repeated below:

(24) There isn't anyone in this camp who wouldn't rather be in Montpellier.

The way this problem is dealt with in Baker (1970) is as follows: the PPI is in the scope of the negation of the subordinate clause. Besides this, there is a negation in the matrix clause, which cancels the negation in the subordinate clause. A second problem for the c-command approach I discussed in Chapter 1 was given by Ladusaw (1979) and Zwarts (1981). Ladusaw and Zwarts showed that it was not just negation, but rather downward entailment (or monotone downwardness) that functioned as a trigger. In the quote in (23) above, Klooster (1993) completely ignores this outcome, although he must be fully aware of it, since both Ladusaw (1979) and Zwarts (1981) are referred to in his article. The c-command approach might be an interesting way of accounting for certain kinds of NPIs in the MP, but first the two problems mentioned above have to be taken in

[4] The definition of c-command is according to Radford (1997a:497):

(i) C-command: X c-commands Y if the mother of X dominates Y, and X and Y are disconnected (i.e. X ≠ Y, and neither dominates the other).

consideration. Later on in this section I will deal with these issues.

Finally we can turn to the understatements that are used as adverbs modifying verbs. An example of *noemenswaardig* used as an adverb is given below:

(25) Het drugsbeleid zal **niet** *noemenswaardig* veranderen. (De Gelderlander)
'The drugs policy will not change significantly.'

In this sentence the adverb *noemenswaardig* is generated under AP. The AP is situated between the NegP and the VP. If we still assume that there are polarity features to be checked, sentence (25) is similar to the case of *pluis*: in Figure 13 *noemenswaardig* can't remain in its canonical position since its polarity features need checking. For this reason *noemenswaardig* moves up to join *niet* in Spec NegP. In Spec NegP the N-features of Neg are checked against the polarity features of the NPI. For sentence (25) a checking approach to NPIs in not problematic. Let us see how other adverbs can be dealt with.

In Chapter 2 we encountered two sentences ((41)a and b) in which negative polarity-sensitive adverbs were triggered by anti-additives. Below, these sentences are repeated as (26):

(26) a. Sommige van die plekke is gebou **sonder** om die natuurlike omgewing *noemenswaardig* aan te tas. (Die Burger 27-9-1993)
'Some of the places were built without significantly affecting the natural environment.'
b. Ekonome meen dit is **onwaarskynlik** dat die reserwes binnekort *noemenswaardig* sal herstel. (Die Burger 8-9-1993)
'Economists believe it to be unlikely that the reserves will soon recover significantly.'

In Chapter 2 I said the following about the sentences:

> "What is important about the sentences in (41) [=(26)] is that the anti-additive triggers, different from antimorphic triggers [...], don't appear left-adjacent to the NPI. The triggers in (41) are found in the matrix clause, whereas the NPI *noemenswaardig* appears in the subordinate clause. Apparently this is a requirement: if the trigger of the adverb *noemenswaardig* is an anti-additive expression, then the trigger has to appear in a higher clause than the NPI."

Let us have a closer look at the structure of (26)a, given in (27) below:

(27) Sommige van die plekke is gebou [[sonder$_P$] [om die natuurlike omgewing *noemenswaardig* aan te tas$_{CP}$]

Sentence (26)a has a CP which contains a preposition in Spec CP. In the CP both the anti-additive trigger *sonder* ('without') and the NPI *noemenswaardig* are found. (26)a is exceptional, though, because the preposition is found after the participle *gebou*. We assume that *gebou* remains in V, its canonical position. This means that the CP in (26)a must occur after the VP. This wouldn't be a problem in normal circumstances. The CP in (26)a, however, contains the negative *sonder,* which needs its negative features to be checked and the NPI *noemenswaardig* which needs its polarity features to be checked. For this checking the PP has to raise to Spec NegP. However, this would result in an ungrammatical sentence:

(28) ?*Sommige van die plekke is [**sonder** [om die natuurlike omgewing *noemenswaardig* aan te tas$_{CP}$]$_{PP}$] gebou.

Note that normal PPs, that is PPs which contain a DP, can appear in the position of the PP in the ungrammatical sentence (28) above:

(29) a. Sommige van die plekke is [in die see$_{PP}$] gebou.
b. ?Sommige van die plekke is gebou [in die see$_{PP}$]

The sentence in (29)a is the unmarked sentence, whereas (28)b, the sentence that has a post-VP PP, is highly marked. In sentence (27) it is obvious that the CP is post-VP. The problem of (27) can be solved if we assume that the negative *sonder* doesn't have to raise to Spec NegP, but instead remains in Spec CP as a neg operator. In order to satisfy the neg-criterion the head of C has to have a negative head. I will assume that the zero operator Ø is found in the head of C. Support for this approach can be found in a neg-raising sentence like (22). In a neg-raising sentence the head of C is also filled by a zero operator, whereas the NEG in Spec CP is not phonologically overt. There is a problem with this approach, though. The problem is the same as the one we encountered in neg-raising sentences. The negation is checked properly and the neg-criterion is satisfied, but the polarity features of the NPI *noemenswaardig* cannot be checked in this way, since it cannot raise to the CP overtly. Covert raising is not very desirable, since in the above we have assumed that polarity

features were strong. So once more we have found a sentence that cannot be dealt with if a checking approach is used.

Sentence (26)b is not only interesting because it is triggered by an anti-additive, but because of its structure as well. I repeat the sentence here for the sake of convenience:

(26) b. Ekonome meen dit is **onwaarskynlik** dat die reserwes binnekort *noemenswaardig* sal herstel. (Die Burger 8-9-1993)
'Economists believe it to be unlikely that the reserves will soon recover significantly.'

In this sentence the trigger is the adversative adjective *onwaarskynlik* ('unlikely'). *Onwaarskynlik* is found in the matrix clause, whereas the NPI *noemenswaardig* is situated in the subordinate clause. Consider Figure 15 below:

