

NEGATIVE POLARITY ITEMS: TRIGGERING, SCOPE AND C-COMMAND¹

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O. Preview of Coming Attractions

This paper addresses a number of issues surrounding the triggering of negative-polarity items, in particular matters of scope and c-command. It is argued that triggering is sensitive to the scope of negation and negative operators, but that a syntactic treatment in terms of c-command is problematic, because semantic scope and syntactic c-command, no matter how we define the latter, and at which level we check it, do not see eye to eye on all the relevant cases.

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The paper is structured as follows: In Section 1, I review the major issues in the study of polarity items, in Section 2, I present a brief overview of the history of this field of inquiry, and in Section 3, I move on to the main dish, a discussion of problems pertaining to matters of scope and c-command.

1. The Big Issues

Negative polarity items are expressions (either words or idiomatic phrases) with a limited distribution, part of which always includes negative sentences. Simplifying a bit, we can say that negative polarity items are items that give rise to minimal pairs of affirmative and negative sentences, of which only the negative member is grammatical. The following pair, for example, may serve to illustrate the fact that English *ever* is such an item:

- (1) a. I don't think I could ever trust you.
- b. *I think I could ever trust you.

With this minimal-pair test in hand, we can ask the following set of questions:

(2) *Lexicographical Questions:*

- (i) For any given language, what are its NPIs?
- (ii) Are there cross-linguistic regularities in the NPI-vocabulary?

(iii) What meanings are expressed by NPIs?

(iv) What, if any, is the connection between lexical meaning and NPI-status?

The lexicographical questions have not been addressed in great depth in the literature, no doubt because it involves a tremendous amount of work to chart the many items of any one language, let alone to compare items cross-linguistically. I am currently completing a lexicon of Dutch polarity items, which will contain an estimated 500 items. It would be surprising if the polarity sensitive part of the English or German lexicon were any smaller. Another reason for neglect might be that lexicographical matters are not usually deemed worthy of the theoretical linguist's attention. I disagree with this assessment. Just as biology cannot possibly be limited to in-depth studies of the fruit-fly, rewarding though these may have been, it is misleading and unsatisfactory to reduce to study of polarity items to just a few high-frequency items like *any* or *ever*.

The polarity distinction between affirmative and negative holds the limelight in the above-mentioned NPI-test. However, negation is only part of the story. If we look at other types of sentences, the picture rapidly gets more complicated. We find various types of interrogative sentences hosting NPIs, as well as antecedents of conditional sentences, result clauses dependent on *too*, comparative clauses and restrictive relatives modifying universal and superlative NPs, positions in the scope of elements like *few*, *rarely*, *seldom* and the like, complements of "adversative" predicates such as *deny*, *forbid*, *lack* etc., and various exclamative constructions with a negative implication, as the following sentences will illustrate:

- (3) a. Do you think I could ever trust you?
- b. If you think I could ever trust you, you're wrong.
- c. I love you more than I could ever say.
- d. Fred is too smart to ever admit he wrote the pamphlet.
- e. Few people ever admit they're wrong.
- f. Fred was the first to ever swim across the Adriatic.
- g. All I could ever do was gnash my teeth and obey.
- h. Only Fred has ever swum across the Adriatic.
- i. Fred denied ever having had an affair with Edna.
- j. Who would ever trust Fred?
- k. Like I would ever trust Fred! Yeah right.

None of the sentences in (3) is formally negative. This brings us to the next set of questions:

(4) *Distributional Questions*

- (i) What is the distribution of a given polarity item?
- (ii) What, if any, distributional features do polarity items have in common?
- (iii) Does the distribution of polarity items vary on a language-to-language basis, or from item to item?

We can add more questions to this list, but these suffice to give us a flavor of the types of things one can look for. I found it to be really helpful to use electronic corpora in trying to answer some of these questions. Corpora give a good sense of what is common and what is unusual and often provide data the researcher, i.e. I, had not thought of.

Lurking in the shadow of the lexicographic and distributional questions, there are the ultimate questions which aim not at the what, the when and the how, but at the why:

(5) The Explanatory Questions

Why are there polarity items?

Why is a particular item polarity sensitive?

It is a safe bet that all languages have negation as a central part of their grammar. It is not known whether all languages have negative polarity items, but so far all the evidence suggests that polarity sensitivity is equally universal. As far as I know, the literature does not mention a single candidate for the status of a natural language with a completely polarity-insensitive vocabulary. Artificial languages, on the other hand, such as programming languages or first-order logic, typically have negation, but no polarity-sensitivity. This suggests that polarity-sensitivity is not logically necessary, but a deeply-ingrained feature of natural language. In this paper, I will not try to answer the why-questions, but let me suggest here that a sufficiently careful set of answers to the lexicographic and distributional questions will begin to provide some insights in where the answer to these ultimate questions might be located.

In this paper, I will focus on a set of issues that properly belong to the second set of questions, the ones pertaining to the distribution of polarity items. In particular, I want to address the triggering relation with holds between a negative element and the polarity item which is said to be licensed by this element. Before I turn to these questions, however, let me sketch in a few strokes the history of the issue.

2. A Brief History of the Study of Polarity Sensitivity

Serious study of negative polarity items is fairly new in the history of linguistics. It can be traced to the beginning years of generative grammar, when Lees and Klima started to explore the distribution of the English indefinite pronouns *some* and *any* in transformational terms.² Before the advent of generative grammar, with its high demands on precision, no one seemed to have cared much about the details of polarity items. Of course it was widely realized that *any* had an affinity for negative, interrogative, or conditional clauses, and their kin. In fact, the large philological dictionaries such as the *Oxford English Dictionary*, or its even larger Dutch counterpart, the *Woordenboek der Nederlandsche Taal*, often comment upon such distributional properties for quite a few polarity items, so that we may presume that the phenomenon itself was well-known to lexicographers, if not perhaps the linguistic community at large. However, just noting that *any* prefers negative sentences to their affirmative counterparts is only the first step in a long series. In the infant years of generative grammar, Edward Klima, by introducing the notion of c-command (or rather, its exact inverse, *in-*

² See Klima (1964, originally written 1959) and Bolinger (1960).

construction-with) made possible a better account of the scope of negation.³ Basic subject-object asymmetries show that this notion is crucial:

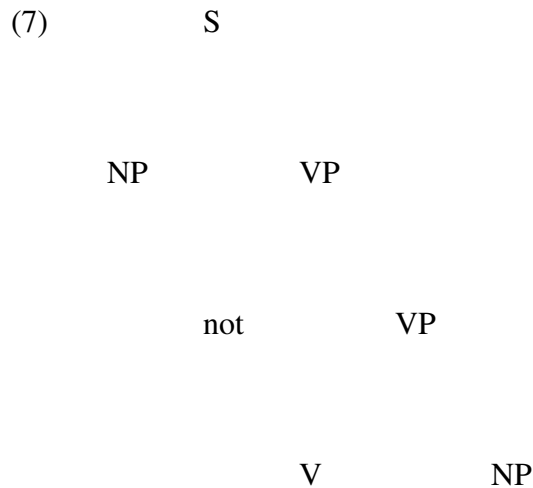
- (6) a. None of us did anything.
b.*Any of us did not sleep.

The direct object is in the scope of negation, whereas the subject is not. Assuming some standard configuration such as the one in (7), we can derive this asymmetry by noting that only the object is c-commanded by *not*:

³ Klima (1964: 297) defines the 'in construction with'-relation as follows:

"A constituent [...] is 'in construction with' another constituent [...] if the former is dominated by (that is, occurs somewhere lower down the branch of) the first branching node [...] that dominates the latter".

It is interesting that Klima does not actually use this notion for the subject-object asymmetry in the text, but for the explanation of other observations. Klima explained the pair (1a,b) in terms of neg-incorporation: negation must be incorporated on the leftmost indefinite, which is to say, the subject, rather than the object. It is interesting that Klima had to his disposal two ways of capturing the distribution of words like *any*: licensing conditions equivalent to modern c-command requirements, and constraints on the expression of negation. The latter are nowadays discarded, in my opinion too hastily.



