

Nominalization in Context - Conflicting Readings and Predicate Transfer

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Abstract

Nominalizations denote different sortal types, e.g. events, states, result states and objects, depending on a variety of parameters. We focus on the sortal readings of *ung*-nominalizations in German that are triggered by the sortal restrictions of adjectival modifiers and the predicates that govern the nominalizations. We start with the observation that some nominalizations can occur in a context where they have different sortal readings imposed by the adjectival modifier on the one hand and by the predicate on the other. We then provide a new analysis for these cases based on Nunberg's notion of predicate transfer. Thus we assume that the predicate extends its meaning and thereby imposes different selectional restrictions, rather than shifting the meaning of the nominalization.

1. Introduction*

Deverbal nominalizations derived with *-ung* in German display different sortal readings (e.g. events, states, result states and objects) depending on the context that they occur in. We concentrate on contexts formed by adjectival modifications and by the selectional restrictions of the predicates the nominalizations are arguments of. There are cases that show conflicting selectional restrictions and hence pose problems for the compositional process as in (1) and (2). We mark the selectional restriction on the adjective or verb by the superscript *EV* for event and *RE* for result.

In (1) the adjective *wiederholt* ‘repeated’ selects an event reading of *Messung* ‘measuring / measurement’, while the predicate *belegen* ‘show, demonstrate’ selects the result reading in the sense that the results or the figures of the measurements show that something is the case. Note that the plural in (1) does not necessarily select for a result reading (as claimed by Grimshaw (1990)).

- (1) *Die [wiederholten]^{EV} Messungen [belegen]^{RE}, dass keine Besserung eingetreten ist.*
‘The [repeated]^{EV} measurements [show]^{RE} that there has not been an improvement.’

While a shift from an event reading to a reading referring to its result seems more natural, we also find the reversed order of the respective sortal readings as in (2), where *vorliegend* ‘present’ selects a result object and *durchgeführt* ‘conducted’ an event:

- (2) *Nur wenn man die genaue Bezeichnung des Videosystems kennt, kann man abschließend sagen, ob die [vorliegende]^{RE} Messung [regelmäßig durchgeführt]^{EV} wurde und somit verwertbar wäre.¹*
‘You can only tell whether the [present]^{RE} measurement [was conducted regularly]^{EV} and is hence utilizable, if you know the precise name of the video system.’

These examples illustrate cases of conflicting readings selected by different selectional properties of the involved modifiers and predicates. This paper will address the question how we can analyse such constructions. In the literature it is generally assumed that the nominalization itself shifts its meaning to meet the requirements of contextual restrictions one by one or that the nominalization has an underspecified meaning, thus agreeing with different selectional restrictions. We do not think that such a solution can be applied to examples like (1) and (2). In both examples the selectional restrictions of the adjective require a reading different from the one the predicate selects. Therefore, we suggest a new analysis which preserves the first reading of the nominalization (triggered by the adjective) and shifts the meaning of the predicate to a different (extended) reading that fits the already fixed sortal type of the nominalization. According to this analysis, once a sortal reading is suggested by the first expression it remains fixed. We assume that the selectional restrictions of the first expression in the sentence have primacy

over the restrictions expressed by the second², i.e. it is always the first indicator that determines the reading of the nominal, no matter if it is an event or a result indicator.

To gain a deeper understanding of the interaction between different contextual restrictions we will first take a closer look at the different kinds of selectional restrictions that come about by different expressions (section 2). Some further examples in section 3 will show that the conflicting readings are a common phenomenon in discourse and can occur in various constructions. As a basis for the introduction to the notion of predicate transfer (Nunberg 1995, 2004), we will contrast several other types of sortal shifts in section 4 to test if they can account for conflicting readings and will then present a different analysis in section 5 before we convey it to our examples. Section 6 discusses the pragmatic restrictions for the very powerful mechanism of predicate transfer concerning simple nouns as well as nominalizations.

2. Types of selectional restrictions

As we have seen in examples (1) and (2), different types of expressions, henceforth called indicators, display different selectional restrictions and specify the actual reading of the nominalization in context. We can further subdivide this class of indicators into different types according to their position and their functionality. We will give examples for local and structural indicators as well as for the temporal structure of the discourse as an indicator.

2.1 Local indicators

Local indicators can appear as a modifier of the nominalization within the DP and as the main predicate of the clause. Event and process readings are e.g. indicated by modifiers and predicates that refer to their duration or date, while result objects can e.g. undergo physical change and have a physical location. Examples for these properties are listed in tables 1 and 2:

Table 1. Local indicators for event readings

Predicates		DP modifiers	
Time frame predicates:	<i>beginnen / aufhören / weitergehen</i> to 'begin' / 'stop' / 'continue'	Dates:	<i>am 7. Juli</i> 'July 7 th '
Duration:	<i>dauerte 6 Monate</i> 'takes 6 months'	Process indicating adjectives:	<i>vorsichtig</i> 'cautious'
		Iteration:	<i>permanent / wiederholt</i> 'permanent' / 'repeated'