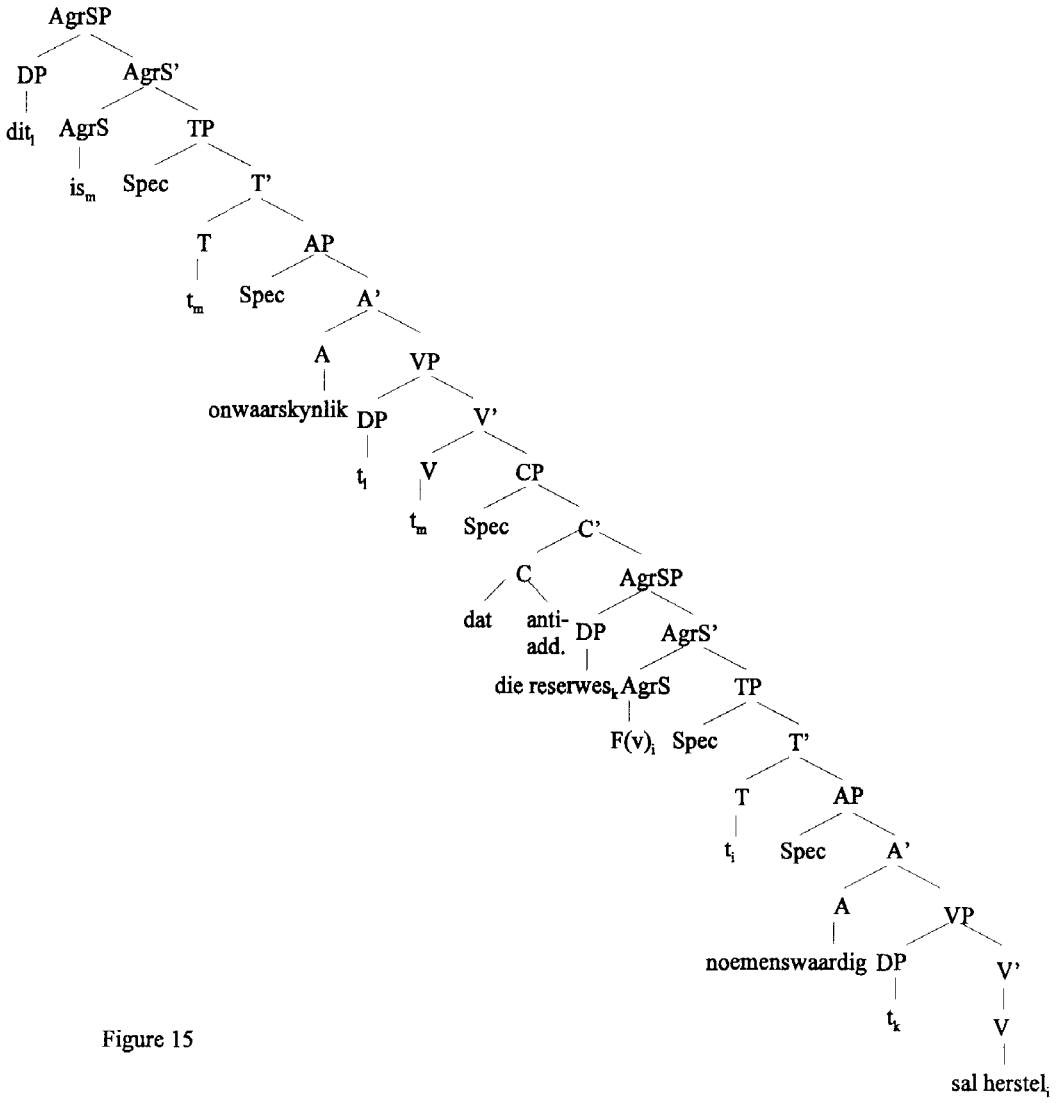


Figure 15

Let us approach sentence (26)b in a similar way as the neg-raising sentence in (21). In a neg-rasing sentence the verb acquires a zero morpheme that is either negative or non-distinct. In Figure 15 the VP merges with the AP. Since the AP contains the trigger *onwaarskynlik*, *onwaarskynlik* must have a polarity feature. By merging with the AP, the VP also acquires this feature. This polarity or (in terms of Klooster 1993) negative zero morpheme forces the verb to select a CP that carries an anti-additive zero operator, as the reader can see in Figure 15. In Figure 15 we are dealing with an anti-additive feature instead of the neg-feature in Figure 14. Since there is no negation in Figure 15 the neg-criterion doesn't apply and Spec CP doesn't have to carry a zero negative operator NEG. This

analysis of (26)b in Figure 15 is very similar to the analysis of (21) in Figure 14. There is one very important distinction I want to make and that is that in (21) the trigger is a negation (i.e. any antimorphic, antimultiplicative trigger or n-words like "nobody", "nowhere", "never" etc.). (26)b is triggered by a non-negative trigger (i.e. conditionals, adversatives, questions and the downward-entailing triggers). In (26)b the adversative adjective triggers the NPI *noemenswaardig*. Can the VP in the matrix clause in (26)b have the same selection properties as the VP in the matrix clause in (21)? Recall the way Klooster (1993) approached neg-raising. Klooster needed the CP to have negative features because he was dealing with a negative polarity verb. He assigned the feature [+ neg] to the verb and he wanted this feature to be checked. In Klooster (1993) the verb in the negative matrix clause selects a [+ neg] marked CP with checking facilities for the negative polarity verb. In sentence (25)b we are dealing with a negative polarity understatement. There is no way for the understatement to rise all the way up to the CP to have its polarity features checked. That's why Klooster (1993) suggests that in these cases c-command is a sufficient condition (see quote (23)). This entails that we don't need a complicated neg-raising in (25)b at all, since *onwaarskynlik*[5] is in a c-commanding position in the matrix clause anyway. However, *onwaarskynlik* is able to trigger a negative polarity verb such as *hoef* ('to need') as well:

[5] In terms of the MP *onwaarskynlik* is not a negation. Klooster (1993) defines negations (or as Klooster calls them negation elements) as follows:

(i) Als criterium voor negatie-element [...] zal ik hier het volgende hanteren: een expressie is een negatie-element (NE) als zij het optreden van een negatief polair element (NPE) kan 'fiatteren'. Hierbij hoeven we geen circulariteit te duchten, zolang we er van uitgaan dat *niet* per definitie een negatie-element is; het enige wat we doen is de elementen die zich ten aanzien van NPE's overeenkomstig *niet* gedragen, aanmerken als NE's. (Klooster 1993:120)
I will use the following as the criterion for negation elements: an expression is a negation element (NE) if it can trigger the appearance of an NPI. We don't have to fear circularity here, as long as we take niet *(not) as an NE by definition; all we do is consider elements that show a similar behaviour towards NPIs as* niet *(not) as NEs.*

I think this criterion fails for two reasons: 1. We do have to fear circularity: in the extreme example of *rozengeur en maneschijn* it is even impossible for *niet* (not) itself to trigger the NPI, so how on earth will we be able to decide what negation elements are? 2. Since not all NPIs are triggered by the same negation-elements the definition of a negation-element is clear-cut, but rather differs depending on the NPI that is triggered.

(30) Dit is **onwaarskynlik** dat Herman skool toe *hoef*.(Afrikaans)[6]
'It is unlikely that Herman has to go to school.'

If we want to adopt the checking system for negative polarity verbs, Klooster's (1993) approach to neg-raising is necessary. This issue will be dealt with in section 3.3.3 on negated verbs. What we have to be concerned about at this stage is how to find a proper approach to negative polarity understatements and scalar endpoints in terms of c-command.

