

On the Lexical Status of Negative Indefinites in Dutch and German

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Abstract:

Negative Indefinites (NI's) in languages such as Dutch and German may give rise to split scope readings. Sentences like German *Du must keine Krawatte anziehen* ('you must wear no tie') come along with a reading where the modal takes scope in between the negation and the indefinite. In this paper I argue that Dutch and German NI's are not negative quantifiers (in the Montegovian sense), but complex lexical items that consist of an indefinite and an abstract negative operator. Split scope effects are derived as a result of the copy theory of movement. I argue that in split-scope constructions after Quantifier Raising the negative operator is interpreted in a higher copy and the indefinite in a lower copy of the NI. Furthermore I demonstrate that alternative analyses that take NI's in Dutch and German to be negative quantifiers, n-words or to be resulting from amalgamation or incorporation processes face problems that the lexical analysis presented in this paper does not encounter.

1. Introduction

Negative Indefinites (NI's), such as English *nobody*, *nothing* or *no boy*, are generally considered to be generalized quantifiers that are semantically negative:

- (1) [[nobody]] = $\lambda P. \neg \exists x[\mathbf{body}'(x) \ \& \ P(x)]$ or equivalently
 [[nobody]] = $\lambda P. \forall x[\mathbf{body}'(x) \rightarrow \neg P(x)]$

However, two different phenomena challenge this view. The first has been extensively discussed in the literature and is known as Negative Concord; the second involves split-scope readings of NI's, where the negative and the indefinite part of NI take scope independently of each other. This will be the main topic of the paper.

In most Germanic languages two negative elements yield an affirmative as is shown in (2b). They are therefore called Double Negation languages.

- (2) a. Nobody calls
 $\neg \exists x[\mathbf{body}'(x) \ \& \ \mathbf{call}'(x)]$
 b. Nobody says nothing.
 $\neg \exists x \neg \exists y[\mathbf{body}'(x) \ \& \ \mathbf{thing}'(y) \ \& \ \mathbf{say}'(x, y)] =$
 $\forall x \exists y[\mathbf{body}'(x) \ \& \ \mathbf{thing}'(y) \ \& \ \mathbf{say}'(x, y)]$

But in many languages this is not the case. In Romance and Slavic languages for instance multiple negative elements contribute one semantic negation only. This phenomenon is called Negative Concord.

- (3) a. Non telefona nessuno Italian
 NEG calls n-body
 1. $*\neg \neg \exists x[\mathbf{body}'(x) \ \& \ \mathbf{call}'(x)] = \exists x[\mathbf{body}'(x) \ \& \ \mathbf{call}'(x)]$
 2. $\neg \exists x[\mathbf{body}'(x) \ \& \ \mathbf{call}'(x)]$

- b. Nessuno dice niente
N-body says n-thing
1. $*\neg\exists x\neg\exists y[\mathbf{body}'(x) \& \mathbf{thing}'(y) \& \mathbf{say}'(x, y)]$
= $\forall x\exists y[\mathbf{body}'(x) \& \mathbf{thing}'(y) \& \mathbf{say}'(x, y)]$
2. $\neg\exists x\exists y[\mathbf{body}'(x) \& \mathbf{thing}'(y) \& \mathbf{say}'(x, y)]$
- (4) a. Nevolá nikdo Czech
NEG.calls n-body
1. $*\neg\neg\exists x[\mathbf{body}'(x) \& \mathbf{call}'(x)] = \exists x[\mathbf{body}'(x) \& \mathbf{call}'(x)]$
2. $\neg\exists x[\mathbf{body}'(x) \& \mathbf{call}'(x)]$
- b. Nikdo nedá nikomu nic
N-body NEG.gave n-body n-thing
1. $*\neg\exists x\neg\neg\exists y\neg\exists z[\mathbf{body}'(x) \& \mathbf{body}'(y) \mathbf{thing}'(z) \& \mathbf{give}'(x, y, z)]$
= $\forall x\forall y\exists z[\mathbf{body}'(x) \& \mathbf{body}'(y) \& \mathbf{thing}'(z) \& \mathbf{give}'(x, y, z)]$
2. $\neg\exists x\exists y\exists z[\mathbf{body}'(x) \& \mathbf{body}'(y) \mathbf{thing}'(z) \& \mathbf{give}'(x, y, z)]$

Hence, the treatment of negative indefinites as negative quantifiers in (1) faces problems for so-called Negative Concord languages. Because of data such as (3) and (4) many scholars have proposed that NI's in Negative Concord languages, such as Italian *nessuno* 'n-body' or *niente* 'n-thing', are not negative quantifiers, but semantically non-negative indefinites that stand in some relation with a (possibly abstract) negative operator (Ladusaw 1992, Giannakidou 1997, Zeijlstra 2004), thus arguing against analyses that take all NI's to be negative quantifiers (cf. Haegeman 1995, Haegeman & Zanuttini 1996, De Swart & Sag 2002).

The question whether NI's should be regarded as negative quantifiers has however extended to many Double Negation languages, such as Dutch and German. So-called split-scope constructions as illustrated in (5) are also problematic for analyses of negative indefinites in terms of negative quantifiers.

- (5) Du musst keine Krawatte anziehen German
You must no tie wear
- a. 'It is not required that you wear a tie' $\neg > \text{must} > \exists$
- b. 'There is no tie that you are required to wear' $\neg > \exists > \text{must}$
- c. 'It is required that you don't wear a tie' $\text{must} > \neg > \exists$

In (5) the most salient reading is the one where the negation outscopes the modal auxiliary, which on its turn outscopes the indefinite. Note that readings where the entire NI has wide or narrow scope with respect to the modal verb are also available.

The central aim of this paper is to show that split-scope constructions as in (5) are best analysed by taking that NI's in languages such as Dutch and German not to be negative quantifiers, but complex Lexical Items (LI's) that consist of two different semantic objects: a negative operator and an indefinite. Under this analysis the meaning of an NI is in most cases equivalent to the meaning of a negative quantifier, but this analysis accounts for split-scope interpretations as well.

After introducing the relevant data in the next section, I present an analysis of NI's in Double Negation languages and apply it to the problematic cases. This analysis is then compared to previous accounts (section 4). In this section I demonstrate that analyses that attempt to take NI's to be negative quantifiers face serious problems, as do analyses that take

NI's in Dutch and German to be n-words, not much differently from n-words in Negative Concord languages. Section 5, finally, concludes.

2. Data

In this section I discuss a phenomenon occurring in Dutch and German that challenges the view that NI's in these languages are negative quantifiers. This phenomenon was first noted in Bech (1955/57) and later discussed a.o. in Jacobs (1980) for German and Rullman (1995) for Dutch. It is sometimes referred to as scope-splitting since in the semantics the negation and the indefinite meaning component of NI's take scope independently of each other. This can be seen in some environments where the negation can take wide scope over some operator, while the indefinite meaning component has narrow scope. A split reading is generally available for NI's embedded under modal or object intensional verbs and with NI's in idiomatic expressions.