When we look at more constructions in more languages, however, things are not as crystal-clear anymore. In section 3, I return to the issue of scope, and review in detail the problems that arise when a c-command restriction is imposed on the trigger-NPI relation.

The scope of negation is a typical example of a syntagmatic relation. Lees and Klima were also interested in paradigmatic relations, in particular the quasi-complementary distribution of pairs of items such as *some* and *any*, *sometime* and *ever*, *too* and *either*. This distributional property was derived by an intricate system of transformations which converted so-called indeterminates into indefinites like *any* in the scope of negation, or the abstract question marker WH, except where they would be adjacent to negation, in which case another transformation, *neg-incorporation*, would kick in and give rise to a negative quantifier such as *no*, *nothing*, or *neither*.⁴ In case neither transformation applies, the indeterminate is spelled out as *some*, or *sometime*, or *too*.

⁴ A similar transformation was postulated for WH-items: *who*, for instance, was considered the result of incorporating a marker WH into the indefinite underlying *someone*, *anyone* and *noone*.

Unfortunately, the distribution of the above-mentioned pairs is not exactly complementary, and as a result, the transformational theory did not thrive (cf. the critical remarks in Bolinger (1960, 1977) and Lakoff (1969)). In hindsight, the thing that is most striking about Klima's theory is not so much its transformational character (which is but a reflection of the fashion of the times): It is the particular slant it takes on the relation between interpretation and distribution. The perspective is that of Generative Semantics *avant la lettre*. The issue on the agenda: How is meaning expressed? What governs the expression of an existential quantifier as *any* in some contexts and as *some* in others? It is this perspective which is the most valuable, and at the same time, the most neglected aspect of Klima's (1964) approach to negation and polarity sensitivity.

To see why the expression of meaning is more important than the current ascendancy of interpretive semantics would have it, let us consider for a moment the distribution of the Dutch indefinite adverb *ooit* 'ever' (Hoeksema 1998). Until the 1950's, this adverb was a negative polarity item in the standard language, if not in some of the southern dialects. Consequently, the adverb is found in the context of negation, and minimal pairs such as the following could be constructed:

(8) a. Niemand heeft het ooit geweten.

Nobody has it ever known

'Nobody ever knew it'

b. *Iemand heeft het ooit geweten.

somebody has it ever known

*`Somebody ever knew it'

However, when directly adjacent to *niet* `not', *ooit* was, and is, strictly ungrammatical:

(9) *Ik heb het niet ooit geweten.

I have it not ever known

`I have not ever known it'

In this respect, *ooit* differs from its English counterpart *ever*. It is possible to view this as evidence that *ooit* is a positive-polarity item⁵, as well as a negative-polarity item (Van der Wouden 1994), but this does not yet explain why it is that *ooit* has this peculiar distribution. When we look at the matter from Klima's perspective, we can conceive of it differently. The issue now becomes: How would the meaning of neg+ever be expressed, if not by the combination *niet ooit*? The answer is simple: by the incorporated form *nooit* `never'. Put differently, the difference between *ever* and *ooit* can be seen as a difference in the mapping from meaning to syntactic form: whereas incorporation of negation is obligatory in Dutch, it is optional in English.

⁵ A positive-polarity item is a word or phrase which may not occur in the immediate scope of negation (cf. Ladusaw 1979, van der Wouden 1994). A well-known example is English *some*; a sentence like *I did not see someone* is grammatical only when *some* is given scope over *not*. Van der Wouden (1994, 1997) has argued that there are three different types of positive polarity items, distinguished by the set of environments in which they may not occur. If this is correct, then an item can in principle be both a positive and negative polarity item, provided that the set of environments where it may not occur because of its positive polarity is a strict subset of the set of environments where it must occur, as a negative polarity item.

A similar type of account suggests itself in other areas as well. Consider for example the adverbs of temporal perspective, *still*, *already*, *yet*, *anymore*. These adverbs are semantically related. For instance, *still* and *already* can be viewed as duals (Lobner 1987): *still p = 5 already 5 p*. If I am still less than 90 kilograms, it follows that I am not already more than 90 kilograms, and vice versa. However, not all combinations of these operators with negation are acceptable. If I merely want to express that I ceased to be young, I could in principle pick any of the following options:

(10) a. I am not young anymore.

b. I am not still young.

c. I am already not young.

However, under such circumstances, only the first choice is idiomatic. One could explain the unavailability of the second option by noting that *still* is a positive-polarity item, hence barred under direct negation. However, that still leaves us with the question why (10c) is not an available option either. Rather than saying that (10b) is ruled out by positive-polarity, and (10c) by some unknown factor, it would be preferable to ascribe the unavailability of both (10b) and (10c) to the existence of a dedicated item, *anymore*, which is used to express the meaning of *still* precisely in the context of negation. The other sentences are not strictly speaking ungrammatical, but the normal way of expressing their meaning is by uttering (10a). If there are special factors involved, such as a desire to echo an earlier statement, then (10b) could be used, or if earliness needs to be signalled, which is conventionally associated with *already*, then (10c) might be preferable to (10a). Looking at it this way, the positive-polarity

status of *still* is an epiphenomenon of a system of preference rules on how meaning is expressed in the domain of temporal perspective operators.

Constraints on how meaning is expressed are not naturally part of an interpretive theory of meaning, and hence alien to the conception of semantics as it developed in the so-called Extended Standard Theory of the 1970s or, for that matter, Montague Grammar, which was likewise interpretive in character. In psycholinguistic terms, EST and Montague grammar took the point of view of the hearer. On the other hand, Generative Semantics, a paradigm which developed soon after the publication of Klima's article, was more hospitable to the speaker's point of view, as was sociolinguistics, with its emphasis on variation and choice. In variation theory, it is important to decide which forms are variants of another, e.g. which forms are different ways of expressing the same proposition, and what factors determine the choice of one form over another. In more recent times, Optimality Theory (cf. Prince and Smolensky 1993) has emerged as a general framework which pays attention to the paradigmatic dimension of language, in particular the competition of different forms for the expression of one meaning.

In the period following Klima's paper, the battle between Generative versus Interpretive Semantics raged. In the study of polarity items, interpretive theories became more and more influential (cf. Jackendoff 1972, Lasnik 1972). Seuren pursued polarity items in Generative Semantics (Seuren 1974, 1976).

More important for subsequent work on polarity items was Fauconnier's work on scalar implications, and implication reversal (Fauconnier 1975, 1977, 1978), and Ladusaw's incorporation and elaboration of this theory in the formal framework of Montague grammar (Ladusaw 1979, 1983). Both authors emphasized the semantic nature of the triggering

property. Suppose we adopt the generalized notion of entailment in Keenan and Faltz (1985). We may then say that an expression is entailed by its hyponyms. For example, in this usage, we could say that *Texan* entails *American*, just as *Parisian* entails *French*. Normally, in a sentence, we are allowed to replace an expression by any expression entailed by it, *salve veritate*. If I say *He's Parisian*, you conclude *He's French*, by using this substitution. However, precisely in the context of a trigger expression, this replacement property is reversed: we may now replace expressions by expressions entailing them, *salve veritate*. In the case of negation, this phenomenon is of course well-known as Modus Tollens, and leads us to conclude that Mary is not French from *Mary is not Parisian*. In a schema:

(I) ... A ...	(II) Trigger ... B ...
A --> B	A --> B
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... B ...	Trigger ... A ...

Schema (I) is sometimes referred to as the Dictum de Omni, and schema (II) as the Dictum de Nullo. In both cases, we assume for simplicity that there are no triggering elements in the positions represented by the dots. The main point to note here is that we now have a way of defining triggers that is independent from their effects on polarity items. This definition is purely semantic, involving as it does the semantic notion of entailment. Quantificational expressions such as *few of us* or *nobody* share with negation this property of reversing negation. From *Few of us are French* we may conclude that *Few of us are Parisian* (unless we read this as 'relatively few'), just as we may conclude from *Nobody here is American* that

nobody here is Texan. Consequently, the Fauconnier-Ladusaw theory correctly predicts that these noun phrases may act as triggers for polarity items.