Table 2. Local indicators for result object readings

Predicates		DP modifiers	
Physical change:	<i>überreichen / erscheinen / zerstören</i> 'present' / 'appear' / 'destroy'	Size, shape etc.:	<i>lang, hoch, rot</i> 'long, high, red'
Location:	<i>auf dem Tisch liegen / vorliegen</i> 'lie on the table' / 'be present'	Location:	<i>vorliegend, linke / r</i> 'present', 'left'
Internal structure:	<i>(200 Seiten / Teile) umfassen</i> 'consist of 200 pages / parts'	Internal structure:	<i>(200 Seiten / Teile) umfassend</i> 'consisting of 200 pages / parts'

These indicators are well studied (cf. Ehrich and Rapp 2000, Heid et al. 2007) and many of them can appear in the form of a modifier as well as of a predicate. As already noted in section 1, we mark these indicators with the superscripts EV for event and RE for result objects in example sentences. We use this notation for convenience to show the sortal restriction of the modifier and the predicate. In addition to local indicators like these, we find a variety of other types exemplified in the next chapters.

2.2 Structural indicators — coordination and sense relations

If we have a construction with coordination within the sentence we expect the two conjuncts to be of the same sortal type. If we look at example (4) we recognize that *Einschätzung* ‘estimation’ is unambiguous and can only be interpreted as an event and since only two events can diverge and not their results; so we can infer that the conjunct *Messung* ‘measuring’ has an event reading, too:

- (4) *Die Divergenz zwischen [Einschätzung]^{EV} und [Messung]^{EV} könnte unter diesen Umständen also bedeuten: Der Mensch hört allmählich schlechter, aber er merkt es nicht.* (cosmas³)
‘The divergence between the [estimate]^{EV} and the [measuring]^{EV} under these circumstances could hence mean: Humans hear gradually worse, but they do not recognize it.’

The structuring within the sentence plays a role here but we should also look at examples with coordination across sentences as in (5), where we have two synonymously used nominals in sequent sentences:

- (5) *Bei der Messung [am 30. Juli]^{EV} an der Romanshorerstrasse 12 war es gar fast jedes dritte Fahrzeug, das die Geschwindigkeitsbegrenzung überschritt. Auch bei der [Kontrolle]^{EV} auf der Staatsstrasse im Rohrenmoos beim Restaurant Traube waren es nicht viel weniger.* (cosmas)
‘During the measuring [on July 30th]^{EV} at Romanshorerstrasse 12 even every third car drove too fast. At the [check]^{EV} at Staatsstrasse in Rohrenmoos at the restaurant Traube it also was not fewer.’

The date *am 30. Juli* ‘on July 30th’ already indicates that *Messung* ‘measuring’ refers to an event. In the next sentence *Kontrolle* ‘check’ is used synonymously to avoid repetition, and since it can only refer to an event we have another indicator so that *Messung* ‘measuring’ has a strong preference for an event reading, too. In addition, the anaphoric function of the discourse particle *auch* ‘also’ hints at this synonymous relation as well. Another way to determine the sortal reading of a nominalization is by means of sense relations as in (6):

- (6) *Die Messung [am Handgelenk]^{EV} ist von allen [Methoden]^{EV} die praktischste. Das Gerät wird mit der Manschette am linken Handgelenk befestigt.*
'Of all [techniques]^{EV} measuring [on the wrist]^{EV} is the most practical one. The device is attached to the left wrist with the wrist band.'

In this context *Methoden* 'methods' functions as a hypernym to *Messung* 'measuring' and as a method can only refer to an event, the hyponym *Messung* can be inferred to denote an event, too. As we have seen, there are different kinds of indicators other than the well studied local ones. In addition, we even find similar phenomena within the wider discourse exemplified in the next subsection:

2.3 Temporal structure of the discourse as an indicator:

In (8) the ongoing discourse promotes or warrants a sortal shift: The verb *abschließen* 'complete' is telic and hence a result from this action is suggested.

- (8) *Die Messung ist gestern [abgeschlossen worden]_{EV}. Sie [spricht eine deutliche Sprache / fiel positiv aus]_{RE}.*
'The measuring [was completed / finished]^{EV} yesterday. It [speaks for itself / turned out positively]^{RE}.'

We can proceed with this result in the ongoing discourse and even refer back to the nominalization with the pronoun *sie* 'she' although the pronoun refers to a type different from the antecedent: This is possible since the measuring that was interpreted as an event in the first sentence has been finished. These discourse phenomena are more or less neglected in the literature, but aspectual properties of the predicates and anaphoric relations are crucial for the interpretation in many cases (see ter Meulen and Smessaert 2004).

- (9) *Die Emissionen von Feuerungsanlagen müssen alle zwei Jahre überprüft werden. Die [im März durchgeführte]^{EV} Messung zeigt im [nun vorliegenden Bericht]^{RE} auf, dass die für diese Feststoff-Feuerungsanlage anzuwendenden Emissionsgrenzwerte deutlich unterschritten und somit bestens eingehalten werden. (cosmas)*

‘The emissions of firing systems have to be checked every two years. The measurements [conducted in March]^{EV} show [in the report now present]^{RE} that the prescriptive limits for this solids-firing system are definitely under-run and hence are optimally adhered to.’