2.1 *Modal Verbs*

Consider the following German example in which an NI is embedded under a modal verb:

- | | | |
|-----|--|--|
| (6) | Du musst keine Krawatte anziehen
You must no tie wear
a. 'It is not required that you wear a tie'
b. 'There is no tie that you are required to wear'
c. 'It is required that you don't wear a tie' | German

$\neg > \text{must} > \exists$
$\neg > \exists > \text{must}$
$\text{must} > \neg > \exists$ |
|-----|--|--|

The most salient reading of this sentence is paraphrased in (6)a. As can be read off from this paraphrase, the negation has wide scope over the modal, whereas the indefinite has narrow scope. This reading, however, cannot be derived under the assumption that the NI *keine Krawatte* is a plain negative quantifier. The only readings the negative quantifier analysis derives are the ones paraphrased in (6)b and (6)c. In (6)c, the NI is interpreted with surface scope and both the negation and the indefinite have narrow scope with respect to the modal. This reading, equivalent to 'you are not allowed to wear a tie', is hard to get, and available only with lots of help from the context, because there is a strong tendency in German that negation outscopes modals (see de Haan (1997)). The only way the modal gets in the scope of the negation is LF-movement of the negative quantifier across the modal, resulting in reading (6)b, in which both the negation and the indefinite outscope the modal. But the wide scope reading has weak truth conditions: (6)b is true iff there is no specific tie that you are required to wear. This does not exclude that the occasion under discussion might require that you were some tie or other. This is contrary to intuitions, according to which the sentence in (6) rejects that ties are obligatory. The same line of argumentation carries over to the following Dutch example (from Rullman 1995: 194):

- | | | |
|-----|---|--|
| (7) | Ze mogen geen verpleegkundige ontslaan
They may no nurse fire
a. 'They are not allowed to fire any nurse'
b. 'There is no nurse who they are allowed to fire'
c. 'They are allowed not to fire a nurse' | Dutch

$\neg > \text{may} > \exists$
$\neg > \exists > \text{may}$
$\text{may} > \neg > \exists$ |
|-----|---|--|

The case for the split scope reading can be made even stronger. In the context of expletive *es* ('there') an indefinite embedded under a modal can only take narrow scope:

- | | | |
|-----|---|------------------|
| (8) | Es muss ein Arzt anwesend sein
there must a physician present be | German |
| | a. 'It is required that there be a physician present.' | must > \exists |
| | b. *'There is a physician who is required to be present.' | \exists > must |

Similarly, an NI embedded under a modal in a *there*-insertion context cannot take scope above the modal. But in the salient reading, the negation nevertheless outscopes the modal.

- | | | |
|-----|---|---------------------------|
| (9) | Es muss kein Arzt anwesend sein
There must no physician present be | |
| | a. 'It is not required that there be a physician present' | \neg > must > \exists |
| | b. *'There is no physician who is required to be present' | \neg > \exists > must |
| | c. 'It is required that there be no physician present.' | must > \neg > \exists |

And even stronger, if (9) contains a modal verb that is a Negative Polarity Item, which therefore requires narrow scope with respect to negation, the split scope reading is the only available one, as shown below:

- | | | |
|------|--|---------------------------|
| (10) | Es braucht kein Arzt anwesend zu sein.
There needs no physician present to be | |
| | a. 'It is not required that there be a physician present' | \neg > need > \exists |
| | b. *'There is no physician who is required to be present' | \neg > \exists > need |
| | c. *'It is required that there be no physician present' | need > \neg > \exists |

These considerations show that the salient reading cannot be somehow derived from the wide or narrow scope reading of a negative quantifier, thereby confirming that scope splitting of NI's is real.

2.2 Object Intensional Verbs

Scope splitting also occurs when an NI is the object of a transitive intensional verb like *seek* or *owe*, as demonstrated in the following examples for German and Dutch, respectively.

- | | | |
|------|--|---------------------------|
| (11) | Perikles schuldet Socrates kein Pferd
Perikles owes Socrates no horse | German |
| | a. 'Perikles is not obliged to give Socrates a horse' | \neg > owe > \exists |
| | b. 'There is no horse that P. is obliged to give to Socrates' | \neg > \exists > owe |
| | c. *'Perikles is obliged not to give Socrates a horse' | owe > \neg > \exists |
| (12) | Hans zoekt geen eenhoorn
Hans seeks no unicorn | Dutch |
| | a. 'Hans is not trying to find a unicorn' | \neg > seek > \exists |
| | b. 'There is no unicorn Hans is trying to find' | \neg > \exists > seek |
| | c. *'Hans is trying not to find a unicorn' | seek > \neg > \exists |

As before, the split scope reading paraphrased in (a) is the salient one. Under intensional verbs, the narrow scope reading (c) is not available at all. While the wide scope reading (b) is possible, it has weak truth conditions. (12)b for instance is true if unicorns do not exist in the evaluation world, independently of Hans' activities.

2.3 *Idiomatic expressions*

Finally, in German and Dutch idioms involving an indefinite are generally negated by replacing the indefinite with an NI. The negation then refers to the idiom as such (see (13)-(14)).

- | | | | |
|------|----|---|--------|
| (13) | a. | Hans hat mir einen Bären aufgebunden
Hans has me.DAT a bear up-tied
'Hans has fooled me' | German |
| | b. | Hans hat mir keinen Bären aufgebunden
Hans has me.DAT no bear up-tied
'Hans hasn't fooled me' | |
| (14) | a. | Hij heeft een scheve schaats gereden
He has a diagonal skate riden
'He made a mistake' | Dutch |
| | b. | Hij heeft geen scheve schaats gereden
He has no diagonal skate riden
'He didn't make any mistake' | |

Occurrences of NI's in idioms themselves are a problem for the negative quantifier analysis. But what is important for the present discussion is the fact that NI's in idioms also lead to split readings when they are embedded under modal verbs:

- | | | |
|------|--|--------|
| (15) | Mir kannst du keinen Bären aufbinden
me.DAT can you no bear up-tie
'You can't fool me' | German |
| (16) | Hij mag geen scheve schaats meer rijden
He may no diagonal skate ride
'He is not allowed to make anymore mistakes' | Dutch |

2.4 *Concluding remarks*

The data presented above indicate that whenever a NI can take wide or narrow scope with respect to some particular operator, a third reading is available where the negation takes wide scope and the indefinite takes low scope. These data are problematic for the assumption that NI's are negative quantifiers, since without adopting additional machinery a treatment of NI's as negative quantifiers cannot account for this third type of readings.

In this paper I offer an alternative explanation of NI's, arguing that they are complex LI's that consist of both a negative operator and an indefinite. However, De Swart (2000) has shown that scope-splitting is not restricted to NI's but generally applies to monotone decreasing DP's (see (17)).

(17)	Ze hoeven weinig verpleegkundigen te ontslaan They need few nurses to fire	Dutch
a.	'They are required to fire few nurses'	$\neg > \text{need} > \exists$
b.	'There are few nurse who they are need to fire'	$\neg > \exists > \text{need}$
c.	*'They need to fire few nurses'	$\text{need} > \neg > \exists$ ¹

Data like (17) at first sight call for a unified analysis of split-scope readings, but as Penka (2007) following Heim (2006) convincingly argued for, other monotone decreasing expressions invoke split-scope readings for independent motivations, most notably because of an internal degree modifier. For that reason the split-scope readings other monotone decreasing DP's than NI's is already accounted for and does not require additional explanation.