Entailment reversal is only one of the defining properties of negation. As Zwarts (1986a, 1995, 1998) noted, some triggers share even more properties with negation, and it appears that various subclasses of the entailment reversing expressions correspond to subclasses of polarity items. I will not discuss this interesting matter any further, but refer the reader to Zwarts (1986a, 1995, 1998) and Van der Wouden (1994, 1997).

Given the general idea that a trigger is an entailment-reversing expression, we are still left with the problem of the triggering relation. When does a trigger license a polarity item? In line with the above, the most natural solution would be to say that an item is triggered whenever it occurs within the scope of a trigger. But what exactly *is* the scope of a trigger? It is here that the c-command restriction on triggering is often invoked. In the next section, we will take a long look at the complicated issues surrounding scope and c-command.

3. Scope and the c-command restriction on triggering

3.1 Motivation for the restriction

C-command conditions on the triggering relation are very pervasive, and have been discussed regularly in the literature (see for instance Klima 1964, Ladusaw 1979, Lasnik and Barss 1986, Progovac 1988, 1994, Hoekstra, De Hoop and Zwarts 1988, Zwarts 1981, Mahajan 1990, Hoekstra 1991, Kayne 1994, McCloskey 1996, Benmamoun 1997), often in parallel

with similar claims about the binding relation between reflexive or reciprocal pronouns and their antecedents. Evidence from polarity items has been used to motivate a variety of proposals, ranging from position asymmetry of the two objects in double object constructions to the position of the verb in Irish. Much hinges thus on the empirical foundations of the c-command condition. Theoretically, the condition is a nice example of the explanatory power of modern theoretical syntax. A whole slew of surface generalizations can be derived from a single condition which states that a negative polarity item must be c-commanded by its trigger. For instance, given fairly standard assumptions about English phrase-structure, we can reduce the following observations to this condition:

(11) *Some generalizations on triggering in English*

- a. There is a subject-object asymmetry in that subjects may trigger NPIs in direct object position, but not vice versa.
- b. There is a ban on topicalization of NPIs in English.
- c. Elements of a subordinate clause may not trigger NPIs in the matrix clause.
- d. A trigger and an NPI may not be coordinated.

Generalization (11a) was illustrated in the previous section with the pair of sentences in (6). The same asymmetry can also be observed in Dutch, German and many other languages. It is quite a robust generalization, and generally accepted. For English, the asymmetry can be extended to triggering by *not*: subject NPIs may not be triggered by *not*, whereas objects can be:

(12) a. *Any of us did not meet Jack.

b. Jack did not meet any of us.

Generalizations (11b-d) are illustrated by the examples in (13-15) below, respectively, which feature, in addition to *any*, the negative polarity items *so much as* and *ever*:

(13) a. Nobody said so much as a word about it.

b. *So much as a word, nobody said about it.

c. Nobody ever believed it.

d. *Ever, nobody believed it.

e. Nobody mentioned any problems.

f. *Any problems, nobody mentioned.

(14) a. *That nobody trusts him ever bothered me.

b. *If nobody trusts him, it will ever bother me.⁶

c. *That nobody trusts him bothered any of us.

d. *If nobody trusts him, it will bother any of us.

(15) a. *Few professors and any students were at the party.

b. *Any students and few professors were at the party.

⁶ If *ever* is used, somewhat archaically, with the sense of *always*, this sentence is correct. In that use of the word, *ever* is not an NPI.

- c. *I met no professors but any students.
- d. *I met any students but no professors.

The observations in (13) follow if we assume that the topicalized elements are placed in a position which is higher than the other clausal positions, such as the subject position. This is the case, e.g., if the topicalized element is adjoined to the clause. The observations in (14) are also straightforwardly accounted for by the c-command restriction.

As for the case of coordinations, the predictions of the c-command condition are not as straightforward. We can still try to derive the generalization in (11d) in the following way. Suppose that the c-command restriction is really a stricture demanding asymmetric c-command between trigger and polarity item, and suppose moreover that coordinated elements are structurally parallel, hence in mutual c-command. In that case we would predict neither conjunct to trigger a polarity item in the other conjunct.

However, things are more complicated than that, as we will see in the next section. In subsequent sections we see that all is not well with observations (11a) and (11b) either, in spite of the initial evidence.

3.2. Scope and coordination

Most accounts of phrase-structure in coordinations would predict at least that the first conjunct c-commands the second one, and some accounts would also predict that the second one c-commands the first. If we assume the structure in (16), c-command holds in both

directions (i.e. XP_1 c-commands XP_2 and vice versa), and hence both (15a) and (15b) are incorrectly predicted to be grammatical:

(16) XP

XP_1 and XP_2

If, on the other hand, we assume the structure in (17) (Sag, Gazdar, Wasow and Weisler 1985), we get asymmetric c-command, with XP_1 c-commanding XP_2 but not vice versa. Now only (15a) is incorrectly predicted to be grammatical:

(17) XP

XP_1 XP[conj]

conj XP_2

and

A similar structure is assumed by Kayne (1994), whose theory of phrase structure also predicts asymmetrical c-command of the second conjunct by the first conjunct, the main

difference with the Sag et al. proposal being that for Kayne, the conjunction sign *and* is the lexical head of the conjunction, whereas for Sag et al., the individual conjuncts are the (nonlexical) heads.

Regardless of whether we assume symmetrical or asymmetrical c-command, we have a problem at our hands. If we shift our attention now to disjunctions, the c-command condition yields better results, since they allow a polarity item in the second conjunct to be triggered by the first conjunct, but not vice versa:

(18) a. I met no professors or anyone else.

b. *I met any professors or noone.

Assuming asymmetric c-command between the two disjuncts, the c-command restriction correctly predicts that (15a) is grammatical and that (15b) is ungrammatical. Similar examples can be found in Dutch (cf. Rullmann 1995):

(19) Hij consulteerde geen enkele professor of ook maar een van de andere aanwezigen.

'He consulted not a single professor or any of the other people present'

Note that the asymmetry observed above between conjunction and disjunction vis-à-vis the licensing of polarity items is also reflected in the readings that we find. In the case of disjunction, both disjuncts appear to be in the scope of negation. Sentence (18a) for instance, is equivalent to (20a) below, but not to (20b):

- (20) a. I did not meet any professors or anyone else.
 b. I met no professors or I met someone else.

This violates a law of equivalence which normally holds (Keenan and Faltz 1985):

- (21) Whenever NP₁ denotes a monotone increasing quantifier [see Barwise and Cooper (1981)], we have the following equivalence:

$$NP_1 \text{ verb } NP_2 \text{ or } NP_3 \Leftrightarrow NP_1 \text{ verb } NP_2 \text{ or } NP_1 \text{ verb } NP_3$$

For example, the following equivalences are valid:

- (22) a. John met Sue or Ellen \Leftrightarrow John met Sue or John met Ellen
 b. John met a boy or a girl \Leftrightarrow John met a boy or John met a girl
 c. John met no boy or no girl \Leftrightarrow
 John met no boy or John met no girl
 d. John met every boy or every girl \Leftrightarrow
 John met every boy or John met every girl
 e. John met every boy or no girl \Leftrightarrow
 John met every boy or John met no girl
 f. John met only boys or only girls \Leftrightarrow
 John met only boys or John met only girls
 g. John met no boy or every girl \Leftrightarrow

John met no boy or John met every girl

Some of these sentences deserve special attention. Consider the left-hand sentence in (22g). Unlike (18a), the negative element in the first disjunct does not have scope over the entire disjunction. In other words, the following two sentences are not equivalent:

- (23) a. John met no boy or every girl
b. John did not meet any boy or every girl.

