

# *Braucht niemanden zu scheren*: NPI Licensing in German

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## 1 Introduction

Negative polarity items (NPIs) are words or idiomatic phrases that prototypically occur in an appropriately characterized negative environment. Two classical examples are *any* and *ever*.

- (1) I \*(**don't**) think we have any French fries.
- (2) I **haven't**/\***have** ever been to Torino.

NPIs have been studied intensely in several linguistic frameworks since Klima (1964). Since they may occur both in the scope of negation as well as in a variety of other semantically or pragmatically related environments (such as interrogatives, antecedents of conditionals, modifiers of superlative and universal NPs, complements of adversative predicates, to name a few), one very active and controversial research area is the detailed description of possible licensing contexts. One of the first steps towards such an NPI licensing theory was taken by Ladusaw (1980), who established that NPIs can only occur in downward-entailing (DE) contexts, building on an idea from Fauconnier (1975). In the face of a number of open questions concerning the standard Fauconnier-Ladusaw theory of NPIs, there has been further elaboration on this, as well as alternative analyses, some of which will be briefly sketched in Section 2 below. None of the semantic theories of NPIs have as yet been integrated into HPSG.

The aim of the present paper is twofold. (1), we will present new representative data from German which highlight the kinds of distributional restrictions NPIs exhibit within the broader range of licensing domains known from the literature and indicated above, and (2), we will propose an architecture for an NPI licensing theory in HPSG.

## 2 Topics in NPI Licensing

**Semantics** According to the theories proposed in (Kadmon and Landman, 1993; Krifka, 1995; Chierchia, 2005), NPIs have the lexical properties of domain widening and strengthening. For example, the use of *any* leads to a stronger utterance and the denotation of the modified NP contains more elements (even marginal or unexpected items):

- (3) There are no birds in this zoo, there aren't even penguins.  
– No, there aren't any birds in this zoo.

NPIs are banned from semantically non-licensing contexts such as affirmative or upward-entailing contexts. They may introduce alternatives to the foreground information which induce an ordering relation of specificity. The NPI itself denotes the most specific element on this scale. This idea works well for indefinite NPIs and minimizers such as *a drop* or *a wink*, or even for modal verbs such as *brauchen* ('to need') in German. However, it is still unclear how this idea can be applied to NPIs in general, e.g. *sonderlich* ('particularly') or *scheren* ('to care').

Zwarts (1996; 1997) argues for a hierarchy of NPIs in which the different classes of NPIs are licensed by certain increasingly restrictive logical properties of their respective context. He distinguishes between superstrong NPIs (licensed in anti-morphic contexts), strong NPIs (licensed also in anti-additive contexts), and weak NPIs (licensed in all downward-entailing contexts). This quite fine-grained hierarchy is empirically motivated with Dutch data. Krifka (1995), in contrast, uses different concepts for a similar distinction between strong and weak NPIs. For example, he restricts strong NPIs to emphatic contexts. It is an open question whether one can mimic a more fine-grained hierarchy such as the one presented by Zwarts using Krifka's analysis.

A further problem for purely semantic characterizations of NPI licensing domains arises from what Linebarger (1987) calls an "immediate scope constraint", forbidding any quantifier to intervene between an NPI and its licensing (negative) quantifier. It is not obvious exactly which semantic approach could implement this essentially syntactic constraint. In a similar vein, Sailer (t.a.) argues for a decomposition analysis of *few*. The reading that licenses NPIs is described as  $\text{many}'x(\phi)(\neg\psi)$ . However, semantic approaches seem to be indifferent concerning the exact syntax of LF structure.

**Pragmatics** Even though Krifka (1995) takes pragmatic factors into consideration, there are approaches which may be better relegated to the "pragmatic corner". For example, de Swart (1998) argues that the possibility or impossibility of inverse scope configurations in which an NPI precedes its negative licenser can be explained by taking the pragmatic implicatures triggered by the NPI into account. She is thus able to explain the contrast between the impossibility of bare NPI subjects preceding clause-mate negation and legitimate NPIs embedded in indefinite nominal or sentential constituents preceding the negative licenser on pragmatic grounds.