3 Analysis

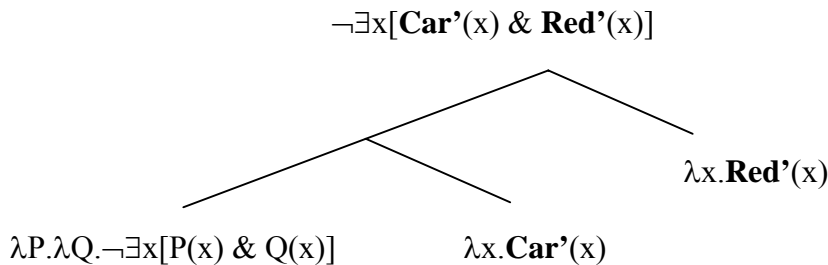
The fact that the negative and the indefinite part of an NI in Double Negation languages such as Dutch and German may take scope from different positions is thus in need for an explanation. In this section I formulate a proposal that accounts for this problem. In short, I propose that in Double Negation languages NI's can be complex lexical items consisting of an abstract negative operator and a non-negative indefinite. Hence, the relation between the indefinite and Op_{\neg} is lexically fixed and the two elements enter the syntactic derivation together.

In subsection 3.1 I elaborate this proposal in more detail and in the subsequent subsections I demonstrate how the different possible readings can be derived for the NI's in the environments discussed in section 2: modal verbs (3.2), intensional verbs (3.3) and idiomatic expressions. Subsection 3.4 contains some concluding remarks.

3.1 NI's as complex lexical items

It is often assumed that NI's lack an internal syntactic structure and that an NI is a simple lexical item. In other words, the semantics of an NI is that of a negative quantifier and its semantic force is induced from one point in the syntactic structure. A simplified illustration is given in (18).

(18) No car is red

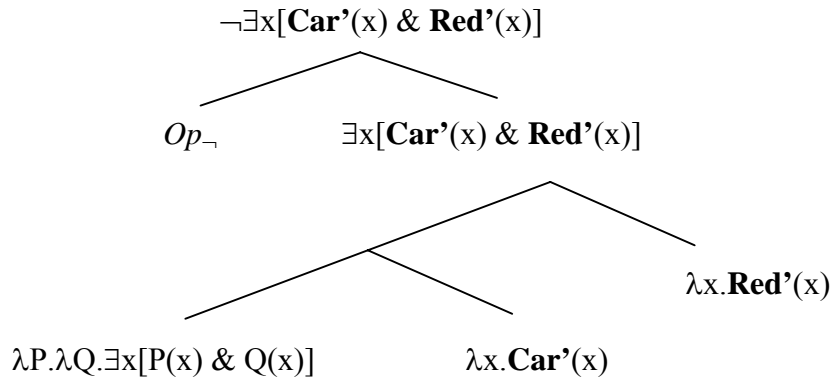


However, there is no reason to assume that the structure in (18) is the only way to generate the meaning of a construction containing an NI. Moreover, although from a morphosyntactic perspective (18) consists of three lexical elements (not taking the copula into account), on the

¹ Note that this reading is unavailable because Dutch *hoeven* ('need') is a negative polarity item.

semantic level it exhibits at least four distinct objects: the predicates *car* and *red*, the indefinite and the negation. From this semantic point of view it seems far from unnatural to assume that all these objects express their semantic force from a different point in the syntactic structure, as shown in (19). Since (19) yields exactly the same reading as (18), NI's do not have to be negative quantifiers: they can also be semantically non-negative, as long as there is some syntactic device that forces a negative operator to enter the derivation simultaneously.

(19) No car is red



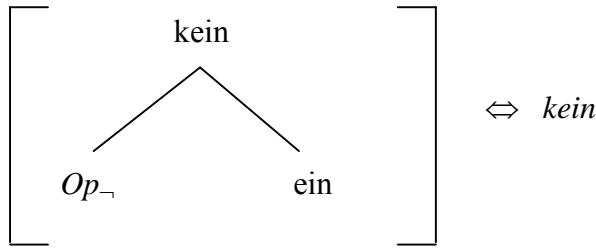
The main difference between (18) and (19) is that the indefinite and the negative operator occupy different positions in the structure. Consequently, the structure in (19), contrary to the structure in (18), does not exclude other material to intervene between the position of the negative operator and the indefinite. How the structure in (19) is derived will be the topic of this section.

The more complex structure in (19) immediately raises two questions. First, how does it follow from the structure in (19) that the two different nodes, the negation and the indefinite, are realized as one phonological object? Second, what is the relation between the negation and the indefinite? In Double Negation languages the relation between the negation and the indefinite is always 1:1 (as opposed to Negative Concord languages, where according to many scholars one negation may license multiple indefinites). Hence it needs to be accounted for how it is possible that the two parts of the NI form one unit while simultaneously occupying two different structural positions.

In order to address these questions, I propose that the complex structure of NI's is already realised within the lexicon. Hence, rather than merging with an atomic object, the derivation is expanded with a piece of structure that has already been prefabricated in the lexicon. Now, the two problems immediately vanish: first, the fact that the complex structure receives one phonological realisation follows from the fact that the phonological features are mapped on the Lexical Item (LI) as such; second, the fact that the relation between the negative operator and the indefinite is 1:1 is already determined within the lexicon. Licensing of indefinites by a negative operator can only take place within the lexicon and therefore every NI includes the presence of a negative operator (Op_{\neg}).

Given these considerations I argue that NI's in languages such as Dutch and German are complex LIs that consist of a negative and an indefinite part. An example is given in (20) for German *kein* 'no'.

(20) Structure of LI *kein*:²



Before addressing the issue of how the structure in (19) is derived, I will first look at the consequences on the lexical, syntactic and semantic level of the assumption that NI's are complex LIs. On the lexical level it means that an NI is a structurally complex element rather than an atomic element. Note that this does not mean that all properties of the LI are necessarily mapped on one of its components. The phonological features of the NI for example belong to the LI as such, as well as its other formal features (such as its [Q] features). On the syntactic level the NI is a piece of syntactic structure that enters the derivation as a unit. Note that the NI forms one syntactic constituent that can be subject to syntactic operations such as Move. Finally, on the semantic level the negative operator (Op_{\neg}) and the indefinite are two distinct semantic objects. This implies that, whereas the other grammatical components (phonology, syntax) respect the lexical integrity of the NI, semantics is blind to it.

The different status of NI's with respect to syntax and semantics now enable us to derive a structure like that in (19) and thus get the split-scope reading. In the next subsection I demonstrate how the different readings of sentences consisting of a modal verb and an NI follow. In the section thereafter I show in a similar fashion how the different readings come about in sentences with an object intensional verb.

3.2 Deriving the split-scope readings: modal verbs

Let us reconsider the data in (6) and (7) ((6) is repeated as (21) below, abstracting away from V2 movement). The sentence has three readings, paraphrased in (21)1-3, with the first one being the most salient.