If John in fact met every girl, we would say that (23a) is true and (23b) is false. The conclusion to be drawn from this is inevitably that the scope of *no* in disjunctions is not invariable, but depends in part on the other elements of the disjunction. There is no positional difference between the occurrence of *no professors* in (18a), and that of *no boy* in (22g).

One tempting way to deal with these data is to treat *anyone else* as an indefinite in the sense of Kamp (1981), that is, as essentially nothing but a predicate. We could then attempt to view *no professors or anyone else* as a case of predicate disjunction, such that *professors* is joined with *anyone else*, yielding an interpretation equivalent to *professors or other people*, a common noun disjunction to be read within the scope of *no*. This solution, however, creates other problems, such as the problem of how to account for the fact that this reading would be available for disjunctions within the scope of *no*, but not for those within the restriction of *every*, for instance. That is to say, the sentence **John met every professor or anyone else*, to the extent that it can be interpreted at all, does not seem to mean that John met every professor or other person. Note in this connection that the restriction of a universal quantifier

is a position where *anyone* may legitimately occur, so the problem does not seem to reside in the polarity sensitivity of *anyone* per se, but rather in the fact that the scopal properties of *no* do not appear to be shared by *every*.

An alternative proposal, put forward by Rullmann (1995), is to treat Dutch *geen* 'no' as the result of incorporation of negation into the determiner (recall Klima's (1964) theory of neg-incorporation). We could then view a structure underlying (20a) as the source for (18a). However, such an analysis would incorrectly predict that (23a) and (23b) are, on at least one reading, equivalent.

Note that disjunctions with *either .. or* do not result in anything comparable to (18a):

(24) I met either no professors or anyone else.

In (24), the quantifier *no professors* does not have scope over the second conjunct. Hence *anyone else*, if acceptable at all, can only have a free choice or universal reading, making the sentence equivalent to:

(25) I met either no professors or everyone else.

I conclude that a syntactic account in terms of c-command is not going to explain the distribution of polarity items in coordinate structures. It is perfectly clear, however, that all the grammatical occurrences of polarity items are within the semantic scope of a negative operator. For instance, if we perform a substitution test, replacing an expression by another

one which denotes a subset, the result will have the same truth-value as the original sentence.

Thus the inference in (26) appears to be valid:

(26) I met no professors or students -> I met no professors or female students

This means, in Ladusaw's (1979) theory, that the position of *students* is one where we may put a polarity item, a correct prediction, as we have seen. Contrasting conjunction now with disjunction, and replacing *and* by *but* (which is preferred if the conjoined elements have opposite monotonicity properties, cf. Barwise and Cooper 1981), let us consider the inference in (27):

(27) I met no professors but students -> I met no professors but female students

The inference is clearly invalid. Hence we may, on Ladusaw's theory, predict that polarity items are no good in the position of *students*, and as we have seen, this is a correct prediction (cf. 15c,d).

Semantic scope, then, predicts the distribution of *any* in coordinate structures, but what it is that will in turn predict semantic scope still remains a mystery, unfortunately. Syntactic structure may play a role, certainly, but lexical semantic differences such as the difference between *and* and *or* play an equally important role. A good theory of scope is still very much a desideratum in modern linguistics.

3.3. Topicalization

One of the most popular observations regarding English polarity items is the general ban on topicalization. This ban is not restricted to English, but seems to be valid in other languages as well. Thus it was noted in Hoekstra, De Hoop and Zwarts (1988) that indefinites with the NPI-adverb *ook maar* do not topicalize in Dutch:

- (28) a. Niemand heeft ook maar iets gezien.
nobody has even anything seen
"Nobody saw anything whatsoever"
- b. *Ook maar iets heeft niemand gezien.
even anything has nobody seen

Similar examples could be adduced from German, or French, or Spanish, to name but a few of the languages where a similar constraint appears to be operative on the topicalization of negative polarity items. As we have seen above, if we require polarity items to be c-commanded by their triggers, this ban on topicalization could be explained away as a corollary of that more general requirement. However, before doing so, let us consider the facts of the matter in some more detail. It will become clear that the facts are more recalcitrant than is congenial to the general health and well-being of the c-command requirement. In doing so, it will be useful to make a broad division between indefinite NPIs, verbal NPIs, predicative NPIs and adverbial NPIs.

3.3.1. Topicalisation of indefinite NPIs

First of all, it has been noted that fronting a clause with a polarity item in it yields better results than fronting just the polarity item itself (Hoekstra 1991):

(29) Dat Jan *ook maar iets* zou doen, had ik niet verwacht.

That Jan even anything would do, had I not expected

"That Jan would do anything at all, I had not expected"

According to Hoekstra, this is due to reconstruction at Logical Form, which puts clauses back into their original positions, but, crucially, not fronted NPs or PPs, which take scope according to their surface structure positions. I find myself in partial agreement with Hoekstra's analysis: the complement-clause in (29) is clearly within the scope of the matrix negator *niet*, and this is expressed by Hoekstra's reconstruction proposal. I do not agree, however, that fronted NPs and PPs cannot have similar scope properties. Much depends here on the nature of the fronted element as well as the properties of the operators that take scope over it. Consider

(30) a. Iets wil ik niet.

something want I not

"There is something I don't want"

b. Iets nieuws wil ik niet.

something new want I not

"I do not want anything new"

The indefinite pronoun *iets* in (30a) can only take wide scope. The indefinite expression *iets nieuws* in (30b), in the other hand, is most naturally interpreted within the scope of negation. We see, rather clearly, that not all indefinites pattern alike, and that there are scopal differences between bare pronouns and more elaborate forms (see also Hoeksema and Klein 1995 for additional exemplification of this point, as well as the discussion in de Swart 1998). It would take us too far to explore all possible scope options for indefinites and negation. Suffice it to say that there is no clear correlation between scope and c-command at surface structure. I have tried to argue that the distribution of polarity items follows from semantic scope, which is not necessarily expressed in terms of c-command. The prediction, therefore, is clear: if topicalized indefinites may appear within the scope of negation, then polarity items should also be permitted to topicalize under comparable circumstances. In particular, it is predicted that the addition of *ook maar* to the indefinites in (30) should yield an ungrammatical and a grammatical sentence, respectively. This prediction is not borne out exactly:

- (31) a. **Ook maar iets* wil ik niet.
b. **Ook maar iets nieuws* wil ik niet.

My explanation for this mishap is that *ook maar*-indefinites have a propensity for wide scope (cf. also Hoeksema and Klein 1995 for a discussion of wide scope preferences with respect to negative predicates). This propensity can be illustrated with the following examples:

- (32) a. Iets belangrijkers bestaat niet
 something more important exists not
 "there isn't anything more important"
- b. Ik geloof niet dat er ook maar iets belangrijkers is.
 I believe not that there even anything more important is
 "I don't believe there is anything more important"
- c. Ik geloof niet dat er ook maar iets belangrijkers niet is
 I believe not that there even anything more important not is
 "I don't believe anything more important isn't there"

Sentence (32a) has narrow scope for the indefinite in subject position. In sentence (32b), the *ook maar* NPI is triggered by matrix negation. Given (32a), one would expect to see the embedded subject in (32c) take narrow scope w.r.t. the lower negation, yielding the reading "I don't believe there isn't anything more important". However, the actual reading is the somewhat odd "I don't believe that there is anything more important that isn't there", with a clear wide scope for the embedded subject w.r.t. to the lower negation. So this desire to take scope over clause-mate negation (in lower position) sets apart *ook maar*-indefinites from their *ook maar*-less counterparts. I do not really understand why *ook maar* acts this way, but the facts are clear.

Nevertheless, acceptable cases of topicalization of polarity sensitive indefinites are attested, albeit not in English. In English, to be sure, topicalization is far more restricted than it is in the Germanic sister languages German and Dutch. In English, topicalization of indefinites is especially rare, and subject to heavy pragmatic restrictions (Ward 1985, Prince

and Ward 1991). For this reason, English is not a suitable language to test c-command restrictions on indefinite polarity items. (As for other types of polarity items, we will discuss them later on in this section.)