What can we conclude from our discussion of NPIs in MP terms so far? I think that two important things became obvious at this stage. Firstly, there is no distinction between strong and medium NPIs. That is, strong NPIs only act in a "strong" way by default: there is no grammatical way for anti-additive expressions to trigger the so-called strong NPIs, because anti-additives are not generated in Spec Neg. The so-called strong NPIs require a negation in NegP. In some exceptional cases, however, (like sentences (26)a and b) the combination of anti-additives and strong NPIs works out fine. Secondly, I think we can conclude that a checking approach to medium and strong NPIs fails. At the beginning of this chapter I showed that licensing in the MP is mainly done by checking. I have tried to incorporate the NPIs into this checking system. For the antimorphic and antimultiplicative items and for the anti-additive n-words ("nobody", "nowhere", "never", "nothing" etc.) this was a real possibility. By assuming that the head of NegP not only carried neg features but polarity features as well, it was possible for the NPIs be raised to their surface position via the Spec NegP, where their polarity features were checked. Problems emerged when the triggers didn't come with a NegP (like the adversative adjectives and the adversative verbs) and when the triggers were found too high in the tree (like conditionals, questions and neg-raisers) for the NPI to pause in order to have its polarity features checked. One way to solve this problem is, of course, to assume weak polarity features. This is undesirable, though, because in the case of antimorphics and anti-multiplicative triggers we want to have strong features. To assume strong polarity features was necessary in the case of antimorphics and anti-additives expressions because these expressions are raised overtly.

[6] This sentence is not accepted by all speakers of Afrikaans.

Since the checking system fails for NPIs, we have to look for an alternative. Recall that it was suggested by Klooster (1993) that c-command was a sufficient requirement for certain NPIs. For negative polarity verbs, however, Klooster gives a different (checking) approach, which I will spell out in section 3.3.3. The problematic trees in the above sections are found in Figure 9, 11, 14 and 15. In all these trees it is impossible to establish a checking connection between the trigger and the NPI, but all the NPIs are c-commanded by their triggers. As we have seen in Chapter 1, we have to be careful about adopting c-command as the required relation between the trigger and the NPI. Two main problems have to be solved first. Firstly, there are sentences like the one Baker (1970) gives, which was quoted earlier in this section and is repeated below:

(24) There is**n't** anyone in this camp who would**n't** rather be in Montpellier.

In this sentence the accumulation of the two negations facilitates an appropriate context for the PPI "would rather". I refer to Chapter 1 for a lengthy discussion of this approach. Here I will assume that one negation c-commanded by another converts the negative context into a positive one, as far as PPIs are concerned. This rule doesn't seem to be applicable for NPIs, as is shown by the NPI "to lift a finger" in the following sentence:

(31) There is**n't** anyone in this camp who does**n't** lift a finger to help Andy.

Since we are only dealing with NPIs here, we can consider the problem of converting negation as beyond the scope of this thesis.

The second problem is that it is not only negations which can trigger NPIs. Ladusaw (1979) shows that all expressions with the monotone downward property are capable of triggering NPIs, and Zwarts (1981, 1986) and Van der Wouden (1994) showed that NPIs can be classified according to their "strength". So, in order to give a c-command approach to NPIs, we first have to get the classification of the NPIs straight. I think that we can distinguish between two main classes of NPIs so far. We have a group of weak NPIs that correspond with the weak NPIs from Chapter 2, namely the negated verbs. Then there is a second class, which I will call the strong NPIs. This is a big class which contains all the understatements (since we have seen that the strong NPIs from Chapter 2 were

only strong by default: there were few appropriate grammatical structures in which anti-additives could trigger the so called strong NPIs). Besides the understatements, the scalar endpoints fit into this class as well. Scalar endpoints are mostly triggered by anti-additives. The reason why they are seldom triggered by antimorphics is because the structure that is needed for an antimorphic to trigger a scalar endpoint is rare. It does occur, though. Van der Wouden (1994) gives the following sentence for the (American) English scalar endpoint "a red cent"

(32) John did**n't** give *a red cent* to charity. (Van der Wouden 1994:86)

The distinction between the weak NPIs and the strong NPIs which I have made above is based on the logical difference between the triggers of the weak NPIs on the one hand (all monotone downward elements are potential triggers) and strong NPIs on the other hand (only triggered by antimorphics, anti-additives and, if the semantics of the item allows it, antimultiplicatives). There is, however, a second very important reason to distinguish between weak NPIs and strong NPIs in MP terms: weak NPIs appear in head positions and strong NPIs either in specifier position or in complement position.

So there are two good reasons to divide the NPIs into a strong class and a weak class. Here we are concerned about the strong NPIs. The findings in this section allow us to formulate the following definition for strong NPIs:

(33) Definition: Strong NPIs have to be c-commanded by items that are either antimorphic, anti-additive or antimultiplicative.

It is not necessary to assign features to any items here, since there will be no checking going on. The mere fact that an appropriate trigger c-commands a strong NPI is sufficient.

3.3.3 Negated Verbs

In the discussion above it became obvious that the best way to deal with NPIs in the MP is to resort to the c-command rule. For negated verbs things are different. Verbs appear in heads, unlike the phrases we dealt with in the section 3.3.1 and 3.3.2. In Dutch and Afrikaans the verb moves from the lowest head (the head of VP) to the highest head (the head of AgrSP) or, in the case of subordinate clauses, the verb moves covertly as far s the head of CP. This property makes it a lot easier to develop a checking system for negative polarity verbs. In section 3.3.2 we have already seen how Klooster (1993) approached neg-raising sentences.

The main element of Klooster's (1993) approach is the polarity feature ([+neg], according to Klooster). In a neg-raising sentence a CP that contains this feature is selected by the VP of the main clause. The [+neg] feature in the head of C is checked by the [+neg] feature of the negative polarity verb. This [+neg] feature of the verb moves covertly to the head of C, leaving the phonetic verb in clause-final position. Klooster's approach shows many similarities to the checking approach for NPIs I have sketched in sections 3.3.1 and 3.3.2. The NPI carries a polarity feature which has to be checked against the same feature somewhere higher in the tree (usually against the polarity features of the head of NegP). In the approach in sections 3.3.1 and 3.3.2 the polarity features were N-features: the NPIs considered appeared in specifier position and they checked their features against the polarity features in a head.