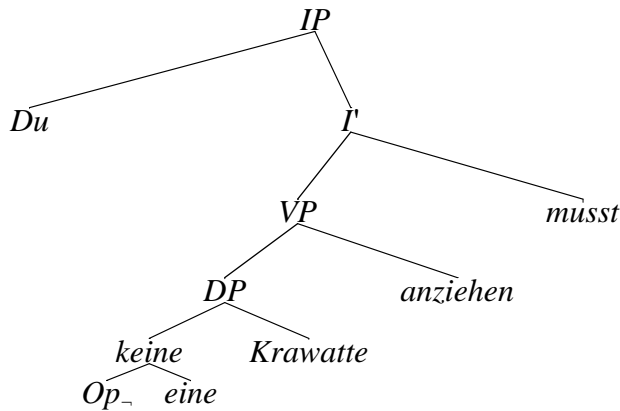
- (21) ...dass du keine Krawatte anziehen musst
 ...that you no tie wear must
- | | |
|--|--------------------------------|
| 1. '... that it is not obligatory that you wear a tie' | $\neg > \text{must} > \exists$ |
| [Op_{\neg} [_{IP} you [_I must [_{VP} a tie [_V wear]]]]] | |
| 2. '... that there is no tie that you must wear' | $\neg > \exists > \text{must}$ |
| [Op_{\neg} [a tie [_{IP} you [_I must [_{VP} wear]]]]] | |
| 3. '... that it is obligatory that you don't wear a tie' | $\text{must} > \neg > \exists$ |
| you [_I must [_{VP} Op_{\neg} a tie [_V wear]]] | |

Let us first consider the base-generated structure, where the NI *keine Krawatte* 'no tie' is merged with the verb, which on its turn merges with the modal verb *musst* 'must', under the

² Note that under this analysis negation has to have a flexible type of the form $\langle \alpha, \alpha \rangle$, whereby α is a semantic type, as has been suggested by e.g. Van der Wouden (1994).

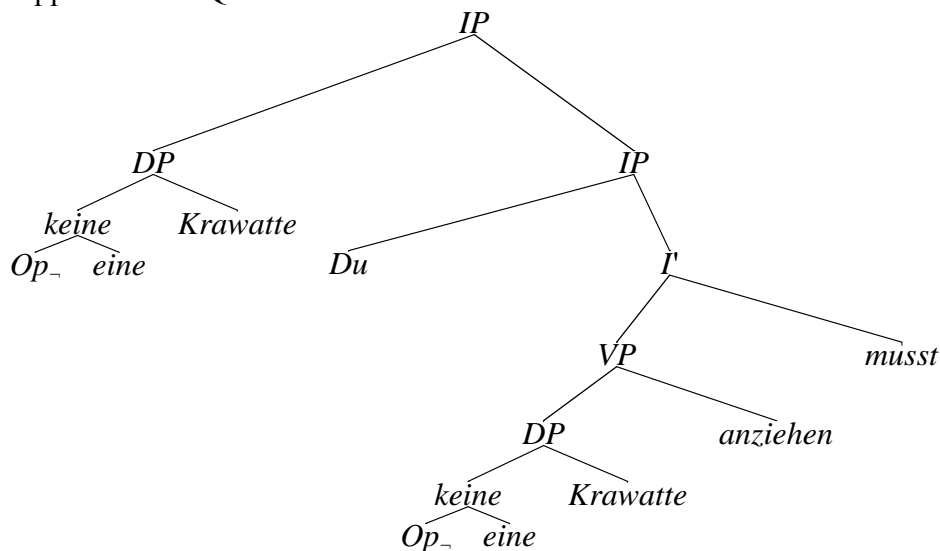
standard assumption that modal verbs are base-generated in I^0 . Finally the subject merges and IP is created.³

(22) Base-generated structure of (21):



This base-generated structure already yields the narrow-scope reading (21)-3, where both the negation and the indefinite are in the scope of the modal verb. Now, the object is allowed to move to a higher position under QR to get wide scope. We adopt the copy and deletion theory of movement (Chomsky 1995) that creates a copy of the object raising under Quantifier Raising (QR) while the original element is subject to deletion. This is illustrated in (23).

(23) Application of QR:



The structure in (23) contains two identical copies of the syntactic object [$Op_$ eine Krawatte], with the lower copy being interpreted phonologically, and the higher copy being interpreted semantically. The interpretation of the higher copy of this object yields the reading in which both the negation and the indefinite outscope the modal verb. The LF of this structure is given in (24).

³ The exact position where the subject is base-generated (Spec,vP or Spec,IP) is irrelevant for the present discussion.

(24) $[_{IP} [_{Op-} \text{eine Krawatte}]_i [_I [_{VP} \text{du} [_{Op-} \text{eine Krawatte}]_i \text{anziehen}]] \text{musst}]]$

However, I have argued that on a semantic level, the NI is not an atomic object. Given that Op_{-} and the indefinite are different semantic objects, it is not required that both are interpreted in one and the same copy. In other words, under this approach it is possible that the semantic component interprets the negative operator within *keine Krawatte* in the higher copy and the indefinite in the lower copy.⁴ This yields the LF in (25).

(25) $[_{IP} [_{Op-} \text{eine Krawatte}]_i [_I [_{VP} \text{du} [_{Op-} \text{eine Krawatte}]_i \text{anziehen}]] \text{musst}]]$

The reading that (25) yields is exactly one in which the negation outscopes the modal verb, whereas the modal verb on its turn outscopes the indefinite: the split-scope reading. The assumption that NI's are lexically complex, in accordance with the copy theory of movement, correctly predicts the fact that a sentence like (21) gives rise to (at least) three readings, including the split-scope reading.

A potential problem for this analysis is that it seems to overgeneralise. In principle nothing would prevent the semantic component to interpret the indefinite in the higher copy and the negative operator in the lower one, yielding a reading that is not possible for NI's. We argue however that this reading cannot be yielded on independent grounds. A general constraint of movement in German and Dutch is that indefinites are not allowed to raise across negation (cf. Beck 1996). This is a general constraint on movement, based on general intervention effects, that applies to any theory of movement. For the copy theory of movement this implies that the negation may not be interpreted below if the indefinite is interpreted in the higher copy. Thus, the interpretation in which the indefinite outscopes the negation is ruled out (26).

(26) $*[_{IP} [_{Op-} \text{eine Krawatte}]_i [_I [_{VP} \text{du} [_{Op-} \text{eine Krawatte}]_i \text{anziehen}]] \text{musst}]]$

This constraint also prevents overgeneralization that may arise as a consequence of QR. In Dutch and German, NI's are not allowed to move across existential quantifiers:

(27)	... dat er iemand geen boek leest	Dutch
	... that there n-body no book reads	
	'... that somebody reads no book'	$\exists > \neg > \exists$

Adopting a QR analysis would in principal allow for a reading allow where the entire NI could outscope the existential quantifier *iemand* ('nobody'). However, if such an instance of QR would be banned for independent reasons, the analysis proposed here does not overgeneralise in this respect.