In Dutch, we must perform a little trick: we bury *ook maar* inside an indefinite, putting it in spots where it may not receive wide scope. If the indefinite inside which *ook maar* is located itself has narrow scope w.r.t. negation, *ook maar* should be licensed, even when it is not c-commanded by negation. The following examples show that this is true. They are perfectly acceptable and taken from a corpus of natural occurrences of polarity items. The first contains an idiom "of X is no talk" meaning "X is not the case". The second contains *zelfs maar*, a variant of *ook maar* (cf. Rullmann and Hoeksema 1997 for a comparison of the two expressions).

(33) a. Van een ook maar bij benadering eerlijke rechtspleging was geen sprake (*Het Vaderland*, 26-9-1959)

"There wasn't even a halfway fair administration of justice"

b. Zijn huid of zelfs maar zijn betrekking had de goede man voor zijn ideeën juist niet over.

"His skin or even just his job did the good man not want to venture for his ideas"

(*Groningsche Volkshalmanak voor het jaar 1908*)

Similar examples can be adduced for German, using *auch nur*, the German counterpart of *ook maar*.

(34) Ein rebellischer oder auch nur bemerkenswert undisziplinierter Soldat bin ich nicht gewesen. (Günther de Bruyn, *Zwischenbilanz*, 202)

"A rebellious, or even remarkably undisciplined soldier I have not been"

For cases of NPI-topicalization in Greek, including indefinite NPIs, see Giannakidou (1997: 183 ff.). Even in the case of English, we can embed *any* or *ever* inside a topicalized phrase under the scope of negation:⁷

(35) a. A solution that is any better I have not been able to find.

b. A fireman who has ever used this equipment, we don't have available right now.

To see that these items are triggered by negation, compare these sentences with their affirmative counterparts:

(36) a. *A solution that is any better I have been able to find.

b. *A fireman who has ever used this equipment, we have available right now.

⁷ As an anonymous reviewer noted, the contexts in (35) are also contexts in which French uses subjunctive morphology. This is clearly a related fact, given the strong connection between the licensing of polarity items on the one hand and the presence of subjunctive negation on the other (cf. e.g. Giannakidou 1997, Quer 1998).

Nonetheless, it is only fair to note that topicalized phrases with polarity items are rare, especially in the case of indefinite polarity items. For *ook maar*, a corpus of well over 1500 occurrences only yielded 3 cases (Rullmann and Hoeksema 1997). In other areas, violations of c-command may be exceedingly common, however. As noted for instance in Hoekstra, De Hoop and Zwarts (1988), Hoekstra (1991) and Falkenberg (1997), Verb Second in Dutch and German routinely violates c-command restrictions. This leads us to the next topic, verbal polarity items.

3.3.2. Verbal NPIs

The polarity sensitive auxiliary *hoeven* 'need' and its German counterpart *brauchen* may occur in second position in main clauses, while negation appears in the verb phrase:

(37) Je hoeft deze boeken niet te lezen (Dutch)

you need these books not to read

"You don't have to read those books"

(38) Du brauchst diese Bücher nicht zu lesen. (German)

you need these books not to read

"You don't need to read these books"

We could view this as evidence that the c-command restriction is checked before Verb Second takes place. Verb Second is treated, in generative syntax, as a transformation moving the verb from a low position inside the VP (where it follows any negative item) to a higher node, typically C. Note that we may observe a similar disobedience of c-command in the English modal *need*, although here we may not invoke Verb Second:

(39) a. You need say no more.

b. Fred need only say Yes.

The actual restriction here seems to be command, rather than c-command: as long as the clause is negated in which the modal appears, the result is grammatical. Compare (39) with (40), where negation appears in a lower clause, and so the clause in which *need* appears is not negative:

(40) *You need tell Fred that he is not invited.

Similarly in Dutch and German. Negation in higher clauses may trigger *need* in lower clauses, but this is compatible with a command restriction:

(41) I don't think you need tell Fred that he is not invited.

However, this is subject to the availability of a neg-raising reading, in which the negation has semantic scope over the embedded, rather than the matrix, clause. When the matrix verb is not a neg-raiser, the result is odd:

(42) *I didn't say you need tell Fred that he is not invited.

I conclude that triggering of verbs is a semantic matter, having nothing to do with syntactic c-command conditions.

Similarly, verbal idioms do not exhibit c-command restrictions. Compare e.g. the following English examples:

(43) a. Carla *could stand* it no more.

b. Al *could abide* none of it.

c. Frieda *stopped at* nothing.

Assuming a structure like [*can [stand it no more]*] or [*stop [at nothing]*], at least part of the idiom is not c-commanded by the negative quantifier triggering it. These examples also show that the Leftness condition invoked by Ladusaw (1979), according to which polarity items must be preceded by their triggers, does not hold for verbal idioms. In older stages of English, violations of the Leftness Condition were even more prevalent, due to the different placement possibilities of negation, which permitted clauses like *she could stand him not*.

3.3.3. Predicative NPIs

As for NPIs which are adjectives or predicate nominals, topicalization is generally allowed. This is to be expected, given that they are scope-insensitive. They do not engage in scopal ambiguities, and regardless of whether they occur in their canonical position, or topicalized, they fall within the scope of negation. To illustrate this claim, I will only give examples with a few predicative NPIs. Actually, there are quite a few, but I will forego a complete exposition here. Consider the following cases:

(44) a. Het is daar niet *pluis*. (Dutch)

it is there not safe/OK

"It's not safe there"

b. *Pluis* is het daar niet.

Safe/OK is it there not

c. Helemaal *pluis* geloof ik niet dat het daar is.

completely safe believe I not that it there is

"Completely safe, I don't believe it is, out there"

(45) a. Sie war wohl nicht *ganz bei Trost*. (German)

she was probably not quite sane

"She was probably not quite sane"

b. *Ganz bei Trost* war sie wohl nicht.

Completely sane was she probably not

(46) a. It is not *my cup of tea*. (English)

b. *My cup of tea*, it's not.

Note that, as (44c) illustrates, long-distance topicalization is permitted, at least in Dutch. See also section 3.5. below for some discussion of scrambling of NPI predicates in Dutch.

3.3.4. Adverbial NPIs.

The class of adverbial NPIs is like the class of adverbials in general: large and heterogeneous. Some items strictly prohibit any kind of topicalisation, such as the polarity sensitive adverbs of temporal perspective (in English: *yet*, *anymore*). Compare for instance:

(47) a. I am not ready yet.

b. *Yet I am not ready. (* on intended reading; OK when *yet* is concessive)

(48) a. Alice does not live here anymore.

b. *Anymore, Alice does not live here. (OK for positive-*anymore* dialects)

In Dutch, the same restriction holds:

(49) a. Ik wil dit niet meer.

I want this not anymore

"I want this no more"

- b. *Meer wil ik dit niet.

However, English has a variant of *yet*, *as (of) yet*, which clearly associates itself with negation, and nevertheless may easily be fronted (Hoeksema 1993). Consider:

(50) a. We have not heard anything as yet.

- b. As yet, we have not heard anything.

The association of *as yet* with negation is of a different, looser, kind, however, than we encounter in the case of *yet*. *Yet* is sensitive to sentential negation, but not to negative predicates in general. Compare:

(51) a. These problems are unsolved as yet.

- b. These problems have not been solved yet.
c. *These problems are unsolved yet.