In (9) the temporal structure is emphasized in addition with the date *im März (durchgeführt)* ‘(conducted) in March’ and the present participle (*nun*) *vorliegend* ‘(now) present’, which shifts the perspective to the present. The result of the measuring is also denoted by the non-derived object ‘report’.

In this section we have discussed some means for sortal indication, which play a role in the composition process. Some apply locally and some apply in the wider context. In the following we will primarily use a structure with an adjective indicator and a predicate indicator expressing conflicting selectional restrictions with respect to the type of sortal reference.

3. Conflicting Readings

We have seen that there is a variety of methods to indicate a reading in context and we often find more than one indicator for the referential sort of the nominalization. Thus, it is not surprising that we also find a great number of instances where the different indicators are in conflict, i.e. where we have only one token of the nominalization that corresponds to two types (event and result object).⁴ For the sake of clarity we will focus on examples with local indicators with the ordering *Event-Result* and *Result-Event* to investigate this phenomenon in more depth. The examples will show that we find many such examples, that the ordering of the two indicators does not play a role for acceptability and that these examples do not strike us as marked or unusual.

Event-Result

In (10) the adjective *langwierig* ‘tedious’ modifies an event whereas the VP *brachte mir viel Geld ein* ‘earned me a lot of money’ predicates over a result object⁵:

- (10) *Die [langwierige]^{EV} Übersetzung [brachte mir viel Geld ein]^{RE}.*
‘The [tedious]^{EV} translation [earned me a lot of money]^{RE}.’

We can also extend this analysis to cases with a sentence coordination structure: The first part of example (11) includes the telic verb *abschließen* ‘complete’ which indicates the completed event of translating a work, but the conjunction proceeds with the result object predicate *erscheinen* ‘appear’:

- (11) *Die Übersetzung dieses Werks konnte bereits 1990 [abgeschlossen werden]^{EV} und als erster Band des Gesamtprojekts [erscheinen]^{RE}.*
‘The translation of this work could already [be completed]^{EV} in 1990 and could [appear]^{RE} as the first volume of the overall project.’

Result-Event

One could be tempted to think that the transition from an event to an object that results from this event is somewhat easier to achieve than from the result to the event, but we also find examples like (12) and (13):

- (12) *1514 [überreichte]^{RE} er Louis XII die [schwierige]^{EV} Übersetzung von Texten des Thukydides.⁶*
‘In 1514 he [gave]^{RE} Louis XII the [difficult]^{EV} translation of texts by Thucydides.’
- (13) *Die Übersetzung [lag endlich auf dem Tisch]^{RE} — sie hatte wirklich [6 Monate gedauert]^{EV}.*
‘The translation [was finally on the table]^{RE} — it had really [taken 6 months]^{EV}.’

The backshift in time in the previous example seems to be emphasised by the construction with the adverb *endlich* ‘finally’, whereas the second sentence gives kind of a motivation or explanation for the use of the adverbial modification with *endlich* ‘finally’. We can only hint at the additional conditions of temporal structure here, which we should pay attention to.

Result-Event-Result

We even find cases where there is a shift from an interpretation as a result to an event, and we can again proceed with a result indicator as in (14):

- (14) *Nur wenn man die genaue Bezeichnung des Videosystems kennt, kann man abschließend sagen, ob die [vorliegende]^{RE} Messung [regelgerecht durchgeführt]^{EV} wurde und somit [verwertbar]^{RE} wäre.*

‘You can only tell whether the [present]_{RE} measurement [was conducted regularly]_{EV} and is hence [utilizable]_{RE}, if you know the precise name of the video system.’

In these examples we have at least two different reading triggers, one within the DP and one as the main predicate of the sentence: *vorliegend* ‘present’ indicates a result, just like *verwertbar* ‘utilizable’, whereas only an event can be conducted regularly (*regelgerecht durchgeführt*). The question arises as to how the conflict can be solved, since it poses a problem for compositionality⁷ and annotation, as the nominalization’s reading cannot be definitely and uniquely determined.

Before we clarify Nunberg’s general notion of predicate transfer, which we will then apply to nominalizations, we will first give an overview on different meaning shift principles and discuss whether they could account for these contrasting readings.

4. Types of Sortal Shift

Since nominalizations can have different sortal readings — we have focused on event and result object readings here — depending on the context they occur in, we need a theory of sortal shift to account for how this ambiguity comes about. Most approaches attribute a sortal shift to the nominalization itself, as we will outline in 4.1 and 4.2, but they differ in that they involve lexical, structural and semantic types of shifts. We have to keep in mind that they deal with the potential of nominalizations to display different readings in context in general and not with copredication examples in particular. In section 5 we will deal with a pragmatic type of shift that does not focus on the nominalization itself and we will then apply it to our nominalization examples.

4.1 Underspecification analyses

There are different views on the question whether nominalizations are underspecified and whether only one part of them (base verb, suffix) is concerned. Theories on the lexical semantics of affixes deal with their contribution to the meaning of the (sortally ambiguous) derivatives and the question whether an affix has an abstract core meaning common to all its occurrences. The explanation for the variety of sortal references would be

that *-ung* is underspecified or polysemous and needs contextual information (from the base and the sentence environment) to specify its function. See Plag (1998) and Lieber (2004) for underspecified representations of the lexical semantics of affixes, which treat them similarly to the underspecified meanings of ambiguous words.

