

Negative Indefinites in Dutch and German

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1. Introduction

Negative Indefinites (NIs), 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, there are two different phenomena that challenge this analysis. The first has been extensively discussed in the literature and is known as Negative Concord; the second involves split-scope readings of NIs, 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 (DN) languages.

- (2) a. Nobody calls.
 $\neg \exists x[\mathbf{body}'(x) \ \& \ \mathbf{call}'(x)]$
b. Nobody said 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 (NC).

- (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 ha detto niente.
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. Nevola 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 analysis in (1) faces problems for so-called NC languages. Because of data such as (3) and (4) many scholars have proposed that NIs in NC 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 NIs to be negative quantifiers (cf. Haegeman 1995, Haegeman & Zanuttini 1996, De Swart & Sag 2002).

In this paper we discuss split-scope readings, which are exhibited by NIs in DN languages. We explain the possibility of such readings by arguing that NIs in DN languages are not negative quantifiers.

After introducing the relevant data in the next section, we present an analysis of NIs in DN languages and apply it to the problematic cases. This analysis is then compared to previous accounts (section 4). In section 5, we discuss how our analysis of NIs relates to the phenomena of NC and negative polarity, resulting in a picture of the landscape of licensing relations between negation and indefinites. Section 6 concludes.

2. Data

In this section we discuss a phenomenon occurring in Dutch and German that challenges the view that NIs 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 NIs 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 NIs embedded under modal or object intensional verbs.

2.1 Modal Verbs

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

- | | | | | | | |
|-----|-----|--|-------|----------|-----------|--------------------------------|
| (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.’ | | | | $\text{must} > \neg > \exists$ |

The salient reading of this sentence is paraphrased in (5)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 (5)b and (5)c. In (5)c, the negative quantifier 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 (5)b, in which both the negation and the indefinite outscope the modal. But the wide scope reading has weak truth conditions: (5)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 (5) rejects that ties are obligatory.

The same line of argumentation carries over to the following Dutch example (from Rullman 1995: 194):

- (6) Ze mogen geen verpleegkundige ontslaan. (Dutch)
 they may no nurse fire
 a. 'They are not allowed to fire any nurse' $\neg > \text{may} > \exists$
 b. 'There is no nurse who they are allowed to fire' $\neg > \exists > \text{may}$
 c. 'They are allowed not to fire a nurse' $\text{may} > \neg > \exists$

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:

- (7) Es muss ein Arzt anwesend sein.
 there must a physician present be
 a. 'It is required that there be a physician present.' $\text{must} > \exists$
 b. *'There is a physician who is required to be present.' $\exists > \text{must}$

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.

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

These considerations show that the salient reading cannot be somehow derived from the wide scope reading of a negative quantifier, thereby confirming that scope splitting of NIs 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.

- (9) Perikles schuldet Socrates kein Pferd. (German)
 Perikles owes Socrates no horse
 a. ‘Perikles is not obliged to give Socrates a horse.’ $\neg > \text{owe} > \exists$
 b. ‘There is no horse that P. is obliged to give to Socrates.’ $\neg > \exists > \text{owe}$
 c. *‘Perikles is obliged not to give Socrates a horse.’ $\text{owe} > \neg > \exists$
- (10) Hans zoekt geen eenhoorn. (Dutch)
 Hans seeks no unicorn
 a. ‘Hans is not trying to find a unicorn.’ $\neg > \text{seek} > \exists$
 b. ‘There is no unicorn Hans is trying to find.’ $\neg > \exists > \text{seek}$
 c. *‘Hans is trying not to find a unicorn.’ $\text{seek} > \neg > \exists$

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. (10)b for instance is true if unicorns do not exist in the evaluation world, independently of Hans’ activities.

3 Analysis

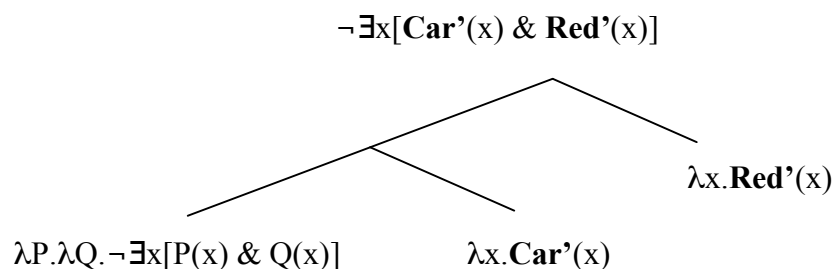
The fact that the negative and the indefinite part of an NI in DN languages such as Dutch and German may take scope from different positions requires an explanation. In this section we formulate a proposal that accounts for this problem. In short, we propose that in DN languages NIs can be complex lexical 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 we elaborate this proposal in more detail and in the subsequent subsections we demonstrate how the different possible readings can be derived for the NIs in the environments discussed in section 2: modal verbs (3.2) and intensional verbs (3.3).