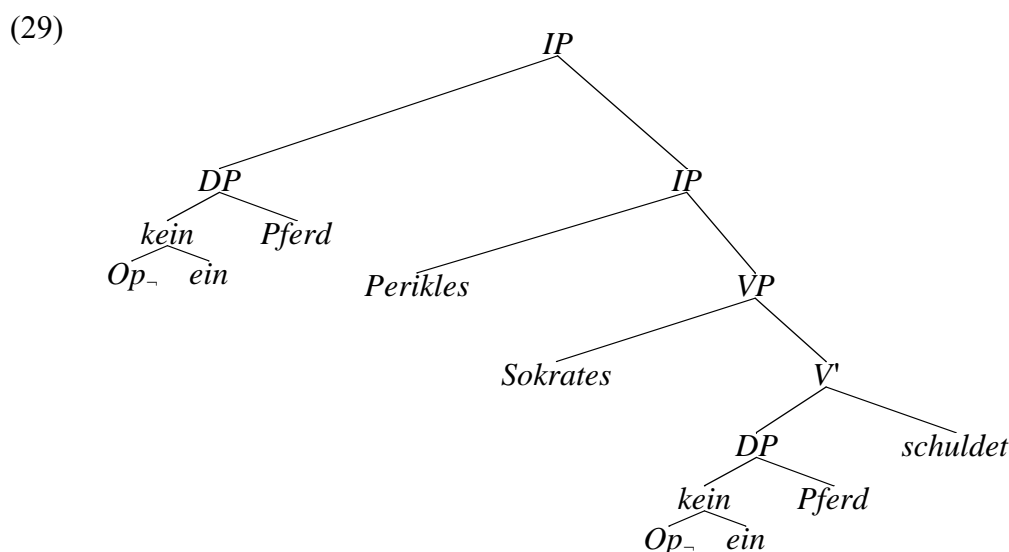
3.3 Deriving the split-scope readings: object intensional verbs

The analysis also applies to split-scope readings in the case of object intensional verbs, such as German *schulden* 'to owe.' The only difference between these cases, illustrated in (28), and the cases with modal verbs is that the narrow-scope reading is not available either.

⁴ One might wonder why I do not assume that the negative operator moves on its own. The reason for this is that movement of a negation would be hard to motivate. First, it is generally assumed that adverbs cannot undergo LF-movement, since adverbs seem to be always interpreted with surface scope. Thus allowing movement of a negation would lead to overgeneration. Second, it is not clear that LF-movement of the negation would actually alter the logical scope relations at all.

- (28) ...dass Perikles Sokrates kein Pferd schuldet
 ...that Perikles Sokrates no horse owes
1. '... that Perikles is not obliged to give Sokrates a horse' $\neg > \text{owe} > \exists$
 $[Op_{\neg} [IP \text{ Perikles } [VP \text{ Sokrates } [VP \text{ a horse } [V \text{ owes}]]]]]$
 2. '... that there is no horse that P. is obliged to give to S' $\neg > \exists > \text{owe}$
 $[Op_{\neg} \text{ a horse } [IP \text{ Perikles } [VP \text{ Sokrates } [V \text{ owes}]]]]]$
 3. *'... that P. is obliged not to give Sokrates a horse' $\text{owe} > \neg > \exists$
 $[IP \text{ Perikles } [VP \text{ Sokrates } [VP \text{ } Op_{\neg} \text{ a horse } [V \text{ owes}]]]]]$

In a similar fashion to (23) the object moves to a Spec,IP position, and the structure in (29) is derived.



Now the entire copy can be interpreted in the higher position, which yields the wide-scope reading (30).

- (30) $[Op_{\neg} \text{ a horse } [IP \text{ Per } [VP \text{ Sokrates } [VP \text{ } Op_{\neg} \text{ a horse } [V \text{ owes}]]]]]$

But, similar to the case of modal verbs, the negation may be interpreted high and the indefinite below. This yields the split-scope reading (31).

- (31) $[Op_{\neg} \text{ a horse } [IP \text{ Per } [VP \text{ Sokrates } [VP \text{ } Op_{\neg} \text{ a horse } [V \text{ }]]]]]]$

The reading where the negation is interpreted low and the indefinite is interpreted high is ruled out due the general movement constraint discussed in the previous subsection.

There remains the question why the narrow-scope reading where both the negation and the indefinite are interpreted below is not possible. Zimmermann (1993) argues that object intensional verbs take properties but not quantifiers as their arguments, as can be seen from the fact that determiners that are invariable interpreted as quantifiers, such as *every*, cannot have a narrow-scope reading, as illustrated in (32).

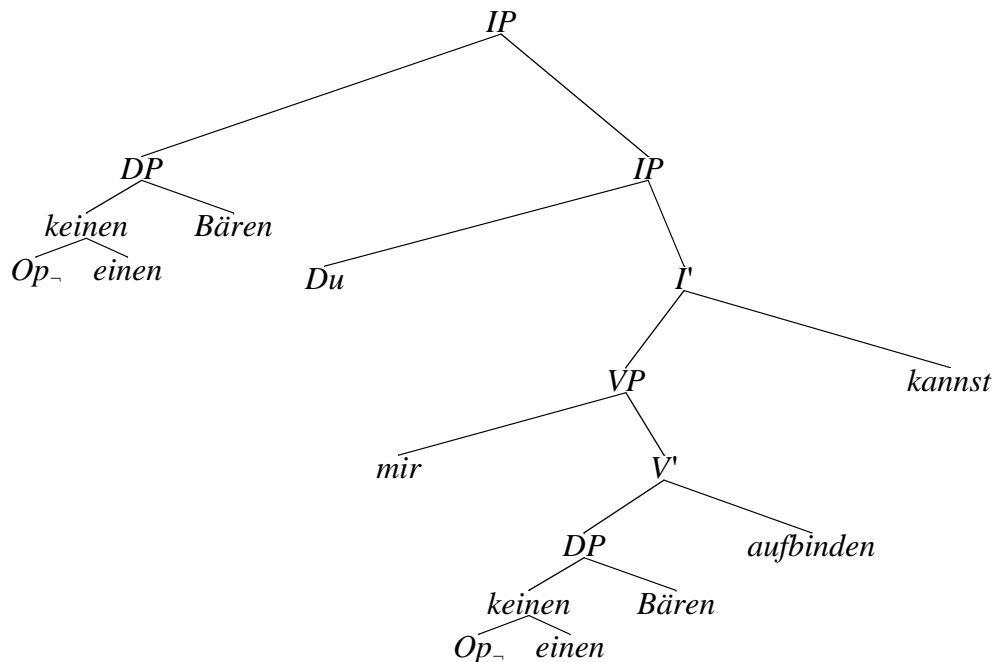
- (32) Hans seeks every unicorn (wide scope only)

(33) For once, I need no children in the house⁵

(34) [#][~~*Op*~~_¬ a horse [IP Per [VP Socrates [VP *Op*_¬ a horse [V owes]]]]]]

(35) ... dass du mir keinen Bären aufbinden kannst German
... that you me no bear up-tie can
Literally: ‘that it is not possible that you tie me up a bear’
Idiomatic: ‘that you can’t fool me’

(36)



12

Now the lower negation and the higher indefinite may delete under the copy and deletion theory of movement yielding the structure (37) which expresses the intended truth conditions correctly.

(37) [Op_{-} ~~a bear~~ [_{IP} you [_I can [_{VP} me [_{VP} Op_{-} a bear [_V tie up]]]]]]]

Of course, the other possible readings are still available, either with a literal or idiomatic reading, as is shown in (38) for the narrow-scope reading (literal and idiomatic) and (39) for the wide scope reading (only literal).