As I have mentioned above, the case of negative polarity verbs is slightly different from the cases of other NPIs. The NPIs in the former sections (scalar endpoints and understatements) appeared without exception in specifier positions. Verbs are base-generated in heads and they only raise to other heads. The relation between heads is referred o as "selection" in Klooster (1993), following Chomsky (1986). The term "selection" can be explained as the checking of features. In the previous section we were forced to adjust the checking system with a c-command approach. Klooster (1993) also assumes a c-command (or, in his terms, a binding) approach for NPIs in specifier positions. For heads, however, he maintains the selection principle. As a result of this, Klooster ends up with two ways of licensing NPIs: binding for non-head NPIs and selection for head NPIs. Why doesn't

Klooster (1993) present one solution instead of having two approaches? For Klooster, the difference between selection and binding has to explain the difference between strong NPIs (or non-head NPIs that can't be triggered by monotone downward expressions) and weak NPIs (or head NPIs, triggered by any monotone downward expression). Klooster (1993:129) uses the following sentences to explain the difference between strong NPIs and weak NPIs:

(34) a. Toen **pas** kon hij *een hap door zijn keel krijgen.* [selectie]
Then only could he a bite through his throat get.
'Only then was he able to swallow a crumb.' [selection]
b. *Je zult hem **pas** *in weken* zien. [binding]
You will him only in weeks see.
'You will only see him in a few weeks time.' [binding]

In the above sentences, (34)a can be explained by selection. The negative polarity idiom *een hap door de keel kunnen krijgen* ('to be able to swallow a crumb') has a polarity feature that is checked against in the head of C[7]. But if we turn to (34)b we can see that the definition of c-command applies to the relation between the trigger *pas* and the NPI. About the binding of non-head NPIs, Klooster (1993:129) writes: *bij de andere negatief polaire elementen [= niet-hoofd NPE's:PtH] gaat [het] om een lokale relatie tussen NE en NPE* (in the case of the other negative polarity items [=non-head NPIs:PtH] the local relation between negative elements and NPIs is important). Klooster (1993) is vague about which local relations are important. Since Klooster rejects classification of triggers on a logical basis, he has to find some way of ruling out the monotone downward NPIs as triggers for the strong NPIs. He will be forced to give an appropriate binding rule. In his 1993 article, however, he remains silent about this issue.

In contrast to Klooster (1993) I do accept the logic-based classification of triggers. I think that the data in Chapter 2 have given sufficient evidence for such a classification. If we look at the results

[7] Note again that according to Klooster's (1993) definition (given in footnote 5) *pas* ('only') is a negation-element. This means that *pas* is subject to the neg-criterion. Note furthermore that if we adopt this option, contexts like questions and conditionals would be negative as well. We may question, though, if this is what we want; especially since it is avoidable by assuming that *pas* has a monotone downward property which can account for its triggering property, as I will show in this section.

of the discussion in this chapter so far, there are three important consequences we have to be aware of: (1) the strong NPIs can't be accounted for in terms of checking or selection. (2) Since the checking approach has failed, the c-command approach is the best candidate for an approach to strong NPIs. (3) We have evidence for a logical classification of NPI triggers. Since we have rejected the checking approach for strong NPIs, it is interesting to raise the question of whether we want to have a checking approach at all. By this I mean: do we want to have a separate checking approach for negated verbs? It would at least be very interesting to see if it is possible to account for verbs with a c-command approach as well.

Weak NPIs are triggered by a larger group of items than strong NPIs. For strong NPIs antimultiplicatives, anti-additives and antimorphics are valid triggers. For weak NPIs all items that have the property of downward entailment can function as triggers. In section 3.3.2 I defined strong NPIs as NPIs that have to be c-commanded by antimultiplicatives, anti-additives or antimorphics. For weak NPIs we can state a similar definition: weak NPIs are items which have to be c-commanded by monotone-downward triggers. First, however, we have to see if there are grounds for such a definition.

Let us first look at a prototypical matrix sentence containing a negative polarity verb. In sentence (35) below the verb *kon* is raised to the head of AgrS; the antimultiplicative *nie langer* is base-generated in Spec NegP.

(35) Hul kon dit **nie langer** *uithou* **nie**. (Die Burger 23-9-97)
'They couldn't stand it any longer.'

The negative polarity expression in (35) is *kon uithou* ('could stand'). In a binding approach to NPIs, we want the antimultiplicative *nie langer* to c-command *kan uithou*. In (35) the auxiliary *kon* (which is the past tense of *kan*) is raised to a position higher in the tree than *nie langer*. This means that *kon* is no longer c-commanded by the antimultiplicative. There are two solutions to this problem. In the first place, the second part of the negative polarity expression is left behind in the c-commanded position in VP. This means that a part of the negative polarity expression is triggered. Secondly we

can make the c-commanding of a trace a sufficient condition. To make a choice between these two options consider the following sentence, which contains the negative polarity verb *skeel* (to bother'), without the modal *kan*:

(36) Dit *skeel* hom **nie** watter verwoestende gevolge dit vir die land se ekonomie inhou **nie.** (Die Burger 1-8-97)
'It doesn't bother him what kind of devastating results this will have for the country's economy.'

In this sentence, the NPI *skeel* is moved to the head of AgrS without leaving any phonological item behind in the VP. Only its non-phonological trace marks *skeel*'s canonical position. This means that we have to choose the second of the two options above and allow triggers to c-command traces.

In sentences (35) and (36), the NPIs were triggered by an antimultiplicative and an antimorphic respectively. These items are both generated in NegP. In order to find out whether the binding approach is applicable to negative polarity verbs we have to look at different constructions as well. In my data sets I found instances of conditionals triggering negative polarity verbs, monotone downward expressions and adversatives. I will discuss one example of each below.

Sentence (13) in section 3.3.1 was an example of a conditional. I repeat (13) below:

(13) Maar **zolang** er ook maar een *greintje* hoop was dat het betaalde voetbal er zou terugkeren, hebben wij geen poging gedaan de baan er te situeren. (De Gelderlander)
'But as long as there was even a grain of hope for professional soccer to make a comeback, we didn't make any attempt to plan the course there.'

In sentence (13) we can identify *zolang* as a phonological realization of the conditional. In the Afrikaans sentence (37) below, the conditional is not visible at phonological level:

(37) Saddam Hoesein *hoef* maar 'n millimeter skeef te gaan en hy word hard geslaan, so voel baie Moslems. (Die Burger 13-7-93)
Saddam Hussein need but a millimeter askew to go and he is badly beaten, so feel many Muslims.
'If Saddam Hussein departs only a millimeter from the straight and narrow, he is severely punished; such is the feeling of many Muslims.'

Since there is no overt conditional expression in (37) we have no c-commander for the NPI *hoef*. I think this problem can only be solved by assuming that sentence (37) is introduced by a CP that contains a zero conditional Ø in its head. I agree that this is not a very elegant option, but doubts about it can be removed if we realize that a checking approach would have had to resort to a similar solution.

Negated verbs are the only NPIs which can be triggered by monotone downward expressions. In (38) below the NPI *hoef* is triggered by the monotone downward expression *net* ('just'):

(38) Vir 'n heerlike melkskommel in 'n kits *hoef* jy **net** roomys te klits by Steri-Stumpie se gegeurde melk. (Die Burger 27-5-93)
'To get a delicious milkshake instantly you just have to mix some ice-cream with Steri-Stumpie's flavoured milk.'

I assume that *net* is generated in an AP that modifies the DP *roomys*. The AP *net* is raised together with the DP to Spec AgrOP. The auxiliary verb *hoef* is moved to the head of AgrS, but its trace is left behind in the head of V. This trace is c-commanded by *net* from its position in Spec AgrOP so that the NPI is properly triggered.