3.1 NIs as complex lexical items

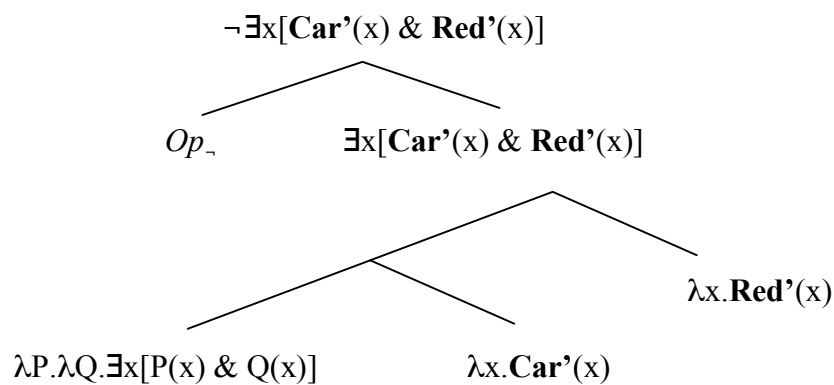
It is often assumed that NIs lack an internal syntactic structure and that an NI is a simple lexical item. In other words, the semantics of an NI is that of a negative quantifier and its semantic force is induced from one point in the syntactic structure. A simplified illustration is given in (11).

- (11) No car is red



However, there is no reason to assume that the structure in (11) is the only way to generate the meaning of a construction containing an NI. Moreover, although from a morphosyntactic perspective (11) consists of three lexical elements (not taking the copula into account), on the 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 (12). Since (12) yields exactly the same reading as (11), NIs 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.

(12) No car is red



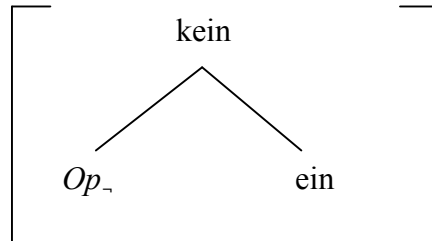
The main difference between (11) and (12) is that the indefinite and the negative operator occupy different positions in the structure. Consequently, the structure in (12), contrary to the structure in (11), does not exclude other material to intervene between the position of the negative operator and the indefinite. How the structure in (12) is derived will be the topic of this section.

The more complex structure in (12) immediately raises two questions. First, how does it follow from the structure in (12) 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 DN languages the relation between the negation and the indefinite is always 1:1 (as opposed to NC 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, we propose that the complex structure of NIs 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 we argue that NIs in languages such as Dutch and German are complex LIs that consist of a negative and an indefinite part. An example is given in (13) for German *kein* ‘no’.

(13) Structure of LI *kein*:¹



Before addressing the issue of how the structure in (12) is derived, we will first look at the consequences on the lexical, syntactic and semantic level of the assumption that NIs 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_-) 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 NIs with respect to syntax and semantics now enable us to derive a structure like that in (12) and thus get the spilt-scope reading. In the next subsection we demonstrate how the different readings of sentences consisting of a modal verb and an NI follow. In the section thereafter we 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

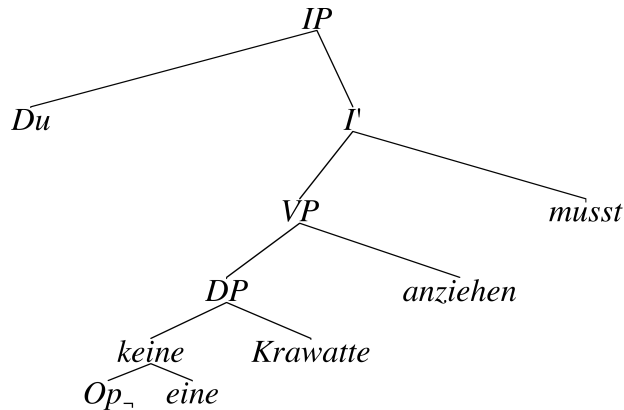
Let us reconsider the data in (5) and (6) ((5) is repeated as (14) below, abstracting away from V2 movement). The sentence has three readings, paraphrased (14)1-3, with the first one being the most salient.