Bierwisch (1989) assumes that the nominalization as a whole has an abstract core meaning, which all readings have in common and which is conveyed into specified forms by interaction with the conceptual system, analogous to his work on simple nouns (Bierwisch (1983)).

The systematic shift from event readings to result readings and the interpretation of nominalizations could also be attributed to differences in its internal structure (cf. Alexiadou and Schäfer (this volume), Alexiadou 2001, Rossdeutscher et al. 2007). According to this view, different layers of functional structure are responsible for the interpretation of nominals. Hence, an event reading differs from the result reading not only in its referential properties, but also in its functional structure accounting for the syntactic behaviour of event or result nominalizations. However, it is not clear to us, how such a structural approach can account for different readings of one and the same occurrence of a nominalization. On the other hand, an approach that allows for the underspecification of the structural properties, and therefore the sortal reading, has problems with examples as in (15) and (16) where we do find a conflict that is not resolvable and therefore leads to ungrammaticality or at least to incoherence:

(15) #Die [hölzerne]^{RE} Absperrung [hat lange gedauert]^{EV}.
'The [wooden]^{RE} fencing [has taken a long time]^{EV}.'

(16) #Die [gemeinsame]^{EV} Bemalung der Wand [hat Flecken]^{RE}.
'The [collective make-up / painting]^{EV} of the wall [has got stains]^{RE}.'

Here the adjective restricts the reference of the nominalization to one type such that the selectional restriction of the predicate is in conflict with it. The conflict cannot be resolved, other than in cases as (1) or (2), where a coherent interpretation is possible. We will argue below that a shift in the selectional restriction of the predicate is only possible if there is an obvious relation between the lexical meaning of the predicate and the extended meaning of the predicate.

4.2 Conceptual shift / coercion as lexical ambiguity:

Pustejovsky (1995) deals with alternations that appear with simple nouns as well. Frequent types are among others the product-producer alternation as with *newspaper* in (17) and the process-result alternation as with *merger* in (18):

- (17) a. John spilled coffee on the newspaper.
b. The newspaper fired its editor.
- (18) a. The company's merger with Honda will begin next fall.
b. The merger will lead to the production of more cars.

He assumes that certain alternations are systematic and should be compositionally derived. Hence, he enriches the lexicon with generative and compositional aspects, so that we have a structural template to which semantic transformations can be applied. This template consists e.g. of aspects like telic role or purpose to which certain modifiers can refer then.

In (19) the verb *begin* needs an event type as a complement, so we have to coerce the noun *novel* to an event in which the novel plays a salient role. Depending on the context, this can lead to different interpretations on the basis of the lexical entry:

- (19) a. The author began the novel last month. (= write the novel)
b. John began the novel last month. (= read the novel)

Similar alternations can be observed with nominalizations and thus Pustejovsky treats simple nouns and nominalizations equally with respect to this:

- (20) difficult translation, difficult text
a. difficult to write (event)
b. difficult to read (result)

For an interesting combination of an underspecification account with a conceptual level of representation, see von Heusinger and Schwarze (2006). They assume that conceptual information of the context selects one particular function of an otherwise underspecified form. Again, this approach would have problems accounting for conflicting readings.

5. Meaning shift as pragmatic enrichment:

As we have seen in the last section, most theories focus on the nominal itself when it comes to its interpretation in context. All these analyses account for the different sortal readings a nominalization can have and for their specification in context, but they would have difficulties in dealing with the conflicting reading cases: We would have to think of two structures or readings in the same context and could not determine the interpretation of the nominalization. We will now turn to another type of (in this case pragmatic) enrichment as an alternative solution for these special cases, which is less systematic and less lexical. This theory was developed by Nunberg (1995, 2004) for simple nouns and we will then convey its principles to nominalizations to see whether they can shed light on examples with conflicting readings as well.

5.1 Predicate transfer in terms of Nunberg:

Nunberg (1979, 1995) developed a theory of pragmatic processes for meaning transfer or meaning enrichment. Nunberg (1995: 1) defines the general notion as follows: “Transfers of meaning’ are linguistic mechanisms that make it possible to use the same expression to refer to disjoint sorts of things.” He maintains the notion of *predicate transfer* especially for context dependent cases⁸ as: “The ham sandwich sits at table 7” where it is in fact not the ham sandwich, but the person who orders it. We will introduce this mechanism in this section rather informally to explain the general assumptions before we apply it to nominalizations and then present its formalisation in section 5.3.

While most researchers have focused on nouns, Nunberg (1995) shows that meaning shift or meaning transfer can affect the argument *or* the predicate in a sentence. He calls the latter *predicate transfer* and illustrates the contrast between the two kinds of metonymic transfer by means of the following examples. (21a) and (22a) are uttered in a situation where a customer hands his key to an attendant at a parking lot (We indicate the shifted meaning or the extended meaning of an expression in curly brackets):

- (21) a. **This** is parked out back.
b. {**This**_{key} = *the car*} is parked out back.
→transfer of argument meaning / deferred ostension

- (22) a. I am parked out back.
 b. I am {*the owner of a car that is parked out back*}
 →predicate transfer

In (21) *this* is used to tell us something about the entity that is related to the key the speaker points at, namely the car and in (22) the speaker says something that concerns himself because he owns the car. The question is whether these examples function in the same way and whether we want to assume that it is always the noun or indexical that is shifted to another entity or something else instead.