Finally we will look at the case in which an adversative adjective triggers an NPI:

(39) De gemeente Wisch *hoeft* de laatste tijd steeds **minder** geld uit te trekken voor de subsidiëring van activiteiten voor minderheden. (De Gelderlander)
'The municipality of Wisch has had to spend less and less money on subsidizing the activities of minority groups.'

This sentence is very similar to (38). In both sentences the trigger is found as an AP modifying the object. It moves, together with the object to Spec AgrOP. In (38) as well as in (39) the NPI has the role of auxiliary verb. In both sentences, the auxiliary moves to the head of AgrS and it leaves a trace in the head of V. This trace is c-commanded by the trigger in Spec AgrOP.

At the beginning of this section I used a checking approach to account for negative polarity verbs.

Although this approach was quite satisfactory there was a reason for replacing it with a c-command approach. The reason was that in sections 3.3.1 and 3.3.2 it became clear that the triggering of strong NPIs couldn't be accounted for by checking. Instead c-command turned out to be an appropriate requirement for strong NPIs. This raised the question of whether a similar approach could be applied to negated verbs. If so, then the whole set of NPIs would be captured in one approach. The only difference between weak NPIs and strong NPIs would be their set of triggers (monotone downward expressions versus antimultiplicatives, anti-additives and antimorphics). In this section I showed that there is evidence that a c-command approach accounts for negated verbs. This means that we can define weak NPIs as follows:

(40) Definition: weak NPIs or their traces have to be c-commanded by monotone downward triggers.

By adopting this approach the issue of NPIs becomes more streamlined and elegant and therefore more acceptable.

3.3.4 Quantifying Adverbs

In both Dutch and Afrikaans the main triggers of *meer* are antimorphics and anti-additives. In Van der Wouden's (1994) terms *meer* would be a medium NPI. Examples of the use of *meer* in Dutch and Afrikaans were shown in the examples (52)a and b in Chapter 2. These examples are repeated below:

(41) a. Zij hebben geen verblijfplaats meer
b. Hulle het **geen plek** *meer* om te bly nie.
They have no place any more OM to stay neg
'They don't have a place to stay any more.'

In (41)a and b *meer* is triggered by the anti-additive *geen*. I suggest the tree diagram given in Figure 16 below for the sentences in (41):

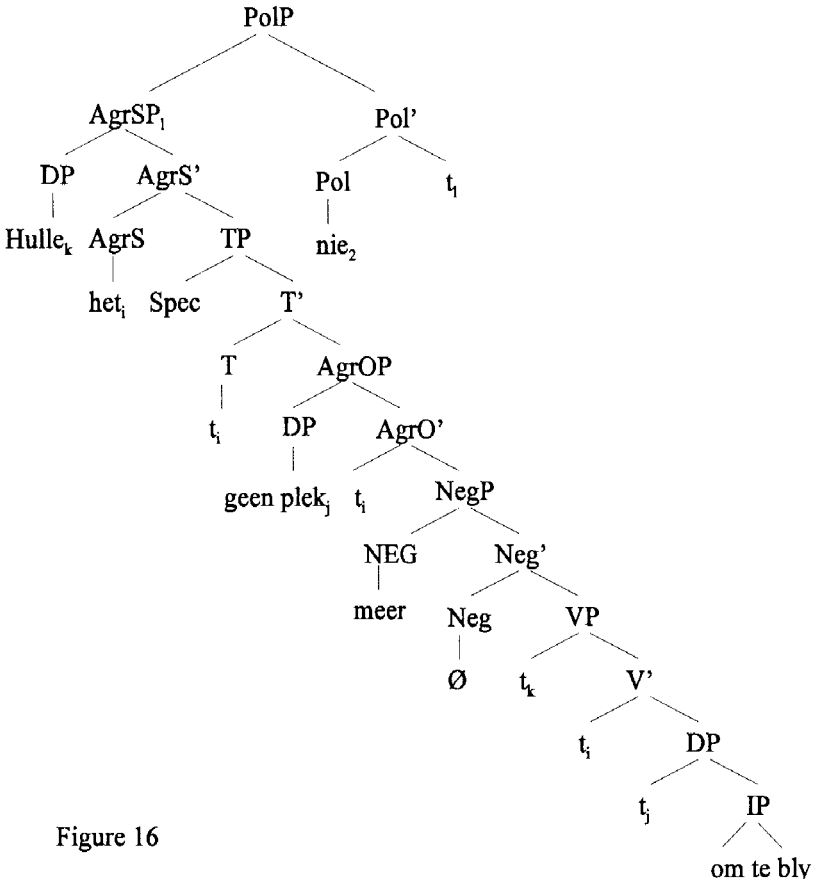


Figure 16

Following Klooster (1993), I assume that the quantifying adverb *meer* is base-generated in NEG. The negative QP *geen plek* functions as the object of the sentence. It has to raise to NEG in order to satisfy the Neg-criterion. It doesn't remain in NEG, however, but moves further up to Spec AgrO, where it checks its Case features against the strong features of AgrO.

The analysis in Figure 16 also account for a sentence like (53) in Chapter 2, here repeated under (42).

(42) Hulle het nie'n plek meer om te bly nie.
'They don't have a place to stay any more.'

Although a sentence in which *meer* is triggered by *nie 'n* is not found in my data set, informants point out that (42) is a grammatical sentence. It is likely that the sentence is colloquial. The analysis, however, is completely alike the one in Figure 16, with *geen* being replaced by *nie 'n*.

A problem for the analysis in Figure 16 is posed by the following sentences:

(43) a. *Hulle het 'n plek nie meer om te bly nie.
b. Hulle het nie meer 'n plek om te bly nie.
'They have no place to stay any more.'

Sentence (43)a is ungrammatical, so we don't want it to be the result of a derivation like the one in Figure 16. Note, furthermore, that (43)b is grammatical and that we do want it to be able to derive it. To solve this problem, I suggest the following: *nie meer* functions as a negative chunk (more precisely as an antimultiplicative chunk). I will accept Klooster's (1993) suggestion that the antimorphic nie_1 is generated in NEG. All other triggers, monotone-decreasing, anti-additive, and antimultiplicative expressions (like *nie meer*), are generated under VP. Let's see what this looks like in the tree:

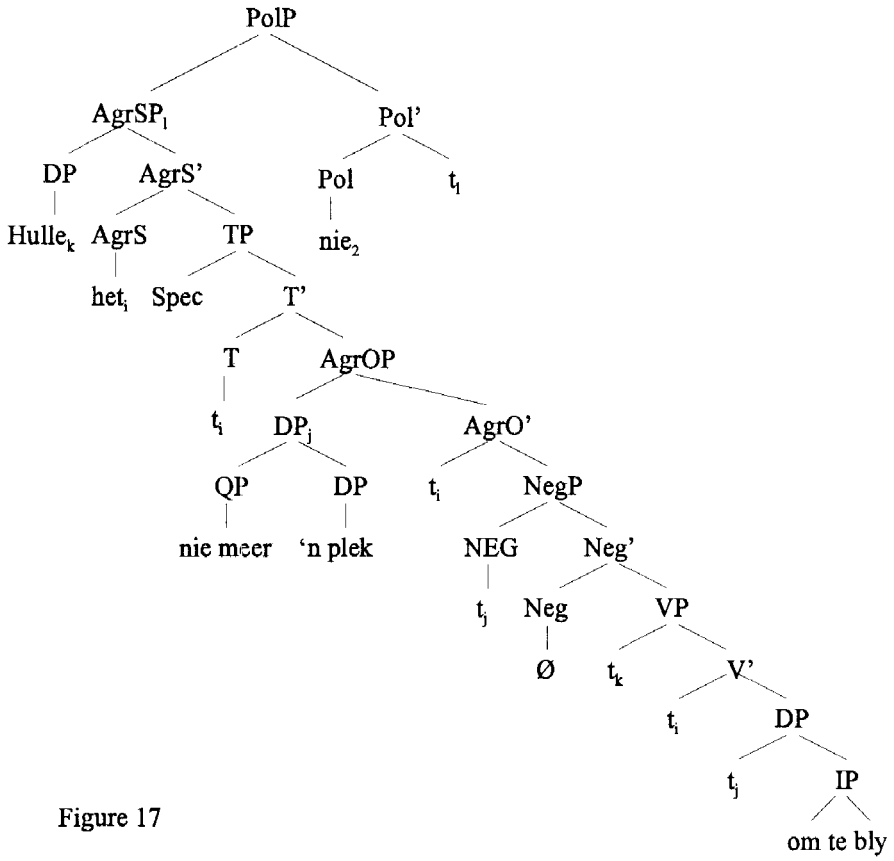


Figure 17

As the reader can see, the result of the derivation in Figure 17 is the grammatical sentence (43)b, whereas sentence (43)a is ruled out . In the diagram in Figure 17 two things are important. Firstly the QP containing *nie meer* is generated strictly to the right of the DP *'n plek*. This has to happen to ensure that sentences like (43)a are ruled out by the grammar. Klooster (1993) makes the following suggestion about *niet meer*, the Dutch counterpart of *nie meer*:

(44) Mogelijk bevat het lexicon de informatie dat *meer*, dat door n-woorden en negatieve operatoren die met *geen* beginnen gebonden kan worden, een minimaal bindingsdomein heeft. (Klooster 1993:130)
Possibly the lexicon contains the information that the adverb meer, *which can be bound by n-words [e.g. not, nobody, nothing etc.:PtH] and negative operators that start with* no, *has a minimal domain of binding.*

If *meer* has a minimal domain of binding, this explains why it is just not possible for a DP to

legitimately take a position between a negation and *meer*[8]. Secondly, this analysis doesn't harm the analysis of sentence that contain the antimorphic sentence negation *nie*. Consider sentence (45).

(45) Hulle ken die plek nie. (Afrikaans)
'They don't know the place.'

It is possible to analyze this sentence using the structure shown in Figure 17. An antimorphic like *nie* is base-generated under NEG. Since there are no NPIs involved both the subject hulle and the object die plek will move to their Spec AgrSP and Spec AgrOP without stopping in NEG. That means that the antimorphic expression *nie* can't be moved and remains in NEG. If *nie* originates under VP it is impossible for *meer* to appear in NEG. If *meer* would appear it would form the anti-multiplicative chunk *nie meer* with *nie. Nie meer* is base-generated under VP and not under NEG.

To summarize the findings so far: (1) The negative phrase NegP is placed between AgrOP and VP. The head of NegP contains a zero operator and also strong neg-features that check the features of the negation in the sentence. (2) Anti-additive n-words are generated in a QP under VP. In order to check their features, these n-words have to move up via NEG. (3) The quantifying adverb *meer* normally originates under NEG, unless it is part of the anti-multiplicative negative expression *niet meer/nie meer*. In that case it is base-generated under VP. In any case it has to be minimally dominated by a trigger or by the trace of a trigger.

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[8]In my data I actually did find sentences that contain intervening items between the negation and *meer*. These sentences are of two kinds. The first kind poses no problems for the approach above. It consists of items that are incorporated into the QP. I will give two examples below, a Dutch one and an Afrikaans one:

(i) a. Van dat alles staat er niet veel meer overeind. (NRC Handelsblad)
Of that everything stands there not much any more upright.
'Not much of this remains unaffected any more.'
b. Sy wou later nie eens meer vars vis eet nie. (Die Burger 18-6-93)
She wanted later not even any more fresh fish eat neg.
'She didn't even want to eat fresh fish any more later on.'

In the Dutch example above, the *meer* is minimally bound by the antimultiplicative expression *niet veel*. In the Afrikaans example *nie eens*, an antimorphic variant of *nie*, minimally binds *meer*. The second kind of sentence that has intervening items between the trigger and *meer* consists of sentences that have the negation in subject position. I will come to this problem in the main text.

Finally we will turn to the sentences in which the negation licenses the NPI *meer* in subject position. Examples of this kind of sentence from the data are:

(46) a. As Du Noon eers beset is, sal **geen mens** met gesonde verstand sy kleinhoewe *meer* wil koop nie, het mnr. Le Brun gesê. (Die Burger 2-7-93)
'As soon as Du Noon is occupied, no sane person will want to buy his cottage any more, Mr. Le Brun said.'
b. **Niemand** gaan *meer* sonder die toestemming van die ANC aan die galg sterf nie. (Die Burger 18-6-93)
'No one will be hanged any more without the permission of the ANC.'

As I have done above, I will assume that the anti-additive expressions *geen* and *niemand* are base-generated under VP. Before moving to Spec AgrSP the anti-additives will raise to NEG to have the neg-features checked and to ensure that the negation has minimal scope over *meer*. After this stop the phrase containing the anti-additives moves up to Spec AgrSP, where its case-features are checked. It leaves behind a trace in NEG, so that the scope over *meer* can be maintained.

Let us also look at the other quantifying adverbs here: Dutch *even* and Afrikaans *ewe*. The graph in Figure 15 in Chapter 2 shows that *even/ewe* are triggered by anti-multiplicatives under almost all circumstances. Recall, however, that the way the data for these items were acquired was extraordinary. In order to get data sets I searched for *even/ewe* preceding an adjective. This may have limited the variety of syntactic constructions and the variety of triggers in my data. Let us look at a sentence containing the Afrikaans NPI *ewe*:

(47) Maar **nie almal** is *ewe* opgewonde oor die veranderinge nie. (Die Burger 3-2-96)
'But not everybody is equally excited about the changes.'