- (14) ...dass du keine Krawatte anziehen musst
 ...that you no tie wear must
1. ‘... that it is not obligatory that you wear a tie’ $\neg > \text{must} > \exists$
 $[Op_- [IP \text{ you } [I \text{ must } [VP \text{ a tie } [V \text{ wear}]]]]]$
 2. ‘... that there is no tie that you must wear’ $\neg > \exists > \text{must}$
 $[Op_- [\text{ a tie } [IP \text{ you } [I \text{ must } [VP \text{ wear}]]]]]$
 3. ‘... that it is obligatory that you don’t wear a tie’ $\text{must} > \neg > \exists$
 $\text{you } [I \text{ must } [VP \text{ } Op_- \text{ a tie } [V \text{ wear}]]]$

¹ 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).

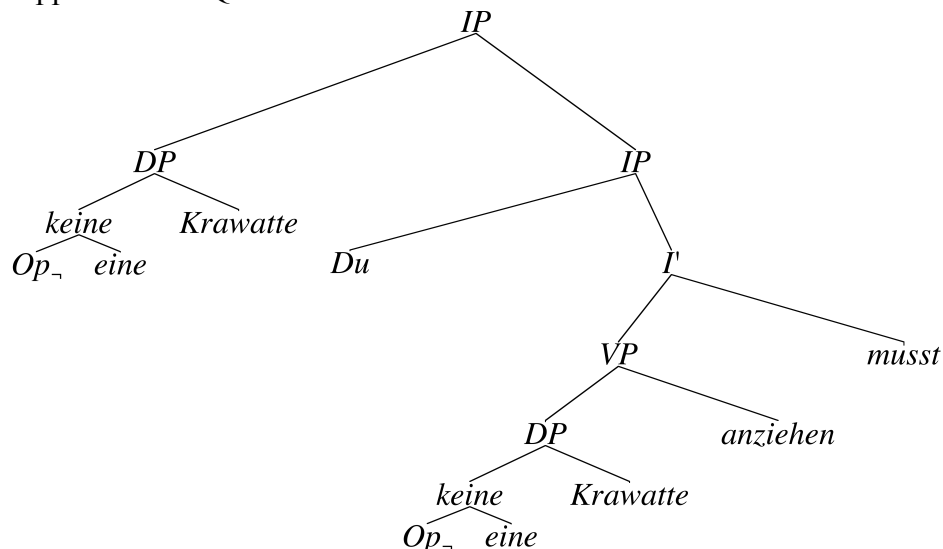
Let us first consider the base-generated structure, where the NI *keine Krawatte* ‘no tie’ is merged with the verb, which on its turn merges with the modal verb *musst* ‘must’, under the standard assumption that modal verbs are base-generated in I°. Finally the subject merges and IP is created.²

(15) Base-generated structure of (14):



This base-generated structure already yields the narrow-scope reading (14)-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 QR while the original element is subject to deletion. This is illustrated in (16).

(16) Application of QR:



The structure in (16) contains two identical copies of the syntactic object [*Op₁ 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

² The exact position where the subject is base-generated (Spec,vP or Spec,IP) is irrelevant for the present discussion.

yields the reading in which both the negation and the indefinite outscope the modal verb. The LF of this structure is given in (17).

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

However, we 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.³ This yields the LF in (18).

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

The reading that (18) yields is exactly one in which the negation outscores the modal verb, whereas the modal verb on its turn outscores the indefinite: the split-scope reading. The assumption that NIs are lexically complex, in accordance with the copy theory of movement, correctly predicts the fact that a sentence like (14) 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 NIs. We argue however that this reading cannot be yielded on independent grounds. A general constraint of movement in German 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 outscores the negation is ruled out (19).