We can test whether the subject or the predicate shifts its meaning by a coordination test. Additionally we assume that shifted entities constitute referential islands, i.e. once I have shifted from this_{key} to car, I cannot refer back to key. So in (23a) we shift to car and the second conjunct *may not start* is also predicated on the referent car. However, in (23b), the second conjunct *fits only the left front door* needs an argument of type key, which is not available since the shift is a referential island. Therefore we can say that in (23) it is the subject that shifts its meaning.

- (23) a. {**This**_{key} = **the car**}_{car} is parked_{car} out back and may not start_{car}.
 b. #{**This**_{key} = **the car**}_{car} is parked_{car} out back and fits only the left front door_{key}.

In (24) we have the opposite distribution: In (24a) we can coordinate two predicates that require persons as arguments, but in (24b) we cannot use a second conjunct that requires a car as an argument. Therefore, we assume that the first predicate shifts its meaning, rather than the argument *I*.

- (24) a. I_{person} am {*the owner of a car that is parked out back*}_{person} and have been waiting_{person} for 15 minutes.
 b. #I am {*the owner of a car that is parked out back*} and may not start_{car}.

Although both types of meaning transfer are metonymic of the type owner / car, they differ in whether the transfer affects the argument or the predicate. Other diagnostics for the transfer position by Nunberg show that the number and gender of the demonstrative depend on the intended referent (the car)⁹, and if we have a language with gender marked

demonstratives and adjectives, these agree with the referent (the car). This is not the case with “I am parked out back”; hence we recognize once more that it is not the pronoun *I* that is affected by the transfer principle here.

Note also that if the derived property is expressed by a description here, only deferred ostension is blocked (cf. Nunberg 1995: 111 – 112):

- (25) #The key I’m holding is parked out back.
But: The man with the cigar (Mr....) is parked out back.

Thus, once a predicate is applied to the noun *key* it cannot be shifted. This brings us back to our treatment of the contrasting readings of nominalizations, as we assume that the nominalization cannot be shifted a second time — to match local selectional restrictions — once the first modifier has selected one particular reading. Having considered these tests it should be clear that we have to deal with different kinds of shifts.

Nunberg’s notion of predicate transfer can also account for what he calls “sortal crossings” as in (26), which represent contrasting readings with simple nouns (cf. Nunberg 1995, 2004), by suggesting that we actually deal with two properties of persons here:

- (26) Roth is Jewish and [widely read]_{books}.
→ Roth is Jewish and {an author whose books are
[widely read]_{books} }_{person}

Cases like this resemble our conflicting reading cases with nominalizations since we have two predicates with different selectional restrictions that apply to the same token of a nominal, here a proper name. In the next section, we will convey these considerations to our phenomenon.

5.2 Predicate transfer and nominalizations:

We can apply the mechanism of predicate transfer to our conflicting reading cases, so that we only have one interpretation for the nominal: The pragmatic enrichment allows for the shifting in meaning of the nominalization’s context, rather than the nominalization itself (see above). We repeat examples (1) and (2) as (27) and (28):

- (27) Die [wiederholten]^{EV} Messungen [belegen]^{RE}, dass es keine Verbesserung gab.

‘The repeated measurements show that there hasn’t been an improvement.’

→ Die [wiederholten]^{EV} Messungen {haben Resultate, die [belegen]^{RE}}^{EV}, dass...

‘The repeated measurements {have results that [show]^{RE}...}^{EV}.’

The first indicator *wiederholt* ‘repeated’ modifies an event and so we claim that the composition of this modifier with the nominal already fixes its interpretation. Hence, the second (result-) indicator *belegen* ‘show’ is accommodated to this by enriching it to an event predicate as well, i.e. by filling in that the event is such, that it has results that prove something.

Nevertheless, we do not claim that it is always the event that triggers the enrichment of a conflicting second indicator – in our opinion the order in the sentence determines which interpretation will be adhered to: In (28) we first have a modification with *vorliegend* ‘at hand’, so that the nominalization is indicated as a result reading and is preserved as such by enriching the second (event-) indicator *regelmäßig durchgeführt* ‘conducted regularly’ into a result predicate:

(28) *Nur wenn man die genaue Bezeichnung des Videosystems kennt, kann man abschließend sagen, ob die [vorliegende]^{RE} Messung [regelmäßig durchgeführt wurde]^{EV} und somit [verwertbar]^{RE} wäre.*

‘You can only tell whether the [present]^{RE} measurement [was conducted regularly]^{RE} (...), if you know the precise name of the video system.’

→ ...ob die [vorliegende]^{RE} Messung {das Ergebnis einer Handlung ist, die [regelmäßig durchgeführt wurde]^{EV}}^{RE} und somit [verwertbar]^{RE} wäre

‘...whether the [present]^{RE} measurement {is the result of an event that [was conducted regularly...]}^{EV}}^{RE}

As an intermediate summary, we recognize that since we do not have to shift the nominalization, we only have to deal with one reading for the nominalization; hence predicate transfer allows for an analysis of the conflicting readings which enables us to preserve compositionality.