**Other Restrictions** Whereas early research postulated c-command as a necessary condition on the structural relationship between each legitimate NPI and its licenser, subsequent research has shown that the c-command condition cannot be maintained (Hoeksema, 2000). It has been replaced by a number of morpho-syntactic and semantic-pragmatic observations which have proven very recalcitrant to a unified theory. Here we mention just a few of the most prominent properties involved in NPI licensing.

The licensing conditions of NPIs depend on their lexical category and on whether or not they are scopal elements. Indefinite NPIs are often impossible to topicalize in English (unless they are embedded in a topicalized constituent), which distinguishes English from Dutch. For adverbials such as *for the life of me* topicalization is impeccable even in English. In general, the possibility of an NPI to precede its licenser through topicalization varies widely across as well as within languages. This variation excludes both simple cross-linguistic semantic generalizations and syntactic generalizations based on properties such as syntactic category or type of quantificational expression. Topicalization can be further differentiated into long and short topicalization, with some NPIs being restricted to short topicalization, while others permit unbounded extraction.

Other well-known facts concern quantificational barriers for the licensing relationship. Many NPIs require licensing in the immediate scope of a negation (or other appropriate) operator such as a negative quantifier ( $\neg\exists$ ). Intervening quantifiers or intervening definiteness may block their licensing. Unfortunately, there are uncontroversial counterexamples even to the blocking effect of definiteness, and their nature is not at all understood yet. Similarly, semantic and syntactic properties of a predicate whose dependent an NPI is, and the type of argument of the NPI or the semantic class of an NPI adjunct determine its felicity. Some authors distinguish strict and weak NPI licensing depending on whether an NPI is licensed by a clause-mate negation or by negation in a superordinate clause. Many NPIs such as temporal perspective adverbs in English require local licensing (modulo licensing in neg-raising contexts, see Sailer (t.a.)), whereas others are more liberal and are satisfied with a non-local lexical or non-lexical licenser. Van der Wouden discusses

cases of NPIs which require licensing by a negation outside of a more local syntactic domain in which they behave like Positive Polarity Items (van der Wouden, 1997, p. 134).

### 3 A Collocational Approach

The theory of van der Wouden (1997) conceptualizes the basic property of polarity sensitivity in natural languages differently. In van der Wouden's view, polarity sensitivities are collocational restrictions. He regards NPIs as collocates which have a meaning of their own and exhibit idiosyncratic restrictions on their contexts. Put differently, NPIs must be triggered by an appropriate context – their collocate. This perspective predicts lexical idiosyncrasies in NPIs which are related to those we observe in other elements with a varying degree of frozenness, such as idiomatic expressions. In the following, we will investigate four German NPIs which support van der Wouden's assumptions.

#### Data from German

1. *sich um etw. scheren* ('to care about sth.') is a verbal NPI which is licensed by DE contexts and questions. The example shows a prototypical case, in which *scheren* is licensed by a clause-mate negation:

Die Helden, wenn man sie denn so nennen will, scheren sich nicht um Moral -  
the heroes if one them then so call wants, care themselves not about morality -  
es geht ihnen einfach nur ums Geld. (DEREKO: *taz* 1998/1, s166)  
it goes them simply only about money.

'These heroes, if one might call them that, don't care about morality - it's all about money.'

2. *keinen Hehl aus etw. machen* ('to make no secret of sth.') is a nominal NPI, which is licensed by DE contexts and questions. A negation can either occur in the NP (as in 'make no secret'), in the VP (as in 'without making a secret'), or may be contributed by another argument of the verb (as in 'nobody makes a secret of sth.'). In the following case the negation is contained in *never*. The noun *Hehl* is part of an idiomatic expression, thus, the verb *machen* and the PP must co-occur as well.