Adverbs like *ever*, or its German and Dutch counterparts *jemals* and *ooit*, do not topicalize when they are polarity sensitive (cf. Hoeksema 1998 for a discussion of Dutch *ooit*), unless they appear inside larger units under the scope of negation (cf. 30b above). This latter possibility does not seem to exist for *yet* and *anymore*, because these temporal perspective

adverbs need the negation to occur within the same clause (with the principal exception, it appears, of neg-raising contexts). Compare:

- (52) a. They don't have a player who has ever made it to the play-offs.
- b. *They don't have a player who can slam-dunk anymore. (OK when *anymore* is outside the relative clause)
- c. A player who has ever made it to the play-offs they don't have.
- d. *A player who can slam-dunk anymore, they don't have.
- e. I did not apply because I ever wanted to serve in the Navy, but only to avoid serving in the Army.
- f. *I did not apply because I love the Navy anymore, but because I hate the Army.
- g. Not because I ever wanted to serve in the Navy did I apply, but only to avoid serving in the Army.
- h. *Not because I love the Navy anymore did I apply, but because I hate the Army.
- i. I don't believe he would ever say a thing like that.
- j. I don't think this is Kansas anymore.

The examples a-b show a difference between long-distance or non-clausemate triggering, examples c-d illustrate that the difference between a-b is preserved under topicalization, examples e-h illustrate the difference between long-distance and local triggering with adverbial clauses, and i-j, finally, show how the difference between long-distance and local triggering may be neutralized in neg-raising contexts.

An adverbial expression which occurs fairly regularly in sentence-initial position is *in his/her/my etc. wildest dreams*, cf.

- (53) a. In his wildest dreams, this supreme political survivor cannot have believed everything would turn out so well. (*The Times*, 22-3-1991)
- b. In his wildest dreams, George Washington coach Mike Jarvis couldn't have imagined this scenario. (*The Washington Times*, 8-3-1993)

The same is true for the Dutch counterpart to this idiom, *in zijn stoutste dromen*:

- (54) In mijn stoutste dromen had ik dit niet verwacht. (Dutch)
- in my wildest dreams had I this not expected
- "In my wildest dreams, I had not expected this"

Other superlative adverbial NPIs can be fronted as well, e.g. *met de beste wil van de wereld* 'with the best will in the world' and *in de verste verte* 'in the furthest distance, even remotely':

- (55) a. Met de beste wil van de wereld kan ik dit niet goedkeuren. (Dutch)
- with the best will in the world can I this not approve
- "With the best will in the world, I cannot approve of this"
- b. In de verste verte was ik niet bereid om te dwepen met de leer der abstracte vrijheid in de volksnijverheid. (*Herinneringen uit de levensjaren van Mr. H.P.G. Quack 1834-1913*, 191)

In the furthest distance was I not willing for to idolize with the dogma of abstract liberty in industry

"In no way was I willing to idolize the dogma of absolute liberty in industry"

In English, another adverbial NPI which fronts easily is *for the life of me*:

(56) a. For the life of me, I can't figure out why we can't ban Uzis or Tech 9s and these other ridiculous weapons. (*The Washington Times*, March 13 1992)

b. But for the life of me, I cannot remember his name. (from *'In the line of duty'*)

Another group of adverbs which can be topicalized (as part of a larger constituent) is that of degree adverbs. In Dutch, a case in point is *bijster* 'very' (cf. Klein and Hoeksema 1994), in German, *sonderlich* 'very'. Cf.:

(57) a. Hij was niet bijster vrolijk. (Dutch)
he was not very merry

b. Bijster vrolijk was hij niet.
very merry was he not

(58) a. Das war nicht sonderlich viel. (German)
that was not all that much

b. Sonderlich viel war das nicht.

A full overview of all types of adverbial expressions would take us too far, but one conclusion we can safely draw is that topicalisation of adverbial phrases is possible in many cases, impossible in some, and when possible, may vary from easily available, to possible only under special circumstances, e.g. when embedded in some larger structure which takes narrow scope with respect to negation.

3.4. Subject-object asymmetries

In the case of subject-object asymmetries, predicted by our putative c-command requirement, we find counterexamples similar to the ones found in the previous section. In some cases, these have already been examined and analyzed in the literature (Linebarger 1980, Uribe-Etxebarria 1993). Linebarger (1980) noted the difference between (59a) and (59b):

(59) a. *Anybody didn't come.

b. A doctor who knew anything about acupuncture was not available.

According to Uribe-Etxebarria, the difference between these two sentences is due to the predicate. In particular, certain "light" predicates such as *available* permit *any* in subject-position. These light predicates must be stage-level, in the sense of Carlson (1978), and

bleached in the sense of Szabolcsi (1986). What is not clear, in this account, is why *come* in (59a) does not qualify as a light predicate in the relevant sense. I agree that the type of predicate is relevant, but I disagree with Uribe-Etxebarria that it is the only factor influencing the grammaticality of *any* in subject position. The difference between (59a) and (59b) has to do with the general differences we found in the previous section between embedded and nonembedded occurrences of NPIs. *Any* in subject or topic position has a self-destructive tendency to scope over negation in the VP, just like its Dutch relative *ook maar iemand*. But when embedded in a larger structure whose requirements are less stringent, *any* may be forced to remain within the scope of negation. It is easy to show that this explanation is on the right track, since (60), a variant of (59b), is out:

(60) *Any doctor who knew anything about acupuncture was not available.

The relevance of the predicates is illustrated by the pair in (61), due to Uribe-Etxebarria (see also Diesing 1992):

- (61) a. A doctor who knew anything about acupuncture was not available.
b. *A doctor who knew anything about acupuncture was not intelligent.

In (61a), negation may take scope over the subject, in (61b), it may not. One might think that the theory of indefinites in Diesing (1992) provides us with a ready explanation of the facts. According to this theory, indefinite subjects of stage level predicates are lowered, at LF, to a position inside the VP, thus bringing them within the scope of negation. Indefinite subjects of

individual-level predicates stay outside the VP, in a position higher than that of negation. However, such an account is not correct. As noted by Uribe-Etxebarria, not all stage level predicates are compatible with *any* in subject position. One of her examples, due to Barbara Partee, is

(62) *A fundamentalist yogi that had any interest in philosophy wasn't lying on the floor.

Although *lie on the floor* is stage-level, the sentence is out. Moreover, we can also find examples of individual-level predicates which permit subject-internal *any*, unlike *be intelligent*. Some good examples are the predicates *exist* and *be lacking*:

- (63) a. A good solution to any of these problems does not exist.
b. A good solution to any of these problems is still lacking.

That we are dealing with individual-level predicates and not with stage-level predicates follows from the fact that bare plurals as subjects yield a generic reading:

- (64) a. Unicorns don't exist.
b. Unicorns are still lacking in this zoo.

I conclude that a Diesing-type account of the contrast in (61) provides neither necessary nor sufficient conditions on the possibilities for NPIs in subject position. I might add that the problems at hand are not restricted to indefinite subjects either. Even in definite subjects,

which for Diesing would be VP-external, we sometimes encounter NPIs, as the following attested examples illustrate:

- (65) a. The "modern perspective" [...] in which nonstandard quantifiers were explored with any thoroughness, did not begin until about the mid 1970s. (L.M. Moxey and A.J. Sanford, *Communicating Quantities*, 7)
- b. With our smaller, more global force, the luxury of having any noncombatant airmen is gone. (From a corpus of Internet-postings)

It is perhaps interesting to note that these examples also pose problems for the account of definiteness intervention effects in Zwarts (1986b) and Szabolcsi and Zwarts (1990). According to this theory, a definite determiner acts as an intervenor for licensing, making it impossible for negation outside a definite NP to trigger an NPI inside the definite NP. A relevant pair of examples to illustrate this claim would be:

- (66) a. I would not kill a man who has ever helped me.
- b. *I would not kill the man who has ever helped me.

While definite NPs are most certainly not the best hosts for NPIs, examples like those in (65) above suggest that the ultimate account of the intervention facts has not been given yet (see also Ladusaw 1979 for pertinent discussion and similar problematic examples).

There are also cases of subject NPIs triggered by VP-internal occurrences of *only*, as the following example (from a corpus of Internet postings) suggests:

(67) However, an Emergency Response lawyer said Wednesday that any such tactics had only been practiced by rogue salespeople who violated company policies.