(38) [_{IP} you [_I can [_{VP} me [_{VP} Op_{-} a bear [_V tie up]]]]]

(39) [Op_{-} a bear [_{IP} you [_I can [_{VP} me [_{VP} Op_{-} ~~a bear~~ [_V tie up]]]]]]]

Thus all possible readings, both the literal and the idiomatic ones, can be derived without additional assumptions.

3.5 Concluding remarks

The analysis presented above explains how split-scope readings arise and how they are constrained. Furthermore, it solves another problem concerning the interaction between NI's and ellipsis.

In German and Dutch NI's that are deleted under ellipsis may sometimes seem to have lost their negation, as illustrated in for German and for Dutch.

- (40) a. ... dass er im Garten niemanden antraf und im Haus auch nicht
 ... that he in.the garden n-body saw and in.the house also neg
 '... that he didn't see anybody in the garden and neither in the house'
 b. ... dass er im Garten niemanden antraf und im Haus aber schon
 ... that he in.the garden n-body saw and in.the house but already
 '... that he didn't see anybody in the garden but rather in the house'
- (41) a. ... dat hij niemand in de tuin aantrof en ook niet in het huis
 ... that he n-body in the garden saw and also neg in the house
 '... that he didn't see anybody in the garden and neither in the house'
 b. ... dat hij niemand in de tuin aantrof maar wel in het huis
 ... that he n-body in the garden saw but PRT in the house
 '... that he didn't see anybody in the garden but rather in the house'

Given that deletion may only take place under semantic identity (cf. Merchant (2001)) it is strange that the negation that the deleted VP in the second clause does not contain a negation. However, following the analysis pursued here, it is in fact expected that the negation is allowed to be removed from the deleted VP: the fact that QR applies followed by partial reconstruction makes it possible that only the indefinite is interpreted VP in situ. Consequently this non-negative VP may be deleted in (40)-(41).

However, this does not answer the question why the VP must be interpreted non-negatively: the account only renders it possible, not obligatory. However, this is due to the contribution of *auch nicht* / *aber schon* in German and *ook niet* / *maar wel* in Dutch. Whereas the former indicates that the second clause contains as many negations as the second clause,

the latter indicates that the second clause contains one negation less. This is illustrated by the following facts:

- (42) a. ... dass er im Garten nicht niemanden antraf und im Haus auch nicht
 ... that he in.the garden neg n-body saw and in.the house also neg
 ‘... that he didn’t see nobody in the garden and nobody in the house either’
 b. ... dass er im Garten nicht niemanden antraf und im Haus aber schon
 ... that he in.the garden neg n-body saw and in.the house but already
 ‘... that he didn’t see nobody in the garden but he did see nobody in the house’
- (43) a. ... dat hij niet niemand in de tuin aantrof en ook niet in het huis
 ... that he neg n-body in the garden saw and also neg in the house
 ‘... that he didn’t see nobody in the garden and nobody in the house either’
 b. ... dat hij niet niemand in de tuin aantrof maar wel in het huis
 ... that he neg n-body in the garden saw but PRT in the house
 ‘... that he didn’t see nobody in the garden but he did see nobody in the house’

Here, the negation is interpreted in the deleted VP. Hence, it is correct that the lexical complex status of the NI’s leaves it open whether the VP is interpreted with or without negation and it is the contributions of other lexical elements that this is disambiguated.

4. Comparison to Previous Accounts

The facts presented above strongly indicate that NI’s should be considered being different from negative quantifiers. In this section, I evaluate other analyses that have attempted to cope with the problems introduced in section 2.

First, I discuss a previous analysis by Jacobs (1980) and Rullmann (1995), who take NI’s to result from amalgamation or incorporation processes.

After that I evaluate two accounts, by Geurts (1996) and by De Swart (2000), which have tried to keep considering NI’s to be negative quantifiers and to explain the facts that seem to argue against that as resulting from independent principles.

Finally, I discuss the work by Penka (2007) who takes the opposite view and argues that NI’s in Dutch and German are semantically non-negative and are equipped with a formal licensing condition that requires them to be bound by an abstract negative operator.

In this section I show that these four accounts face problems, which do not arise under the presented lexical analysis.

4.1 *Jacobs (1980)/Rullmann (1995): amalgamation and incorporation*

One of the first analyses of this phenomenon was Jacobs’ (1980) analysis that states that in German the negative marker *nicht* amalgamates with an indefinite, e.g. *jemand* (‘somebody’) or *nichts* ‘something’. However, as Penka (2007) has pointed out, such an amalgamation process is problematic in current grammatical frameworks that assume different levels for semantic and phonological representations.

Since this amalgamation rule cannot take place at the level of LF (otherwise the split-scope reading could never be derived), it must be a purely phonological and take place at PF. But this requires a phonological rule that e.g. renders *nicht* and *etwas* into *nichts*. Such phonological rules are not known in any other phonological process.

Alternatively, one could think of NI's in terms of incorporation of the negation into an indefinite. This is the core of a proposal put forward by Rullmann (1995) based on Klima's (1964) rules of incorporation. If superficially the negation and the indefinite are adjacent, the negation incorporates in the indefinite yielding an NI. For Dutch *niet* and *geen* this would be:

However, the same problems as for the amalgamation process show up again. Since at LF incorporation does not take place as lexical material is allowed to intervene between the negation and the indefinite, incorporation must take place again at PF. But incorporation at PF is not only allowed for overt indefinites (such as Dutch *een*), but also for the zero determiner, as shown in (45)-(46).

- Whereas in (45) the negation seems to have incorporated into the indefinite article *een*, in (46) incorporation must have taken place into an abstract element. But, once again, such a determiner is invisible at LF. Hence, Rullmann's analysis faces the same problems as Jacobs (1980): in order to account for the split scope readings that are derived at LF, NI's are suggested to be the result of an incorporation process, which for that matter may only take place at a moment in the derivation that does not effect interpretation. However, such a moment can only apply to overt material. Note that these problems do not arise in the lexical analysis presented in section 3.

According to Geurts (1996) tries to overcome the problems for taking NI's to be negative quantifiers by arguing that split readings of NI's arise when the article *kein* does not quantify over simple individuals as usually, but rather over kinds in the sense of Carlson (1977). He derives the split reading of (47) as sketched in (48).

- (47) Ich suche keine Putzfrau
I seek no cleaning lady
'I'm not looking for a cleaning lady' German
- (48) a. [no cleaning lady] λx . I seek x
b. $\neg \exists x \in \{\text{CLEANING LADY}\}$: I seek x

First, the negative quantifier *keine Putzfrau* moves across the verb at LF (48)a. Geurts then assumes that *kein* in this configuration quantifies over the singleton set consisting only of the kind term CLEANING LADY. This gives (48)b, which asserts that the speaker is not a cleaning-lady seeker. This is equivalent to the reading in which the indefinite quantifier ranges over concrete individuals and the negation has wide scope: the split-scope reading.