Daraus hat er nie einen Hehl gemacht. (DEREKO: *taz* 1998/3, s92921)  
Out-of-it has he never a secret made.

'He never made a secret of it.'

3. *von ungefähr* ('by chance') is an adverbial NPI which is licensed in questions, anti-morphic (*not*), anti-additive (*nothing*), and DE contexts. The adverb *nicht*, if present, has strong tendencies to attach to the *von*-PP. This is illustrated by the example below, in which the NPI is topicalized.

Nicht von ungefähr sollen deshalb die neuen Medien eine wichtige Rolle spielen.  
not by chance shall therefore the new media an important role play.  
(*St. Galler Tagblatt*, 04-30-1997)

'For these obvious reasons the new media shall play an important role.'

4. *beileibe* ('really') is an adverbial NPI which is licensed in anti-morphic and anti-additive contexts. It serves to emphasize the negation in a sentence, as shown in the following example.

Es geht ihm beileibe nicht schlecht, er hat eine Stereoanlage und einen weit größeren  
it goes him really not bad, he has a stereo and a far bigger  
Fernseher als ich zu Hause. (DEREKO: *taz* 1998/2, s7951)  
TV set than I at home.

‘He is really not bad off, he has a stereo and a much bigger TV at home than I have.’

**Restrictions not based on other properties** These data confirm that NPIs occur in any part-of-speech. The fact that they are sensitive to negativity does not follow from their grammatical properties. There are (near-)synonyms (*kümmern*, *Geheimnis*, *durch Zufall*, *wirklich*) whose distribution does not reveal any idiosyncrasies. Van der Wouden (1997) compares this fact to the case of idioms whose idiosyncrasies are also not predictable. There are cognate idioms in Dutch and German, one being an NPI and the other an affirmative polarity item (API). Moreover, some intensifiers may display NPI behaviour, whereas others do not.

**Restrictions on different levels** Collocations reveal their idiosyncrasies at different levels. There are morphological anomalies (in the German expression *gehupft wie gesprungen* (‘either way’) the first participle is anomalous), syntactic anomalies (there are bound words which are only acceptable in specific environments) or semantic restrictions (idiom parts in their idiomatic meaning can only occur together with the “rest” of the idiom). In parallel, van der Wouden mentions the Dutch equivalent of the NPI *jdn. ausstehen können* (‘can stand sb.’) which accepts suffixation of *-lich* (‘-able’) only in its negated form *unausstehlich*. Moreover, the antonym of the Dutch positive-polar adjective *verdienstelijk* (‘meritorious’) is an NPI. From the semantic perspective, there is a striking analogy between the parts of a decomposable idiom which carry an idiomatic meaning and never occur without each other, and NPIs, which never occur without their licensing context.

**Abstract Restrictions** Idiosyncrasies of collocations are not limited to the co-occurrence of specific lexemes or morphemes. Even their ability to be modified is subject to restrictions. Take, for example, the modificability of *kick the bucket*. *Kick the proverbial bucket* or *kick the bucket unexpectedly* is impeccable, but one cannot *kick the bucket far away* or *with great determination* and keep the meaning ‘to die’. In German something can *fröhliche/heitere Urstände feiern* (‘celebrate a merry revival’) but not *glückliche Urstände*, even though the semantics of the latter adjective is closely related to the former ones. Analogously, we argue with van der Wouden that NPIs have abstract restrictions on their occurrence, as well, namely their specific triggers as negation, questions, etc.

In the next section, we sketch an HPSG analysis of the data in (1), (2) and (4) using the semantic framework LRS (Lexical Resource Semantics, cf. Richter and Sailer, 2004) and, in addition, a collocation module along the lines of Soehn (2004).