Nevertheless, this procedure overgenerates in that it also predicts examples like the following to be acceptable:

- (29) #Die [hölzerne]^{RE} Absperrung [hat drei Tage gedauert]^{EV} ..
‘The wooden blocking has taken three days.’
- #Die [hölzerne]^{RE} Absperrung {ist das Resultat eines Ereignisses, das [drei Tage gedauert hat]^{EV}}^{RE}.
#The wooden^{RE} blocking {is the result of an event that [has taken three days]^{EV}}^{RE}
- (30) #Das Resultat der Messung [hat drei Stunden gedauert]^{EV}.
‘The result of the measurement has taken three days.’
- #Das Resultat der Messung {ist das Resultat eines Ereignisses, das [drei Stunden gedauert hat]^{EV}}^{RE}.
#The result of the measurement {is the result of an event that [has taken three days]^{EV}}^{RE}

To be able to account for cases like these, we will present Nunberg’s rule for the notion of predicate transfer and his constraints in the next section.

6. Rules and conditions for predicate transfer

6.1 Salience and Noteworthiness

As the notion of predicate transfer is a very general mechanism we will present Nunberg’s condition and constraints in this section and we will show how it excludes cases like the above ones. For this purpose, we repeat example (22) here:

- (22) a. I am parked out back.
→ b. I am {the owner of a car that is [parked out back]}.

Nunberg (1995: 112) states the following condition on the general applicability of predicate transfer between two properties or predicates, i.e. he tells us in which cases we are able to use one expression instead of another:

(31) **Rule for predicate transfer**

Let A and A' be sets of properties that are related by a salient transfer function $g: A \rightarrow A'$. Then if F is a predicate that denotes a property $P \in A$, there is also a predicate F' , spelt like F , that denotes the property P' , where $P' = g(P)$.

Applied to example (22) where we have the two sets of properties CARS and DRIVERS that are related by the function 'ownership' (or rather "drivership" as we will see), this derives the enriched predicate below in the following way:

(32) **Predicate transfer of *parked out back***

Let *car* and *owner / driver of a car* be sets of properties that are related by a salient transfer function g (being the owner of): $car \rightarrow owner\ of\ a\ car$. Then if *parked out back* is a predicate that denotes the property of *being parked out back* \in *being a car*, there is also a predicate *parked out back'*, spelt like *parked out back*, that denotes the property of *being the owner of a car that is parked out back*, where *being the owner of a car that is parked out back* = g (*parked out back*)

[parked out back] \Rightarrow {the owner of a car that is [parked out back]}

In other words: We have two sets, e.g. cars and owners / drivers (of cars). If these two sets are related in a salient way we can use expressions that primarily refer to one of these sets for the other as well and we do not have to change anything in the lexical form of this expression (though the form corresponds to two properties). Hence, since we have the salient relation of ownership between cars and their owners, we cannot only say that cars are parked somewhere, but we can also say that its owner is parked somewhere: If I own a car it is clear to speaker and hearer that some things that concern the car also concern me as the owner or driver and hence can be expressed as if I was in the car's place. Hence, what this means is that we enrich the predicate while we stick to its lexical form instead of shifting the nominal itself. The meaning of nominals could in general be metonymically shifted to avoid mismatches, but in this theory, another viewpoint is taken for certain examples that fulfill the mentioned condition.

The condition for the application of this mechanism is thus the following:

- (i) there is a salient functional relation between the bearers of the properties

If we only had this constraint the principle would still overgenerate: Imagine e.g. a situation where you have lent your car to someone else- you would not say that you are parked out back then although the ownership relation still holds. Hence Nunberg states an additional constraint, which is more context dependent than the salient relation (i) available in all contexts:

- (ii) the enriched version is noteworthy in the utterance situation for the identification or classification of the bearer.

That means it is noteworthy and helpful to classify customers according to their orders (as in “The ham sandwich is at table 7”) and the situation of a driver through properties of his car. Let us consider some of Nunberg’s examples with simple nouns that fulfill this constraint and some which do not:

- (34) Ringo was hit in the fender by a truck when he was momentarily distracted by a motorcycle.
→ Ringo {owns a car that [was hit in the fender by a truck]} when he was momentarily distracted by a motorcycle
- (35) #Ringo was hit in the fender by a truck two days after he died.
→ # Ringo {owns a car that [was hit in the fender by a truck]} two days after he died.

Obviously, it is not noteworthy for Ringo what happens to his car when he is already dead and so we get an odd sentence if we try to classify his car by a dead man’s name. In Asher and Pustejovsky (2004) we also find examples that are odd for reasons of what they call *discourse coherence*:

- (36) a. The Sunday newspaper weighs 5 lbs and documents in depth the economic news of the week.
b. #The newspaper was founded in 1878 and weighs 5 lbs.¹⁰

6.2 Constraints with nominalizations:

As we have already seen, we can also apply predicate transfer in examples where we have two conflicting indicators for the nominalization. Here, the second indicator is enriched so that it also fulfils the requirements of the first. The rule can hence enrich events as well as results, depending on the ordering within the sentence.