But Geurts' proposal has a number of problems, both conceptually and empirically. First, he cannot simply appeal to the notion of abstract individual or natural kind as used in Carlson (1977). To account for split readings in some cases very specific and strange kinds would have to be assumed. For instance, to get the paraphrased reading of (49), Geurts would have to appeal to the kind 'student who attended Arnim's lecture yesterday'.

- (49) Ich suche keinen Studenten, der gestern in Arnims Vorlesung war German
I seek no student who yesterday in Arnim's lecture was
'I'm not looking for a student who attended Arnim's lecture yesterday.'

Another problem for this analysis is the fact that *kein* can combine with numerals while scope splitting is still possible. We do not see how Geurts' account could deal with a sentence such as (50) under the reading paraphrased.

- (50) Wir müssen keine zwei Autos haben German
We must no two cars have
'We don't need to have two cars.'

Still more devastating is the fact that NI's can occur in idiomatic expressions and give rise to split-scope readings, as shown in (51)-(52). Occurrences of NI's in idioms themselves are a problem for the negative quantifier analysis. But what is important for the present discussion is the fact that NI's in idioms also lead to split readings when they are embedded under modal verbs:

- (51) Mir kannst du keinen Bären aufbinden
me.DAT can you no bear up-tie.
'You can't fool me'

- (52) Hij mag geen scheve schaats meer rijden German
He may no diagonal skate ride
'He is not allowed to make anymore mistakes'

In the cases of (51) and (52), the split reading cannot be derived by assuming quantification over abstract individuals, since this would only yield the literal interpretation. To get the idiomatic meaning of the expression *(k)einen Bären aufbinden* in (51) the indefinite must be interpreted together with the rest of the idiom in the scope of the modal while the negation still takes wide scope. The same holds for the Dutch example.

4.3 De Swart (2000): Higher-order quantification

The account of De Swart (2000) is similar to that of Geurts (1996) in as far as both assume that some special kind of quantification is responsible for scope splitting of NI's, thus maintaining the quantificational status of NI's. But rather than assuming quantification over abstract individuals, De Swart (2000) employs higher-order quantification. She argues that scope splitting occurs when *kein* quantifies over properties and proposes that there is an additional lexical entry for *kein* according to which *kein* is a negative quantifier over properties:

$$(53) \quad [[\text{kein Buch}]] = \lambda w. \lambda P_{\langle s, \langle \langle e, t \rangle \rangle, t \rangle}. \neg \exists P_{\langle \langle s, e, t \rangle \rangle} (P = \lambda w' \lambda y. (\mathbf{Book}'_{w'}(y)) \ \& \ P(P))$$

Using this translation for *kein* then derives the split scope reading for the sentence in (54) as sketched in (55):

(54) Hanna sucht kein Buch German
Hanna seeks no book

(55) no book (seek) (hanna)
 $\neg \exists P (P = \lambda w' \lambda y. (\mathbf{Book}'_{w'}(y)) \ \& \ \mathbf{Seek}'(\mathbf{h}, P))$
 $= \neg \mathbf{Seek}'(\mathbf{h}, \lambda w' \lambda y. (\mathbf{Book}'_{w'}(y)))$
 'Hanna is not a book seeker'
 ='Hanna doesn't seek a book'

But there are reasons to believe that higher-order quantification is not what is responsible for scope splitting. First, such an analysis cannot derive intermediate scope readings of the indefinite for sentences with two scope-bearing elements besides negation and the indefinite, i.e. readings in which the negation takes widest scope and the indefinite takes scope in between the two operators. This is so because the higher-order interpretation of *kein* invariably gives the indefinite narrowest scope. De Swart claims that this is actually a virtue of her analysis and argues that intermediate scope readings are not available for NI's. But I believe that this is empirically wrong. For example, the sentence (56) very well has the reading paraphrased, in which the negation takes widest scope and the indefinites scopes in between *kann* 'can' and *wollen* 'want'. This is confirmed by the fact that the speaker can elaborate on (56) with "She doesn't even know one". If the indefinite had necessarily narrow scope with respect to 'want', this wouldn't be incompatible with Julia not knowing any Norwegian men, because she might still have the idea that Norwegians make good husbands and want to marry some Norwegian or other.

(56) Julia kann keinen Norweger heiraten wollen German
 Julia can non Norwegian marry want
 'It's not possible that Julia wants to marry a Norwegian'

Moreover, the fact that NI's in idioms can have a split reading is also a problem for De Swart's account. An NI has to undergo QR before the higher-order translation rule can apply. But QR is not possible for NI's that are part of idioms, since idioms form a semantic unit and have to be interpreted en bloc. Hence (51) and (52) are also problematic for this analysis.

4.4 Penka (2007): NI's are n-words

A recent analysis that is the opposite of Geurt's and De Swart's analyses is Penka's (2007) analysis that takes NI's to be semantically non-negative. Penka (2007), following on Penka (2002) and Penka & von Stechow (2001), draws a parallel between Negative Concord and split-scope readings and argues that the same process underlies both phenomena.

Penka adopts Zeijlstra's (2004) analysis of Negative Concord, where n-words (in Negative Concord languages) are taken to be semantically non-negative, carrying an uninterpretable negative feature ([uNEG]) which needs to be checked against a negative operator, which may be phonologically abstract. The examples given in (3) and (4) would then receive the following syntactic and semantic representations:

- (57) a. Non telefona nessuno Italian
 NEG calls n-body
 $[Non_{[iNEG]} telefona\ nessuno_{[uNEG]}]$
 $\neg \exists x [body'(x) \& call'(x)]$
- b. Nessuno dice niente
 N-body says n-thing
 $[Op_{NEG[iNEG]} nessuno_{[uNEG]} dice\ niente_{[uNEG]}]$
 $\neg \exists x \exists y [body'(x) \& thing'(y) \& say'(x, y)]$
- (58) a. Nevolá nikdo Czech
 NEG.calls n-body
 $[Op_{NEG[iNEG]} nevolá_{[uNEG]} nikdo_{[uNEG]}]$
 $\neg \exists x [body'(x) \& call'(x)]$
- b. Nikdo nedá nikomu nic
 N-body NEG.gave n-body n-thing
 $[Op_{NEG[iNEG]} nikdo_{[uNEG]} nedá_{[uNEG]} nikomu_{[uNEG]} nic_{[uNEG]}]$
 $\neg \exists x \exists y \exists z [body'(x) \& body'(y) thing'(z) \& give'(x, y, z)]$

In short, the highest element carrying [uNEG] is always immediately dominated by a negative operator, be it overt (like Italian *non*) or covert ($Op_{NEG[iNEG]}$).

Penka argues that in Dutch and German the same process is going on, the only difference being that multiple agreement is not allowed these languages. Hence every NI is semantically non-negative carrying a [uNEG] feature and needs have its feature checked against an abstract negative operator $Op_{NEG[iNEG]}$. In case two NI's show up in the sentence each NI must licensed by a separate $Op_{NEG[iNEG]}$.

Thus Penka derives split-scope readings by having the abstract negative operator outscoping the intervening operator, which on its turn outscopes the indefinite DP, as illustrated in (59).