## 4 Analysis

An analysis of NPI licensing domains minimally presupposes a framework in which the notions of a DE environment, the relative scope of quantificational expressions and other semantic concepts can be expressed. Moreover, the data indicate that we must be able to refer to four things: inherent lexical properties of quantificational expressions; morpho-syntactic properties of lexical and phrasal signs; various syntactically defined domains in which NPIs may occur; and idiosyncratic lexical context requirements of the NPIs themselves. In a more fine-grained analysis, we should also be able to express pragmatic notions such as presuppositions or conversational implicatures and their relationship to the truth conditions of utterances.

Here we will ignore pragmatics and concentrate on the core syntactic and truth-conditional factors. As a semantics which supports all necessary semantic concepts we will choose LRS. The conditions on licensing domains will be expressed in terms of Soehn’s (2004) theory of the attribute COLL (Context of Lexical Licensing), which provides the foundations of a theory of syntactic domains while eschewing some of the problems of the unrestricted expressiveness of its precursor, Sailer (2003). The full paper will contain a systematic survey and discussion of data to justify the analysis we will only sketch below.

**Verbs** A lexical entry of a verb such as *scheren* (‘to care’) is sketched in (Fig. 1 left). The collocational restriction which indicates that it is an NPI, is contained in the value of COLL. The only element in this list is a *barrier-object* which is the whole utterance in which the verb occurs. Barriers are phrases of a certain kind (*utterance, complete-clause, np, ...*) which are identified as nodes in the syntactic configuration above the sign in question (here: the verb *scheren*). The LICENSING-PRINCIPLE guarantees that a barrier dominates the sign and meets all the criteria mentioned in the sign’s lexical entry: the value of the feature LF-LICENSER (LF-LIC) is identical to the barrier’s LF feature. Here, the EXTERNAL-CONTENT (EXC) of the utterance in which *scheren* occurs must be such that the semantic content of *scheren*, i.e. its MAIN value,  $\square$ , is either in a DE environment (first disjunct) or in the scope of a question operator (second disjunct). DE-op is an LRS meta-description to be spelled out as a description of (the appropriate arguments of) logical operators which induce a DE environment. To be able to identify the relevant environment efficiently, we presuppose lexical decomposition of the semantic contributions of the corresponding lexical licensers. For reasons of space we cannot explain the collocation-module here in due detail. The necessary background and all relevant definitions can be found in Soehn (2004).

**Particles** The lexical entry of *beileibe* (‘really’) is analogous to the first one mentioned in many ways and the mechanism is exactly the same (see Fig. 1 right). However, *beileibe* is not licensed by DE contexts and questions, which causes the restriction on the EXC to be stronger than for *Hehl*: it demands that anti-additive (AA-op) and anti-morphic (AM-op) operators take scope over it. As the licensing element must occur in the same clause as the particle itself, the barrier is defined accordingly.<sup>1</sup> We consider it an advantage of the collocation module used here that restrictions can be imposed in a scalable way. As the restrictions are more local, there is no need to go through the whole utterance to find them.

**Nouns** With *Hehl* (‘secret’, see Fig. 1, lower AVM), we have chosen an example that illustrates the interplay between polarity-related and idiomatic restrictions. The first *barrier-object* on the COLL list is again an *utterance*, restricting the semantic content of *Hehl* to DE environments and to the scope of questions. The second element on the COLL list is a *complete-clause* with a different kind of restriction: the value of the attribute LOCAL-LICENSER is identical to the LOCAL value of the clause in which *Hehl* appears. The head verb of this clause must be *machen*, which is expressed by means of the attribute LISTEME (cf. Soehn, 2004). In Soehn’s analysis, there is a special version of *machen* that subcategorizes for the noun *Hehl*, and a PP, thus ensuring the co-occurrence of all parts of this idiomatic expression.