Ewe is triggered by *nie almal*, which is found in subject position. *Even* and *ewe* are adverbs which modify adjectives (in sentence (47) *ewe* modifies the predicative adjective *opgewonde*). The AP containing the adjective and its negative polarity modifier is situated between NegP and VP. In this position there is no problem for the trigger in subject position to c-command the NPI. A majority of the data for *even/ewe* are triggered in this way. Of the Dutch data, 69 percent of the sentences had the trigger in subject position and of the Afrikaans data it was the case in 65 percent of the data. All

other sentences have either an antimultiplicative or an antimorphic base-generated in NEG position. Since the NegP is higher in the tree than the AP, the triggers in NEG can c-command the NPI in AP. Thus the data for *even/ewe* don't give any problems for the c-command approach proposed earlier in this chapter.

However, *ewe/even* does give us a problem when looked at from another perspective. The manner in which this quantifying adverb is triggered is exceptional and only antimultiplicative and antimorphic triggers are found. This, however, is not because the syntactic structure of a sentence with *even/ewe* is not appropriate. It is no problem to come up with a sentence with an anti-additive in subject position:

(48) *Maar **geen student** is *ewe* opgewonde oor die veranderinge nie.
'But no student is equally excited about the changes.'

Sentence (48) is ungrammatical. However, the grammatical structure itself is fine; if *ewe* is left out, sentence (48) becomes grammatical:

(49) Maar geen student is opgewonde oor die veranderinge nie.
'But no student is excited about the changes.'

This means that it must be due to the semantic idiosyncracy of *even/ewe* that sentences like (48) are ruled out. If this is true, the c-command approach given in this chapter needs revision. Or rather, the number of classes of NPIs has to increase. This would entail that the two definitions given so far (one for weak NPIs and one for strong NPIs) are not sufficient. However, before taking that step further research into negative polarity adverbs is necessary.

3.4 Conclusions

From the sections above two important conclusions can be drawn. The first conclusion is that there are two kinds of NPIs: strong NPIs and weak NPIs. The strong NPIs are the NPIs that can be

triggered by either antimultiplicatives, anti-additives or antimorphics. These strong NPIs appear in specifier position or complement position. The weak NPIs are the negated verbs. Weak NPIs can be triggered by any downward-entailing expression and weak NPIs appear in heads. A second conclusion concerns the way NPIs are triggered in the MP. For strong NPIs it was shown that they require a place in the tree c-commanded by an antimultiplicative, anti-additive or antimorphic expression. For the negated verbs, which appear in the heads of phrases, a checking system turned out to be quite efficient. For reason of elegance, however, it is preferable to have a c-command approach for both weak and strong NPIs. There are still some problems in the field of negative polarity. One of these problems is the awkward way the quantifying adverbs are triggered in Dutch and in Afrikaans.

It has been shown that the framework of the MP offers possible solutions for the scope problems of the NPI *meer*. The idiosyncrasy of *even/ewe* may be accounted for by refining the c-command requirements. One thing remains problematic. We can't say that there are only two kinds of NPIs: strong NPIs and weak NPIs. The NPI *meer* is deviant in the way it is positioned in the tree. On top of this, it needs local binding instead of the c-command requirement that was developed in section 3.3.1 to 3.3.3. This prevents us from incorporating the case of *meer* fully into the approach and thus from giving an approach to NPIs that accounts for all relevant data. My suggestion is that further research on quantifying adverbs in several languages should be carried out in order to get a clear picture of the way they behave.

CHAPTER 4

CONCLUDING REMARKS

4.1 Conclusions

In Chapter 1 I have spelled out different approaches to negative polarity over the last three decades. Furthermore, I illustrated in Chapter 1 what the problems were with the different approaches. Klima (1964) and Jackendoff (1972) formulated a syntactic command rule that defined the scope of licensing items. This command rule worked quite adequately. It was a problem, however, to give a proper definition of the trigger in the syntactic approaches. In Klima (1964) and Jackendoff (1972) negation and affectiveness were identified as the crucial features for triggering. A closer look at the semantics of triggers showed that it was not accurate to say that only negation triggers NPIs. For affectiveness it was problematic to decide which items were affective and which were not. Ladusaw (1979), Zwarts (1981) and Van der Wouden (1994) proved that it is much easier to give a definition for NPIs in semantics and logic. It was demonstrated that the group of triggers could be divided into four logical groups with different logical properties (downward-entailment, antimultiplicativity, anti-additivity and antimorphism) and that the triggering of NPIs appeared to depend on these properties, i.e. the group of NPIs could be subdivided according to the characteristics of their triggers. Van der Wouden gave three kinds of triggers: strong NPIs, medium NPI and weak NPIs.

In Chapter 2, the results of the analysis of the corpus study were presented. The corpus study contained negative polarity scalar endpoints (belonging to the grammatical class of nouns), negative polarity understatements and instances of litotes (mainly adjectives and adverbs), negated verbs and quantifying adverbs. This corpus study gave some insight into the way expressions are triggered. It appeared that the grammatical class of the NPI is of great importance for triggering. The nouns in the corpus study are always triggered by anti-additives, the adjectives and adverbs by anti-additives and antimorphics and occasionally (depending on the semantics of the NPIs) by antimultiplicatives and the verbs are triggered by all downward-entailing expressions (they were the so-called weak NPIs). The quantifying adverbs were more problematic, and it is impossible at this stage of research to conclude anything about the way this

class has to be triggered. The findings relating to nouns, adjectives and verbs led to the conclusion that the logical basis for classification of NPIs (see Zwarts 1981, 1986 and Van der Wouden 1994) has a grammatical origin. This outcome obliges the linguist to formulate a syntactic approach to NPI-triggering.

The results in Chapter 2 led to the conclusion that it is necessary, from a theoretical point of view, to give a grammatical account of NPI-triggering. In such an account the semantic information about the triggering of NPIs (i.e. whether they are triggered by downward-entailing expressions, antimultiplicatives, anti-additives or antimorphics) should be captured. In Chapter 3 I have given such an account, using the Minimalist Program, since it is the most widespread grammatical framework nowadays. In the MP properties and features of phrases are usually dealt with by checking. In Chapter 3 it appeared that the checking approach is not appropriate for negative polarity. With the logical properties of the triggers given by Ladusaw (1979), Zwarts (1981, 1986) and Van der Wouden (1994) it was possible, however, to reintroduce (from Klima 1964 and Jackendoff 1972) the c-command-approach. Ladusaw, Zwarts and Van der Wouden gave a proper, logical definition of the notion trigger. By assuming that this semantic piece of information is available in the lexicon of the Minimalist model it was possible to steer clear of the problems Klima (1964) and Jackendoff (1972) encountered.