Note in particular, that *any* here is not free choice, and that the omission of *only* yields an ungrammatical sentence. (For some more discussion of the complicated licensing behavior of *only*, cf. Horn and Lee (1995).)

In the case of sentential subjects, the type of predicate again appears to play an important role. As we have noted before, sentential subjects may contain NPIs. However, there are some clear differences between unaccusative and passive predicates, and other types of predicates (Hoekstra 1991). Consider:

- (68) a. That he would ever succeed had been expected by nobody.
b. That he would ever do a thing like that surprised nobody.
c. *That he would ever do a thing like that proves nothing.

The conclusion must be that in cases of backward triggering, just as in cases of backward binding, the predicate plays an important role, as well as the difference between embedded and non-embedded occurrences of NPIs, and the type of trigger. The type of predicate that allows backward triggering has not been defined with any precision yet. Existing proposals are still too vague and fraught with counter-examples when confronted with corpus data. Existing theories of indefinites are as yet too much focussed on ordinary indefinites to be of any help in this area. Somewhat surprising is also the possibility of NPIs in definite subjects.

3.5. VP-internal asymmetries

Inside the verb phrase, numerous asymmetries in licensing possibilities have been pointed out in the literature. For example, the following pair of contrasting examples was noted in Barss and Lasnik (1986):

- (69) a. I gave no one anything.
b. *I gave anyone nothing.

Larson (1988) and others have taken this as evidence that the indirect object occupies a higher structural position than the direct object. In that case, asymmetric c-command would correctly predict the contrast in (69).

Similar examples can be adduced for Dutch:

- (70) a. Ik gaf niemand ook maar iets.
I gave nobody even anything
b. *Ik gaf ook maar iemand niets.
I gave even anybody nothing

The observation is robust. I have not found any data in my extensive data-base of naturally-occurring NPIs that militate against it, but it seems to me, nonetheless, possible to construct examples in Dutch which are potentially problematic. Consider for example the pair in (71):

(71) a. Ik geef de student die ook maar □□n tentamen verzuimt geen enkele kans.

I give the student who even one examination skips no single chance

"I don't give the student who misses so much as one exam a chance"

b. *Ik geef de student die ook maar □□n tentamen verzuimt een kans.

I give the student who so much as one exam skips a chance

Note that the direct object in (71a) is a case of a nonreferential definite which is somehow licensed by the presence of negation, as the contrast with (71b) shows. It may be debatable whether negation directly triggers *ook maar □□n* here, or whether we should treat the nonreferential definite as a kind of universal, thus licensing the NPI in the relative clause, while negation somehow is responsible for the acceptability of the nonreferential definite.

In general, triggers precede NPIs in the VP. However, there are important exceptions to this generalization. In Dutch, adverbial NPIs of various types may, and sometimes even must, precede negation. Consider for instance the class of items of the form *in X*, where *X* is a plural temporal noun: *in dagen* 'in days', *in weken* 'in weeks', *in maanden* 'in months', *in jaren* 'in years', *in tijden* 'in times = in ages'. Here we find the following paradigm:

(72) a. Ik heb hem in jaren niet gezien.

- I have him in years not seen
 "I haven't seen him in years"
- b. Ik heb hem in geen jaren gezien.
 I have him in no years seen "id."
- c. *Ik heb hem niet in jaren gezien
 I have him not in years seen "id."
- d. *Ik heb hem niet gezien in jaren
 I have him not seen in years "id."
- e. *Ik heb hem in jaren gezien.
 I have him in years seen
 "*I have seen him in years"

(The last example was added to illustrate that the polarity item *in jaren* depends on negation for its acceptability.) The next set of examples shows that *in jaren* may be preceded and c-commanded in cases of higher negation, and that it may be topicalized, but not long-distance.

- (73) a. Ik geloof niet dat ik in jaren zo gelachen heb.
 I believe not that I in years so laughed have
 "I don't believe I have laughed as much in years"
- b. In jaren heb ik niet zo gelachen.
 in years have I not so laughed
 "I haven't laughed like that in years"
- c. *In jaren geloof ik niet dat ik zo gelachen heb.

In years believe I not that I so laughed have

"In years, I don't believe I have laughed as much"

In English, it appears, both types of topicalization are out with this type of NPI, and I have not found a single instance in years of checking through corpora. This is a bit surprising, because temporal *in*-PPs belong to the most commonly topicalized elements of English:

- (74) a. *In years, I haven't seen her.
b. In 1969, I was still in elementary school.
c. In the future, we will not make this mistake again.

I do not know what causes this difference between Dutch and English in this particular case.

Turning now to a different case, consider the following example involving right-to-left triggering in the English VP:

- (75) A resemblance between genitive and relative marking is even reconstructible for Indo-European, though it is rare in the Indo-European descendant languages, appearing with any regularity only in Iranian. (Anthony Aristar, *On the Syntactic Incorporation of Linguistic Units*)

This example is problematic (1) for precedence conditions on the triggering of *any* (cf. Jackendoff 1972, Ladusaw 1979), (2) for c-command conditions on triggering in theories such as that of Kayne (1994) which assume that left-right order corresponds with asymmetric

c-command and (3) for the claim in Progovac (1994) that VP-internal *only* never acts as a trigger for *any*. (The same could be said about example (61) above.)

In recent syntactic literature, much attention has been paid to the phenomenon of scrambling, especially with regard to such languages as German and Dutch. Scrambling can be described as word order variation in the VP, often analyzed as leftward movement of noun phrases and other VP constituents. It turns out that there are some interesting asymmetries here between scrambling of predicate nominals and object NPs. When predicate nominals are definite, they may appear on either side of the negative adverb *niet*. Definite objects standardly appear to the left, but definite NPI-objects do not. In the following examples, I contrast two NPIs, *de eerste de beste* (which is only an NPI when used as a predicate nominal, not otherwise) and *de minste N`the least/slightest N'*:

- (76) a. Fred is niet de eerste de beste.
fred is not the first the best
"Fred is not just anyone"
- b. Fred is de eerste de beste niet. "id"
- c. Fred had niet de minste belangstelling.
fred had not the least interest
"Fred did not have the slightest interest"
- d. *Fred had de minste belangstelling niet. "id"

The same pattern of judgments is found when we look at topicalization, rather than scrambling:

- (77) a. De eerste de beste is hij niet.
 the first the best is he not
 "He is not just anyone"
- b. *De minste belangstelling had hij niet.
 the least interest had he not
 "He did not have the slightest interest"

The relevant distinction here appears to be that of scope-bearing versus scopeless NPI. Predicates are scopeless in the sense that they do not engage in scope ambiguities, whereas quantificational superlative NPIs are scope-bearing (Fauconnier 1975). Only scopeless NPs freely scramble across negation. Note that the NPI data are paralleled here by similar data involving quantified expressions:

- (78) a. Jan is niet iedereen's vriend. (scopeless: 72a / 72b)
 Jan is not everybody's friend
- b. Jan is iedereen's vriend niet.
 Jan is everybody's friend not
- (79) a. Jan kent niet iedereen's vriend. (narrow scope universal)
 Jan knows not everybody's friend
- b. Jan kent iedereen's vriend niet. (wide/narrow scope universal)

With the predicate nominals in (78), scrambling does not matter for the assignment of scope, but for the direct objects in (79), scrambling makes available a wide scope reading for the universal quantifier that is otherwise not present. This, then, bolsters our claim that scopelessness is a plausible property of predicate nominals, allowing them to scramble or topicalize in cases where otherwise similar object-NPIs may not be scrambled or topicalized.

3.6. Specifiers and C-command

It is well-known that specifiers of noun phrases act as triggers outside the NP:

(80) Nobody's contribution made any difference.