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

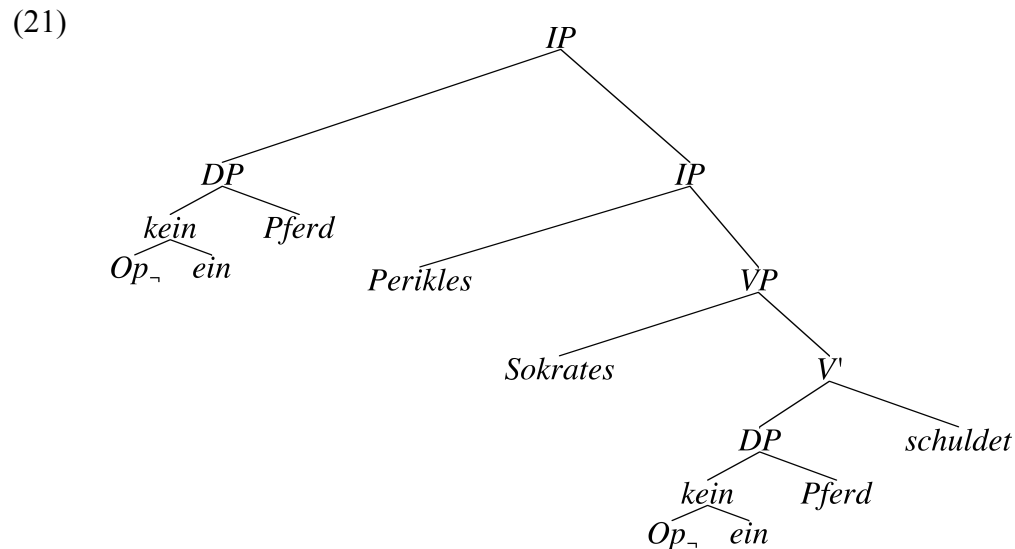
3.3 Deriving the split-scope readings: object intensional verbs

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 (20), and the cases with modal verbs is that the narrow-scope reading is not available either.

³ One might wonder why we 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.

- (20) ...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.' $\text{owe} > \neg > \exists$
 $[IP \text{ Perikles } [VP \text{ Sokrates } [VP Op_{\neg} \text{ a horse } [V \text{ owes}]]]]]$

In a similar fashion to (16) the object moves to a Spec,IP position, and the structure in (21) is derived.



Now the entire copy can be interpreted in the higher position, which yields the wide-scope reading (22).

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

But, similar to the case of modal verbs, the negation may be interpreted high and the indefinite below. This yields the split-scope reading (23).

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

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 (24).

- (24) Hans seeks every unicorn. (wide scope only)

It is unclear, however, whether this constraint results from the semantics of transitive intensional verbs, or from the pragmatics that make such utterances salient. Several examples containing NIs have been reported to be possible with a narrow-scope reading like (25).

- (25) For once, I need no children in the house.⁴

Hence, Zimmermann's account is probably too restrictive for these cases, as pragmatics is involved as well. Therefore we assume that the unwellformedness of (26) follows from the pragmatics that goes with transitive intensional verbs.

- (26) [#][~~*Op*~~_{-a horse} [IP Per [VP Socrates [VP *Op*_{-a horse} [V owes]]]]]

4. Comparison to Previous Accounts

In this section, we discuss two recent accounts of scope splitting of NIs in German and Dutch. Geurts (1996) and De Swart (2000) propose analyses of the scope splitting phenomenon that are semantic in nature. We will show that these semantic accounts face serious problems, which do not arise under our syntactic analysis.

4.1 Geurts (1996): Quantification over abstract individuals

According to Geurts (1996), split readings of NIs 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 (27) as sketched in (28).

- (27) Ich suche keine Putzfrau.
I seek no cleaning lady
'I'm not looking for a cleaning lady'
- (28) 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 (28)a. Geurts then assumes that *kein* in this configuration quantifies over the singleton set consisting only of the kind term CLEANING LADY. This gives (28)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

⁴ The example is attributed to von Stechow (exact reference unknown)

of (29), Geurts would have to appeal to the kind “student who attended Arnim’s lecture yesterday’.

- (29) Ich suche keinen Studenten, der gestern in Arnims Vorlesung war.
 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 (30) under the reading paraphrased.

- (30) Wir müssen keine zwei Autos haben.
 We must no two cars have
 ‘We don’t need to have two cars.’

Still more devastating is the fact that NIs can occur in idiomatic expressions. In German and Dutch ((31)-(32)) idioms involving an indefinite are generally negated by replacing the indefinite with an NI. The negation then refers to the idiom as such.

- | | | | |
|------|----|---|--------|
| (31) | 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.’ | |
| (32) | 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 NIs in idioms themselves are a problem for the negative quantifier analysis. But what is important for the present discussion is the fact that NIs in idioms also lead to split readings when they are embedded under modal verbs:

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

In the cases of (33) and (34), 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 (33) 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.