The corpus study carried out in Chapter 2 has given new, empirical evidence for the classification of NPIs. It became clear once more that logical properties play a crucial role in NPI-triggering, which means that once more it is proven that NPI-triggering relates to semantic features. However, it has been shown that there is a relation between these semantic features and the grammatical ones. For this reason the problem of NPI-triggering can't be solved by looking at semantics only. The only way to solve the problem is to accept that the problem is partly semantic and partly syntactic.

One other important conclusion can be drawn from this thesis on a methodological level: once more the electronic media have proved to be very useful for scientific research, especially for linguistic research. A corpus study, such as the one carried out in this thesis, would have been impossible without the Internet. In earlier work on polarity, linguists mainly used their own sentences and judgements in their research. The newspapers on the Internet allowed me to carry

out an unprejudiced search for data. The data sets I analyzed probably reflect the behaviour of negative polarity in natural (written) language much better than the sentences used by Klima (1964), Jackendoff (1972), Ladusaw (1979), Linebarger (1981), Zwarts (1981, 1986) and Van der Wouden (1994, 1997). Thanks to the data sets, I was able to look at the matter of negative polarity in a broad perspective; I was able to see which items were used in which constructions and how frequently items occurred in certain constructions. Earlier work on NPIs was mainly concerned with a number of problematic, but in fact highly exceptional, sentences. In that light this thesis can be seen as a starting point for further research. Since we have the evidence for the causal relation between the logical groups of triggers and the grammar, we can look at the problematic sentences again and, hopefully, account for them adequately.

4.2 Remaining Problems

I admit that some problems have been left unresolved in this thesis. In section 1.3.1 I gave several problematic grammatical constructions mainly taken from Linebarger (1981). Recall, for example, that we found a difference between *threat* and *promise* in the sentences under (55) in Chapter 1, repeated below.

(49) a. If you contribute a red cent to the Moonies, I'll slap you.
b. *If you contribute a red cent to the Moonies, I'll reward you.

(49) a and b have the same grammatical structure and they both contain a conditional. Nevertheless (49)b is ungrammatical and (49)a is fine. Ladusaw (1979) doesn't give a solution to this problem. Linebarger (1979) gives a pragmatic solution. According to her, this problem can be solved at the level of implication. She doesn't give a formalized approach, however.

In section 1.3.1 in (56) I cited another problematic sentence from Linebarger (1981). I repeat this sentence below:

(50) *I did**n't** *lift a finger* to help her because she's helped me. (Linebarger 1981:91)

In this sentence the clitical negation *-n't* c-commands the negative polarity verbal expression to

lift a finger. According to the definition of weak NPIs in (40) in section 3.3.3 the sentence above should be fine. However, the problem with (50) is neither semantic nor syntactic, but rather a pragmatic one. In (50) it is impossible to get an idiomatic reading for the expression *to lift a finger*. To solve problems like this it is necessary to do more pragmatically orientated research. I consider the pragmatic approach beyond the scope of my thesis, which is why sentences like (50) are not accounted for.

Another problem we came across in Chapter 1 is the case of *only*. Although *only* is a valid trigger for certain NPIs (namely the weak NPIs), the *dictum de nullo*-test fails for *only*. Recall sentence (75) in Chapter 1, repeated below:

(51) **Only** John *budged*.

Since the negative polarity verb *to budge* can be triggered by *only* we expect *only* to be monotone downward. Consider, however, the following *dictum de nullo*-test:

> Only John budged.
> [budge slowly] ⊆ [budge]
> #Only John budged slowly.

Recall from Chapter 1 that Ladusaw (1979) solved this problem by rephrasing the NP 'only John' as 'if someone is not John'. This allows him to give a proper *dictum de nullo*-test for the rephrased 'only':

> If someone is not John he didn't budge.
> [budge slowly] ⊆ [budge]
> ⇒If someone is not John, he didn't budge slowly.

In Chapter 1 I referred to this approach as "rather *ad hoc*". I still think it is rather *ad hoc*, but for the approach to NPIs I have given in Chapter 3 'only' needs to be monotone downward, so Ladusaw's *ad hoc* approach has to be accepted here.

Many questions remain open. It is quite likely that, besides syntax and semantics, pragmatics also plays a role in the matter of NPIs. What I have shown in this thesis, however, is that syntax and semantics are interrelated. It has become evident from earlier work that it is very hard, if not

impossible, to give a purely syntactic or a purely semantic account of negative polarity. However, if the two are considered together, deeper insights can be offered to researchers and theorists.

4.3 Further Research

One other very important conclusion from Chapter 2 was that it isn't clear-cut what an NPI is. For a majority of the expressions in the corpus study, at least some occurrences were found in positive environments. This raises the question: what is an NPI? Do we want an NPI to be triggered under all circumstances or can we allow some violations of the requirement on triggering? A proper answer to questions like these can't be given here. For such an answer more research is necessary. We will have to find out in what semantic fields NPIs emerge and through what kinds of processes expressions become NPIs. For example, this can be done by a diachronic study of some NPIs, ideally in more than one language. A diachronic approach would allow us to see how NPIs are developing in a language. If diachronic studies could be carried out in more than one language (preferably unrelated or remotely related languages) we could investigate whether NPIs appear more often or exclusively in certain semantic fields.

In the paragraph above, I suggest another corpus study. It would also be interesting to investigate negative polarity in spoken language as well. If we want to get an understanding of how NPIs arise and develop in a language, a thorough investigation of NPIs in spoken language is necessary, since it is probably in spoken language that NPIs are initially used, or are initially used as polarity-sensitive expressions. For research like this, again a corpus is required. This time, however, we need a corpus of transcribed conversations between competent speakers of a language. In this corpus, all downward-entailing contexts would have to be checked for the items that appear in their scope. This procedure would reveal which expressions appear often in downward-entailing contexts and thus are polarity-sensitive to some extent.

Another matter for further research would be the relationship of the different kinds of triggers (downward-entailing expressions, antimultiplicatives, anti-additives and antimorphics) to grammar. In the class of anti-additive triggers, for example, there is great diversity in the grammatical groups the triggers belong to. Among anti-additives we find *without*, a preposition,

the adversative verbs and adjectives, and nominal negations like *nobody* and *nothing* as well. A thorough look at the licensing properties of triggers can clarify when it is that NPI-triggering is constrained by grammar and when NPI-triggering is constrained by semantics.

Finally, recall section 3.4.2, in which the negative polarity quantifying adverbs *meer* and *even/ewe* were discussed. Although *meer* and *even/ewe* can both be classified as quantifying adverbs, they differ greatly in the way they are triggered. *Meer* is mainly licensed by anti-additives and antimorphics but *even/ewe* is almost always licensed by antimultiplicative expressions. Since their grammatical function is the same, there must be another reason for this disparity. It is quite likely that the triggering is caused by semantically idiosyncratic properties of the expressions. In order to find evidence for this hypothesis cross-linguistic research is necessary. A comparison of similar items in several languages (if they are available in several languages) could clarify the role of semantic idiosyncrasy.

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