As we have seen, there are also unacceptable examples with nominalizations, which can now be explained: Noteworthiness is not given here either, e.g. the material of a result object (*hölzern* ‘wooden’) doesn’t seem to be so naturally connected to the event and its duration, as shown in (29) repeated here as (37), at least not without a suitable special context. In (38) we have the predicate *geht weiter* ‘continues on’, which indicates an ongoing change, that cannot be implicitly related to a perceivable result state (*sichtbar* ‘observable’), because you cannot really see the actual progression from outer space, but only the result of it (that there is no rainforest anymore).

#Result-Event

(37) #Die [*hölzerne*]^{RE} Absperrung [*hat drei Tage gedauert*]^{EV}.
 ‘The [wooden]^{RE} blocking [has taken three days]^{EV}.’

→ # The wooden^{RE} blocking {*is the result of an event that* [has taken three days]^{EV RE}}

#Event-Result

(38) #Die Abholzung des Regenwaldes [*geht weiter*]^{EV} und ist aus dem Weltall [*sichtbar*]^{RE}.

‘The cutting down of the rainforest [continues on]^{EV} and is [visible]^{RE} from outer space.’

→ # ‘The cutting down of the rainforest continues on and {*the result* [is visible from outer space]^{RE EV}},’

Note also the subtle difference if we only change the modifier of the nominalization within the same construction:

(39) a. Die [*zufällige*]^{EV} Ausgrabung wird im Museum [*ausgestellt*]^{RE}.
 ‘The coincidental excavation will be exposed in the museum.’

- b. ?Die [mühsame]^{EV} Ausgrabung wird im Museum [ausgestellt]^{RE}.
'The tedious excavation will be exposed in the museum.'

Our intuition concerning (39) is that in a. the relation is more salient or noteworthy as it is something special to discover something by chance and that is why it is exposed, while in b. it is not. But it is clear that these are only first intuitions and we have to investigate and classify the character of those relations in more depth. Nevertheless, we have shown that there are crucial differences in acceptability that somehow have to be accounted for and that the factors introduced by Nunberg seem to play a role in that.

Still, even if salience and noteworthiness are given, we also want to exclude cases like the following already mentioned above:

- (40) ?Das Resultat der Messung [hat drei Stunden gedauert]^{EV}.
'The result of the measurement has taken three hours.'
→? The result of the measurement {is the result of an event that [has taken three days]^{EV}}^{RE}

Since predicate transfer is a general mechanism that does not constrain the input it applies to this should be possible, but since the example becomes even longer then, this seems to be implausible here, analogous to the pragmatic principle "be brief".¹¹ Generally, the speaker's strategy behind predicate transfer is to express something more briefly while making use of stereotypical knowledge: *I am parked out back* is shorter than *I am the owner of a car that is parked out back* and so is *Messung* for events and their results likewise.

We find additional structures that interact with predicate transfer, e.g. temporal structure as mentioned above and discourse structure: In (41), the particle *finally* connects the past and the present and makes it more convenient to bring the event and its result together here:

- (41) Die Übersetzung war [langwierig]^{EV} und [liegt **jetzt** / **endlich** auf dem Tisch]^{RE}.
'The translation was [tedious]^{EV} and [is **finally** on the table **now**]^{RE}.'

In (42), the salient relation between the way, in which the event was conducted and its influence on the result is unexpected (we would expect that student do not have enough experience to measure precisely), but it is

repaired by *although*, which emphasizes the causal relation and shows that it is unexpected in this case:

- (42) *Obwohl die Messung von Studenten [durchgeführt wurde]^{EV} ist sie sehr [genau]^{RE}.*
'**Although** the measuring was [conducted]^{EV} by students it is very [precise]^{RE}.'
- (43) a. Lunch was delicious, **but** took forever.
b. The apple was a funny colour **but** is delicious.¹²

This can also be seen in the following pairs of examples:

- (44) *Die einfache Übersetzung brachte mir **dennoch** viel Geld ein.*
'The easy translation **still** earned me a lot of money.'
→ Periphrasis: The result earned me a lot of money, **although** the related event was easy.

Remember the example where we had the tedious translation and claimed that this is noteworthy since it explains why it earned me so much money. In (44) this explanation does not hold, but still the causal relation can in a sense be rescued by the particle *still*.

Similarly, in (45) the causal expectations are met while they are violated in (45'):

- (45) *Die [täuschend echte]^{RE} Fälschung [dauerte lange]^{EV}.*
'The deceptively real-looking imitation took a long time.'
- (45') #*Die [schlechte]^{RE} Fälschung [dauerte lange]^{EV}.*
'The bad imitation took a long time.'

Still, the noteworthy relation between event and result can be assembled by motivating that it is unexpected, which is made explicit by *trotzdem* 'still':

- (45'') *Die [schlechte]^{RE} Fälschung [dauerte **trotzdem** lange]^{EV}.*
'The bad imitation **still** took a long time.'

We will not go into the details of these discourse effects here, but it should have become clear that they have an impact on the acceptability of such examples.