4.2 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 NIs. 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:

$$(35) \quad [[\text{kein Buch}]] = \lambda \mathcal{P}_{\langle \langle e, t \rangle, t \rangle} . \neg \exists P_{\langle e, t \rangle} (P = \lambda y . (\mathbf{Book}'(y)) \ \& \ \mathcal{P}(P))$$

Using this translation for *kein* then derives the split scope reading for the sentence in (36) as sketched in (37):

- (36) Hanna sucht kein Buch.
Hanna seeks no book

- (37) no book (seek) (hanna)
 $\neg \exists P (P = \lambda y . (\mathbf{Book}'(y)) \ \& \ \mathbf{Seek}'(h, P))$
 $= \neg \mathbf{Seek}'(h, \lambda y . (\mathbf{Book}'(y)))$
 '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 NIs. But we believe that this is empirically wrong. For example, the sentence (38) 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 (38) 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.

- (38) Julia kann keinen Norweger heiraten wollen.
 Julia can no Norwegian marry want
 'It's not possible that Julia wants to marry a Norwegian.'

Moreover, the fact that NIs 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 NIs that are part of idioms, since idioms form a

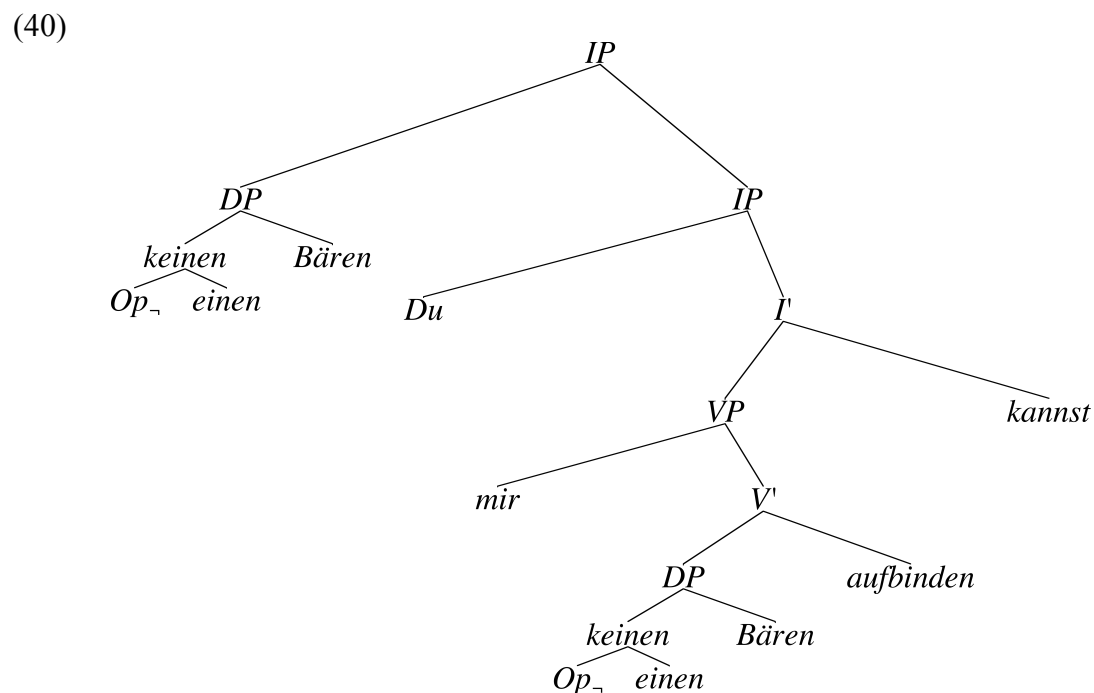
semantic unit and have to be interpreted en bloc. Hence (33) and (34) are also problematic for this analysis.

4.3 Deriving the split-scope readings: idiomatic expressions

Above we argued that idiomatic expressions pose a problem for the accounts by Geurts (1996) and by De Swart (2000). In this subsection we show that the analysis we presented in section 3 can in fact account for the split-scope readings of sentences that combine an idiomatic expression with a modal verb. Let us look at the German example in (33), repeated in 0.