- (59) ... dass Du keine Krawatte anziehen musst German
 ... that you no tie wear must
 $[dass\ Du\ [Op_{NEG[iNEG]} [[keine_{[uNEG]} Krawatte\ anziehen]\ musst]]]$
 'It is not required that you wear a tie' $\neg > must > \exists$

However, two problems show up for this analysis. First it is not clear what determines the licensing conditions of the abstract negative operator. In Zeijlstra (2004, 2006) it is explicitly stated that the Op_{NEG} may only be introduced in a derivation, immediately dominating the highest element carrying [uNEG]. Hence, under this condition the split-scope reading could

not be derived. Penka (2007) states that adjacency at surface structure is the proper licensing domain for NI's. Otherwise the other readings could not have been derived, as is demonstrated in (60).


- (60) [dass Du [*Op*_{NEG[iNEG]} [[keine_[uNEG] Krawatte anziehen] musst]] $\neg > \text{must} > \exists$
[dass Du [*Op*_{NEG[iNEG]} [keine_[uNEG] Krawatte [anziehen musst]]]] $\neg > \exists > \text{must}$
[dass Du [[*Op*_{NEG[iNEG]} [keine_[uNEG] Krawatte anziehen]] musst]] $\text{must} > \neg > \exists$

However, linear adjacency is not a notion that applies at the level of surface structure, but at the level of PF. Surface structure is not about linearization: that is a process that takes place at PF. For the derivation it does not make any difference whether two elements precede or follow each other. At Spell-out the two structures in (61) are identical:

- (61) [A [B C]]
[A [C B]]

Only at PF the two structures diverge. Consequently, Penka's licensing condition of NI's is a PF condition in disguise. But this leads to the same trap as the amalgamation/incorporation analyses: *Op*_{NEG} does not exist at PF as it is phonologically empty.

Second, Penka (2007) takes every language to exhibit formal negative features. Zeijlstra (2006) on the other hand states that only real Negative Concord languages have a formal negative feature and that in Double Negation languages the negative feature does not have any formal status: it is a purely semantic feature. This leads to the prediction that non-Negative Concord languages do not exhibit a formal feature [NEG], which may project itself (Giorgi & Pianesi 1997), as illustrated in (62).

- (62) a. NC: [u/iNEG]/X b. No NC: X


As a result negative heads (X°) are predicted not to be available in non-Negative Concord languages. This prediction is born out (on the basis of an extensive cross-linguistic and language-internal survey, cf. Zeijlstra (2004)): there is no language without NC that exhibits a negative marker that is a syntactic head.⁶ This prediction is unexpected though under Penka's analysis where every language has a formal negative feature.

To conclude, Penka's analysis that tries to unify Negative Concord and split-scope readings faces two problems that the lexical analysis does not suffer from.

5 Conclusions

In this paper I have argued that Dutch and German NI's are not negative quantifiers (in the Montegovian sense), but complex lexical items that consist of an indefinite and an abstract negative operator. Split scope effects are derived as a result of the copy theory of movement. I have proposed that in split-scope constructions after Quantifier Raising the negative operator is interpreted in a higher copy and the indefinite in a lower copy of the NI. Furthermore I have demonstrated that alternative analyses that take NI's in Dutch and German to be negative

⁶ See Zeijlstra (2004, 2006) for a treatment of languages that seem to violate this prediction, such as English.

quantifiers, n-words or to be resulting from amalgamation or incorporation processes face problems that the lexical analysis presented in this paper does not encounter.

References:

- Bech, Gunnar. 1955/57. *Studien über das deutsche verbum infinitum*. København: Det Kongelige Danske Akademie av Videnskaberne.
- Beck, Sigrid. 1996. *Wh-constructions and transparent Logical Form*. Ph.D. dissertation, University of Tübingen.
- Carlson, Greg. 1977. *Reference to kinds in English*, PhD Dissertation, University of Massachusetts.
- Chomsky, Noam. 1995. *The minimalist program*. Cambridge, MA: The MIT Press.
- De Haan, Ferdinand. 1997. *The Interaction of Modality and Negation: A Typological Study*. New York: Garland.
- De Swart, Henriëtte. 2000. 'Scope Ambiguities with Negative Quantifiers', in: von Stechow, Klaus & Urs Egli, *Reference and Anaphoric Relations*, Dordrecht/Boston/London: Kluwer Academic Publishers: 109-132.
- De Swart, Henriëtte & Ivan Sag 2002. 'Negation and Negative Concord in Romance', in: *Linguistics & Philosophy* 25, 373-415.
- Geurts, Bart. 1996. 'On No', in: *Journal of Semantics* 13: 67-86.
- Giannakidou, Anastasia 1997. *The landscape of Polarity Items*, PhD dissertation, Rijksuniversiteit Groningen.
- Giorgi, Alessandra & Massimiliano Piansesi. 1997. *Tense and Aspect: From Semantics to Morphosyntax*, Oxford: Oxford Studies in Comparative Syntax.
- Haegeman, Liliane. 1995. *The syntax of negation*. Cambridge Studies in Linguistics 75. Cambridge: Cambridge University Press.
- Haegeman, Liliane & Rafaella Zanuttini. 1996. 'Negative Concord in West Flemish', in: Belletti, Adriana & Luigi Rizzi, (eds), *Parameters and Functional Heads. Essays in Comparative Syntax*. Oxford: Oxford University Press, 117-179.
- Heim, Irene. 2006. 'Little', in: Tancredi, Christopher, Kanazawa Makoto, Imani, Ikumi & Koyomi Kusumoto, (eds), *Proceedings of SALT 16*. Cornell Linguistic Circle, Ithaca.
- Ladusaw, Bill. 1979. *Polarity Sensitivity as Inherent Scope Relations*, Ph.D. thesis, University of Texas, Austin.
- Ladusaw, Bill. 1992. 'Expressing negation', in: Barker, Chris & David Dowty (eds.), *SALT II*, Cornell Linguistic Circle, Ithaca.
- Merchant, Jason. 2001. *The syntax of silence*. Oxford: Oxford University Press.
- Penka, Doris. 2002. Zur Semantik der negativen Indefinita im Deutschen: Tübingen-Linguistik-Report 1, Universität Tübingen.
- Penka, Doris. 2007. Negative Indefinites. PhD Thesis, Universität Tübingen.
- Penka, Doris & Arnim von Stechow. 2001. 'Negative Indefinita unter Modalverben.' In: Müller, Reimar & Marga Reis, (eds.) *Modalität und Modalverben im Deutschen, Linguistische Berichte, Sonderheft 9*, Hamburg: Helmut Buske, 263-286.
- Rullmann, Hotze. 1995. 'Geen eenheid.' In: *Tabu* 25. 194-197.
- Van der Wouden, Ton. *Negative Contexts*. PhD dissertation, University of Groningen.
- Zeijlstra, Hedde. 2004. *Sentential Negation and Negative Concord*, PhD dissertation, University of Amsterdam.
- Zeijlstra, Hedde. 2006. 'On the syntactic flexibility of formal features.' To appear in: Biberauer, Theresa, Holmberg, Anders & Ian Roberts (eds.) *The Limits of Syntax*, Amsterdam, Benjamins.
- Zimmermann, Ede. 1993. 'On the Proper Treatment of Opacity in Certain Verbs', *Natural Language Semantics* 1, 149 - 179.