We have only dealt with event and result object readings here, but as Melloni (2007) has shown, there are many other referential readings, e.g. abstract objects (*Übersetzung* ‘translation’ as information), means (*Heizung* ‘heating’), psych stimulus (*Vergnügung* ‘amusement’) or sense extensions (*Verwaltung* ‘administration’). If we unify these readings with the default event reading we recognize differences in acceptability again:

- (44) #*Die Leitung der Anwaltskanzlei ist [schwierig]^{EV}. Sie hat [angerufen]_{AGENT}.*
‘The management of the law firm is [difficult]^{EV}. It has [called]_{AGENT}.’
- (45) #*Die teure Reinigung [der Kleider]^{EV} [liegt in der Innenstadt]_{LOCATION}.*
‘The expensive dry cleaning [of the clothes]^{EV} is [located in the city centre]_{LOCATION}.’
- (46) #*Die [regelmäßige]^{EV} Lüftung des Kinderzimmers ist wichtig, aber [kaputt]_{MEANS}.*
‘The [regular]^{EV} ventilation of the nursery is important, but [damaged]_{MEANS}.’

What these examples show is that the conflicting readings (or “copredication”) provide diagnostics (together with other diagnostics) for the distinctness of two readings (cf. Cruse (2002), Asher (2007) on copredication with simple nouns). In the case of deverbal nominals this may tell us something about default readings, the distance between readings and their distribution (see Brandtner 2009), since in principle we should not be able to unify a default with a coerced reading.

7. Summary and open questions

In this paper we have dealt with the systematic alternation between event and result readings (among other readings) of German *-ung* nominalizations. The examples have shown that the linguistic context provides different indicators for event or result readings, some applying locally, some in the wider context. To account for this phenomenon there are different theories or types of meaning shift of nominalizations, namely lexical, structural, semantic (cf. section 4) and pragmatic shifts (section 5).

Except for the latter, they focus on shifts concerning the nominalization itself and hence they cannot explain conflicting readings of a nominalization. Nevertheless they should not be seen as incompatible with the analysis pursued in this paper. There is a high number of instances with conflicting indicators, where one and the same nominalization expresses two readings. Instead of shifting the nominalization, the embedding context can be enriched or adjusted to the sortal restrictions set so far; to achieve this we have applied Nunberg's notion of *predicate transfer*. As this mechanism does not act on the assumption that the nominalization has two readings at the same time, we are able to preserve compositionality.

Predicate transfer is a very powerful pragmatic principle that is restricted by the principles of salient functions and noteworthiness. These principles have to be clarified in more detail in the future, but first results from a test-questionnaire seem to corroborate our analysis that predicate transfer is licensed by the salient and noteworthy functions assumed so far and is blocked if there is no such function. A more detailed and broader questionnaire has already been carried out and is described in Weiland (2009) and another one refined again is in the process of preparation (cf. Featherston, von Heusinger, and Weiland (in preparation)).

This analysis allows us to account for a particular type of meaning alternation, leaving other types for other theories of meaning shift operations (cf. section 4), which then do not have to be complicated. Predicate transfer is a general shifting principle that can give new insights into a variety of phenomena e.g. the context dependent shifts of simple nouns, restrictions in systematic polysemy (cf. Nunberg 1995), copredication cases and resultative adverbs (cf. Geuder 2002). On the other hand, copredication can give new insights into a widely neglected area: The distribution of readings deverbal nominals display: Some seem more closely intertwined with the event than others. This observation is further developed in Brandtner (2009).

Additionally, this paper has shown that the (wider) context is worth an in depth investigation. We have dealt with one contextual type here; other ones such as discourse relations and temporal aspects have only been touched upon and leave further work for the future to achieve a broad understanding of the interpretation of nominalizations in context.

Notes

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1. http://www.frag-einen-anwalt.de/Polizeivideo-bei-Geschw.%C3%BCberschreibung_f26038.html 7.02.2008
 2. This assumption is preliminary and must be corroborated by additional evidence.
 3. Examples marked with ‘cosmas’ are taken from the cosmas corpus of the IdS Mannheim: <https://cosmas2.ids-mannheim.de/cosmas2-web/>
 4. This phenomenon is well-known under the name of *copredication* concerning simple nouns.
 5. We assume here, that the author earns money with the sold books and is not paid for the hours the event took.
 6. http://www.hist.uzh.ch/static/ag/e-learning/bdb_detail.php?id=468 25.08.2009
 7. Ambiguity in general is often used as an argument for non-compositionality (cf. Pagin and Westerstahl (to appear), Pelletier 2004: 145–147 for a discussion). However, in conflicting cases we do not only have to deal with the specification of one word in context, but with two different readings entering into the composition process at the same time.
 8. But also for systematic polysemy, cf. Nunberg (1995: 116–119).
 9. “**This** is parked out back” would be used in the case that several presented keys fit one car and “**These** are parked out back” for one key that fits several cars.
 10. Note that we could improve b. by establishing a noteworthy relation:
 - i. The newspaper was founded in 1878 and is still typed in Sütterlin.
 11. We owe this observation to an anonymous reviewer.
 12. Examples (43) a. and b. are taken from Asher (2007).

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