- (39) ... dass du mir keinen Bären aufbinden kannst
 ... 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'

Here again, the entire idiomatic expression is first merged within VP and later on, the NI moves out of VP under QR to an IP adjunct position.



Now the lower negation and the higher indefinite may delete under the copy and deletion theory of movement yielding the structure (41) which expresses the intended truth conditions correctly.

- (41) [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 (42) for the narrow-scope reading (literal and idiomatic) and (43) for the wide scope reading (only literal).

(42) [_{IP} you [_I can [_{VP} me [_{VP} *Op*-, a bear [_V tie up]]]]]

(43) [*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.

5 Negation and indefinites: NPI licensing, Negative Concord and Split Scope effects

The analysis that we presented in section 3 takes split-scope readings to be a result of the fact that in languages such as German and Dutch NIs consist of a plain indefinite that is already within the lexicon licensed by a negative operator. Therefore, the current proposal concerned split-scope effects tells us more about the nature of licensing.

Licensing of indefinites by negation is reminiscent of two other phenomena: Negative Polarity Item (NPI) licensing and Negative Concord (NC). Moreover, the question becomes of interest what exactly are the differences between NPI licensing and split-scope effects on the one hand and NC and split-scope effects on the other hand. Finally, the apparent existence of multiple kinds of licensing relations sheds more light on the division of labour between the different components of grammar.

In subsection 5.1 we will discuss the differences between NPI licensing and lexical licensing and in subsection 5.2 the differences between NC and lexical licensing. On the basis of these differences we argue will in subsection 5.3 that the lexical licensing mechanism that underlies the discussed split-scope effects is fundamentally different from the other two. In fact, we argue that the three different instances of licensing are representative for the three different components of grammar: the lexicon (split-scope effects), the syntactic component (NC) and the pragmasemantic component (NPI licensing).

5.1 Differences between NPI licensing and Split Scope effects

Both in the analysis we presented above and the analyses by Geurts (1996) and De Swart (2000) it was assumed that German *kein* and Dutch *geen* are semantically negative, albeit in our analysis the negation is separate from the indefinite. In this respect it seems much different from the well-known phenomenon of NPI licensing.

However, there is some correspondence between our proposal and the way NPI licensing functions. In both cases an indefinite is obligatorily connected to a higher c-commanding negative operator, as is illustrated below:

- (44) a. ... dass du kein Krawatte anziehen musst
 [_{IP} [*Op*-, [_I [_{VP} du [_{VP} [eine Krawatte] anziehen] musst]]]
- └──────────┘
- b. ... that you don't have to wear any tie
- └──────────┘

Given this superficial resemblance it is tempting to think of split-scope effects and NPI licensing as two instances of one and the same relation, i.e. as one phenomenon. However, there are crucial differences between NPI licensing and split-scope effects.

First, if NPI licensing takes place within the semantic component of grammar, as is generally assumed, it is not expected to obey any syntactic locality constraints. This does however not hold for split-scope effects. Due to the syntactic copy + deletion analysis, the relation between *Op₁* and the indefinite is predicted to be a syntactic relationship and therefore expected to obey such syntactic locality conditions. This prediction is born out. In (45) it is shown that NPIs in adjunct islands (which act as strong islands with respect to syntactic relations) can be licensed by a negation outside the island, but a split scope construction in the same configuration is ruled out.

- (45) a. Hans doesn't work [in order to earn any money]
 b. Hans arbeitet [um kein Geld zu verdienen]
 Hans works COMP no money to earn
 'Hans works in order not to earn any money'
 *'Hans doesn't work in order to earn any money'

Second, if split-scope effects were the result of NPI licensing, NIs in Dutch and German would be semantically non-negative NPIs licensed by an abstract negation. Nothing would rule out a single negation reading then if two NIs co-occur.

- (46) a. Pericles doesn't owe any man any horse. (Single negation)
 b. Perikles schuldet keinem Menschen kein Pferd. (Double negation)
 'It's not the case that Pericles doesn't owe any man any horse.'

Third, if an NI such as *kein* is thought of as an NPI, an overt negative marker should license it, whereas the negative operator in split-scope effects remains abstract (within the LI). NPIs may not be licensed abstractly.⁵

- (47) *John saw any man.
 Int. reading: 'John didn't see any man.'

We can thus conclude that there are at least three major differences between NPI licensing and split-scope effects (different locality constraints, multiple licensing and the (c)overtness of the negative operator), which supports the hypothesis that these two phenomena are fundamentally different.