This example demonstrates that the combinatorial system of LRS alone is not strong enough to handle the context restrictions of NPIs, and a treatment in terms of COLL is called for. An occurrence restriction which is formulated purely in terms of restrictions on the EXCONT of NPIs wouldn’t be sufficient for the following reason: With a semantic EXCONT restriction, the noun *Hehl*

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<sup>1</sup>In addition, *beileibe* has the syntactic restriction that it always modifies the licensing element (all n-words basically), which we omit in our sketch of the lexical entry. The fact that *beileibe* can be topicalized alone (“Beileibe zahlen nicht alle Konzerne, die in ihrer Bilanz einen Gewinn ausweisen, auch Gewerbesteuer.” in *Mannheimer Morgen*, 09-03-2002) is compatible with this analysis.

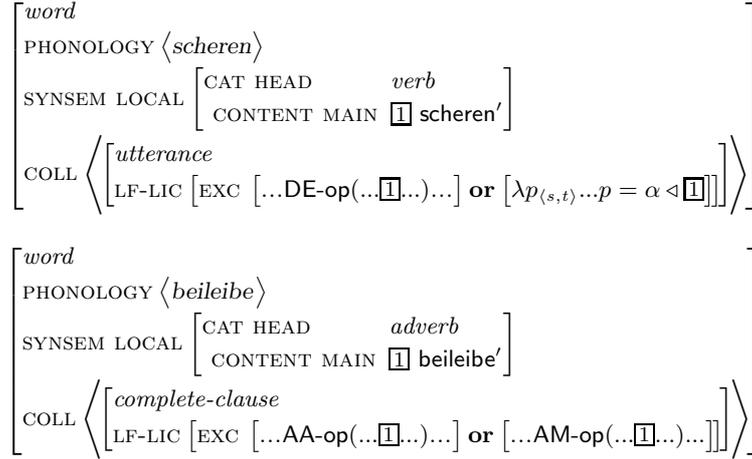


Figure 1: Lexical entries of *scheren* and *beileibe*

in *kein Hehl* (‘no secret’) would only constrain the semantics of its maximal projection to contain a negation. However, if the negation were outside of the NP and inside the VP (as in ‘nobody makes a secret of sth.’) the maximal projection of the noun wouldn’t contain a licensing negation, but that of the verb (of which the NP is an argument) would. Thus, the occurrence restriction of *Hehl* would have to be different in two uses of one and the same expression, semantic for the NP domain and collocational for the VP domain and beyond. This would be conceptually unsatisfying.

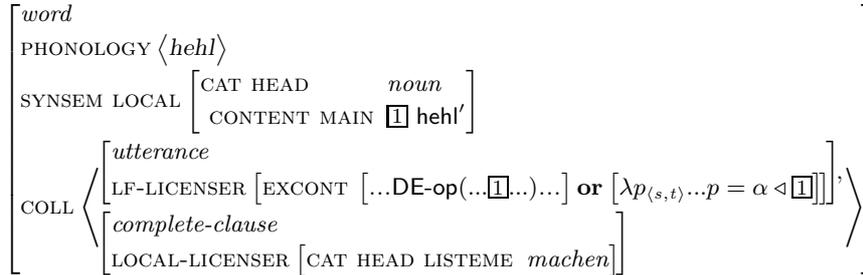


Figure 2: Lexical entry of *Hehl*

## 5 Open Questions

We showed that our analysis can model complex cases of NPI licensing in German, taking into account inherent lexical properties of quantificational expressions and NPIs. Morpho-syntactic properties and various syntactic domains in which NPIs may occur were accommodated in the analysis. The full paper will also discuss details of tighter scope restrictions of certain NPIs and will elaborate on the lexical decomposition of licensing operators and our characterization in LRS of DE, anti-additive and anti-morphic contexts.

As pointed out in Section 2, pragmatic effects of presuppositions or conversational implicatures play also a role in NPI licensing (cf. the licensing of *beileibe* in non-negated phrases which deny their implied negative counterpart). Further research will have to reveal to what extent our basic architecture can be extended to accommodate these phenomena.

Most importantly, however, much more research is needed to identify the relevant (classes of) NPIs for a given language. Our ongoing research aims at improving the empirical base for German.

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