Ordinarily, the quantifier *nobody('s)* in the example above is not believed to c-command elements in the VP: the first branching or maximal-projection node dominating it is NP (or DP, depending on terminology), and hence the c-command domain of *nobody* is limited to just the subject noun phrase. Kayne (1994) has used similar examples to argue for a revision of c-command, in line with his *Asymmetry*-program in which linear precedence and asymmetrical c-command are one and the same thing. According to Kayne's version of c-command (the details of which will not concern us here), in conjunction with his assumption that specifiers are adjoined to maximal projections, a specifier of XP may c-command whatever the XP c-commands. Examples such as (80) seem to offer excellent motivation for such a step. However, it is by no means clear that this line of reasoning is compelling.

First of all, we need to consider whether the trigger in (80) is indeed *nobody*, as Kayne suggests, or whether it could be the entire NP, *nobody's contribution*. As Hoekstra (1991 and elsewhere) has pointed out, if we take the latter position, there is no problem with the standard definition of c-command. Using a simple test for monotonicity, we can show that the entire NP is downward entailing. The test is whether a substitution of this NP in the following schema yields a valid inference:

(81) NP VP₁ or VP₂ ⊆ NP VP₁

The idea here is that if we can replace a disjunction by one of the disjuncts *salva veritate*, we replace a more general by a more specific term, which is valid only in downward entailing contexts. In other contexts, such inferences are invalid. For instance, from *John ate or drank* we cannot infer that John ate. In (82) below, we see that both *nobody* and *nobody's contribution* yield valid inferences of this type:

- (82) a. Nobody ate or drank ⊆ Nobody ate
 b. Nobody's contribution saved the country or served the poor ⊆
 Nobody's contribution saved the country

Hence according to Ladusaw's (1979) characterization of triggers, both *nobody* and *nobody's contribution* are triggers, and so (80) is not a problem for c-command. Now some might still find Kayne's proposal more attractive, since it seems to promise an entirely syntactic

treatment of NPI-triggering. If we assign a syntactic neg-feature to *nobody* and follow Kayne, we need not worry, it appears, about monotonicity or other semantic properties.

Note however that even if we accept Kayne's reasoning, there is still another problem. Not just specifiers seem to take scope over more than just the NP, but, as Kayne (1994: 25) notes, PPs sometimes exhibit the same behavior:

(83) ?The author of no linguistics article ever wants it to go unread.

This example, which Kayne finds partially acceptable but noncolloquial, leads him to suggest that "the object of a postnominal *of* can to some extent be moved to Spec, DP in LF". After this movement, the quantifier is in a position to trigger the NPI. While this may be a reasonable suggestion, given that *of*-PPs and genitival specifiers have much in common, there is still the problem that other types of PP exhibit similar behavior. For example the following sentences

(84) a. ?The key to none of these problems has ever been obvious.

b. *A party with no friends is ever fun.

I take (84a) to be about as acceptable as Kayne's example (83). Some PPs, it seems, allow the quantifier to have wide scope, others don't. In both cases, movement of the prepositional object to Spec, DP would be an ad hoc move, and in the second case, it would also be an unwelcome move, as it would falsely predict grammaticality of the NPI-occurrence.

At any rate, examples such as (83) and (84a) are sufficient to show that c-command at surface structure is not going to do the job.

3.7. Connectedness Effects

So-called connectedness effects in pseudo-clefts are a problem for syntactic theories of NPI-triggering (Higgins 1979, Heycock and Kroch 1996). The trigger appears in the WH-clause, whereas the NPI occurs outside of that clause, thus violating not just c-command, but even the more liberal command condition of Jackendoff (1972). Some examples from my corpus of Internet postings are

- (85) a. What is not required, however, is that we know all, or indeed, any of the particular properties a lesbian relationship requires, since a definition is not our goal.
- b. What was missing was any real interest in the murk and challenge of the real world.

In (85a), the trigger of *any* is the first occurrence of *not*, in (85b), it is the negative predicate *missing*. There is no standard solution to this problem in a purely syntactic framework. The negative elements simply do not c-command the NPIs. From a semantic point of view, however, these examples are unproblematic, if we consider the (truth-functional) equivalence of these pseudo-clefts to simpler (non-cleft) structures in which the NPIs are in the scope (albeit not necessarily in the c-command domain) of their triggers:

- (86) a. That we know all, or indeed, any of the particular properties a lesbian relationship requires, is not required [..]
- b. Any real interest in the murk and challenge of the real world was missing.

Apart from pseudo-clefts, there are other predicational structures which similarly exhibit triggering across the copula. In the same corpus, I found the following sentence:

- (87) Another equally incredible omission in Steve Talbot's documentary is any mention of the timber corporations in whose interest I was bombed.

Even if we identify *omission* in (87) as the trigger of *any*, we would be at a loss to explain the grammaticality of this sentence, if we could not appeal to the special properties of the copula.

In a noncopular construction like (88), *any* is not licit:

- (88) *Another equally incredible omission in Steve Talbot's documentary caused any mention of the timber corporations in whose interest I was bombed.

However, in the case of (87), we must note that the sentence is equivalent to one in which *any mention* is a direct complement of *omission*:

- (89) The omission of any mention of the timber corporations in Steve Talbot's documentary is equally incredible.

I take it that this semantic equivalence, rather than its syntactic structure, is what is responsible for the grammaticality of (87).⁸

4. Conclusions

⁸ Connectivity effects do not salvage all cases of polarity items in pseudo-cleft constructions. In particular, bare polarity items are not usually acceptable in these contexts:

- (i) *What John did not have was anything.

Pragmatic factors can probably explain such data. Note that *something* in lieu of *anything* would be equally odd here, so we may infer that the illformedness of (i) is not directly due to polarity licensing itself, but to some violation of the pragmatic conditions on pseudoclefts. In particular, it would seem that the pseudocleft in (i) requires a partitioning of the context such that there are two non-empty sets, one containing John's possessions, and one containing what he does not own (the latter would typically be new information). *Anything*, which ranges over all objects, is not compatible with such a bipartition. As soon as a modifier is added, the result becomes well-formed:

- (ii) What John did not have was anything made out of plastic.

De Swart (1998) has noted a similar pragmatic condition on the preposing of polarity-sensitive indefinites within the scope of negation, which cause embedded NPIs to be more easily topicalizable than their unembedded counterparts, cf. contrasts like the following:

- (iii) A doctor with any knowledge of acupuncture I did not meet.
(iv) *Anyone I did not meet.

While (iii) allows for a contrast with other doctors who I did meet, (iv) does not support such a contrast.

The main conclusions of this paper are:

- (1) There is no evidence for a general and purely syntactic constraint on polarity licensing which requires a polarity item to be c-commanded by its trigger. We have examined problems in areas such as conjunction, topicalization, subject/object asymmetries, VP-internal positions, NP-specifiers and adjuncts, and predicational structures (including pseudo-clefts).
- (2) There are difference between various classes of polarity items (even within one language), concerning the positions in which and from which they may be triggered.
- (3) As a corollary of (2), a weakening of the c-command requirement along parametric lines, as suggested by Mahajan (1990), is still too strong. According to Mahajan, some languages require c-command at Surface Structure, others at Logical Form. However, we have given evidence that within one language, different items may have different requirements.
- (4) There is often a close connection between triggering and scope, in particular for scope-bearing elements such as indefinites. Even when an indefinite NPI may appear outside the c-command domain of its trigger, it is still within the latter's semantic scope. In Dutch and German, elements such as predicates, which do not engage in scopal ambiguities, are not as sensitive to scope, and may undergo long-distance as well as local topicalization.
- (5) Recent theories of indefinites, such as the one in Diesing (1992), do not provide a ready solution for the problems of NPI-licensing. NPI-indefinites may act in a different way

than other indefinites, sometimes requiring wider scope, even when this leads to ungrammaticality.

(6) This paper does not provide evidence against a c-command constraint holding at some sufficiently abstract level of LF. It should be clear from a perusal of the data presented here that the kind of LF that would be required is by no means easily derivable from some syntactic parse tree.

(7) Given the many complications surrounding the putative c-command requirement, it is extremely hazardous to base proposals regarding phrase structure or revised definitions of c-command on NPI data.

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