5.2 *Split scope effects and Negative Concord*

The same holds for the phenomena of NC and split-scope effects. Again, in both cases superficially a higher c-commanding negation licenses an element, which obtains a reading as an indefinite.

⁵ This is not entirely true. NPIs may be licensed by German *kein*/Dutch *geen*. Then this argument no longer holds, as *kein/geen* may be licensed by an abstract negation that on its turn licenses the NPI. However sole NPIs themselves cannot exhibit self-licensing effects (in Ladusaw's (1992) terminology).

- (48) a. ... dass du kein Krawatte anziehen musst German
 [IP [*Op*₋] [_I [_{VP} du [eine Krawatte] anziehen] musst]]
 └──────────┘
 b. Gianni non ha telefonato a nessuno Italian
 └──────────┘
 Gianni neg has called to n-body
 ‘Gianni didn’t call anybody’

Hence, again, one may raise the question to what extent NC and lexical licensing are different phenomena.

First, one of the arguments formulated above applies, too: if split scope effects were to be treated as a result of syntactic feature checking, an additional analysis has to be adopted to account for the fact that in languages such as Dutch and German every NI corresponds to a negation, i.e. why multiple agree does not apply. Without independent evidence for cross-linguistic variation of multiple agree, such an analysis would be a mere stipulation.

Another example of a major difference between NC and lexical licensing is that in all NC languages an n-word in postverbal position has to be licensed by an overt (preverbal) negative marker. Sole n-words in postverbal position are not allowed.⁶ Split scope effects are not subject to this constraint:

- | | | | |
|------|----|---------------------------------------|---------|
| (49) | a. | Gianni *(non) ha telefonato a nessuno | Italian |
| | b. | Du musst keine Krawatte anziehen | German |

The fact that NC and split-scope effects behave differently with respect to multiple agreement and the (c)overtness of the negative operator suggest that these are indeed different phenomena.

5.3 Licensing relations and the division of labour in grammar

We concluded above that split-scope effects differ fundamentally from NPI licensing and NC, despite the fact that in all three cases indefinites are licensed by a negative operator.

The question whether NPI licensing is different from NC is not discussed in this paper. However, many differences between NPI licensing and NC have been discussed extensively in the literature (Ladusaw 1992, Valllduvi 1995, Giannakidou 1997, Watanabe 2004, Zeijlstra 2004) and we will not repeat the discussion here. NC cannot be thought of as a form of mere NPI licensing and analyses that consider NC as a form of NPI licensing need to adopt additional assumptions in order to account for the differences between these phenomena (cf. Giannakidou 2000). Hence we conclude that all three licensing relationships are fundamentally different.

In order to explain the fact that there are at least three different ways of licensing indefinites, it is necessary to study the nature of NC and NPI licensing. These phenomena have been subject to extensive research and we do not pretend that this overview can do any justice to the rich variety of analyses that have surfaced in the literature. However, we will give a brief overview of current trends in reasoning

⁶ Herburger (2001) has a few counterexamples against this observation, but also shows that in those cases no sentential negation reading is available (see Herburger (2001) and (Zeijlstra) 2005 for different analyses of such constructions).

about these phenomena and on that basis we will argue that the threefold division between split-scope effects, NPI licensing and NC follows from the grammatical components in which these phenomena take place.

Split-scope effects result from the fact that already in the lexicon an indefinite is connected to a negative operator. Hence whenever the indefinite is introduced in the derivation, the negation is introduced too. This means that for instance in the case of German *kein*, it is impossible that the negation (or the indefinite) is left behind in the derivation. There is no additional machinery required to instantiate this licensing relation as it is already lexically stored.

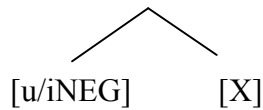
In the case of NC, different analyses have been presented. Roughly three different approaches can be identified:

- (i) *The polyadic quantification approach* (Zanuttini 1991, Haegeman 1995, Haegeman & Zanuttini 1996, De Swart & Sag 2002) that takes NC to be the result of a melting process in which *n* monadic negative quantifiers form one *n*-ary polyadic negative quantifier, in a similar fashion to multiple *Wh* formation;
- (ii) *the NPI approach* (Laka 1990, Giannakidou 2000) in which NC is considered as some form of NPI licensing, where the differences between ‘real’ NPI licensing and NC are accounted for by additional assumptions. Giannakidou (2000) for example assumes that *n*-words are special NPIs, i.e. universal quantifiers that obligatorily move across negation rather than indefinites in the scope of negation;
- (iii) *the syntactic agreement approach* (Ladusaw 1992, Brown 1999, Zeijlstra 2004, Watanabe 2005), where NC is seen as a form of syntactic agreement with respect to a single negative operator, in a way similar to subject-verb agreement.

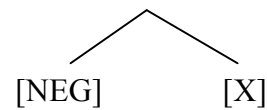
A proper evaluation of these three approaches is beyond the scope of this study. However, in both the first and the third approach NC is already taken to be a different phenomenon than lexical or NPI licensing. And in the analyses that consider NC as a form of NPI licensing it is not possible to consider *n*-words as mere NPIs. Hence, in either case there is firm ground to consider the phenomena as distinct.

For two reasons, we adopt the syntactic agreement approach. First it accounts for many problems that the other two approaches have been facing (cf. Zeijlstra 2004, Watanabe 2005) for an overview. Second, in the current state of minimalist syntactic reasoning (Chomsky 1995, 2001, 2002) the assumption that NC is a form of syntactic agreement requires a feature checking relation between interpretable ([iNEG]) and uninterpretable ([uNEG]) features. However, in languages that do not exhibit NC, every NI corresponds to a semantic negation and therefore there is no solid ground for the existence of a formal [u/iNEG] feature. In these languages negation does not trigger any syntactic operation (triggered by uninterpretable features), therefore there is no positive evidence for language learners to take negation to be a formal feature, following the line of reasoning by Iatridou (1990), Chomsky (1995), Thrainsson (1996), Bobaljik & Thrainsson (1998) and Zeijlstra (2005) amongst many others (but not by e.g. Cinque 1999). The prediction would then be that non-NC languages do not exhibit a formal feature [NEG], which may project itself (Giorgi & Pianesi 1997), as illustrated in (50). As a result negative heads (X°) are predicted not to be available in non-NC languages. This prediction is borne 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.

(50) a. NC: [u/iNEG]/[X]



b. No NC: [X]



So far we have seen that whereas lexical licensing, naturally, takes place within the lexicon, NC is a phenomenon that is constituted by syntax. The next question concerns the locus of NPI licensing.

Most researchers in the field of NPI licensing argue that it is a pragmasemantic phenomenon. As we demonstrated in 5.1, NPI licensing is not constrained by syntactic locality conditions. Moreover, one of the central questions in the study of NPIs is which property of certain indefinites, such as English *any*, causes the fact that NPIs are only allowed to occur in particular contexts. A tradition of reasoning (initiated by Kadmon & Landman (1992), followed by Krifka (1995), Lahiri (1998) and Chierchia (2001)) argues that this has to do with the fact that NPIs exhibit domain widening effects and are subject to a strengthening condition. Much simplified, this means that a proposition containing an NPI implicates that its truth value does not change in the case of subsets of an expanded domain. A sentence such as (51)a should then have a reading as (51)b. Now, suppose John has a potato in his kitchen. We may expand the domain to John's house and then reduce it again to John's living room. As it is not necessarily true that John has a potato in his living room (51)a violates its domain expansion conditions and is therefore ruled out. However, in the case of sentence (52), where a negation is included, these conditions are fulfilled: if John has no potato, this holds for the kitchen, the living room, etc.

- (51) a. John has any potato
b. John has a potato

(52) John hasn't any potato

Now, we can return to the discussion about the nature of NPI licensing. Given the above considerations, we take NPI licensing to be a pragmasemantic phenomenon. This means that the locus of NPI licensing is not in the lexical or syntactic component of grammar, from which it follows that it exhibits different properties than the other examples of licensing of indefinites that we have discussed before.

To summarize, we demonstrated that lexical licensing, NC and NPI licensing are different phenomena and we explained this relatively rich variety of licensing relations as a result from the fact that licensing may take place in each component of grammar: in the lexicon, in syntax or in the pragmasemantic component.

6 Conclusions

In this paper we have reached the following conclusions:

NIs in languages such as Dutch and German 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. For split readings, the negative operator is interpreted in a higher copy and the indefinite in a lower copy of the NI.

The landscape of licensing relations between a negative operator and an indefinite consists of three different mechanisms: NPI licensing, which is a result of semantic context dependencies, NC which results from syntactic feature checking and split-scope effects that are due to the complex lexical structure of NIs.

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