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Contact Information:

Director of the SFB 732:

Prof. Dr. Artemis Alexiadou
artemis@ifla.uni-stuttgart.de

Coordinator of the SFB 732:

Dr. Sabine Mohr
sabine@ifla.uni-stuttgart.de

SFB 732
Universität Stuttgart
Heilbronner Strasse 7
D-70174 Stuttgart

Phone: 0711/685-83115
Fax: 0711/685-83120

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Verbs, nouns and affixation[*]

Artemis Alexiadou and Jane Grimshaw

Universität Stuttgart, Rutgers University

What explains the rich patterns of deverbal nominalization? Why do some nouns have argument structure, while others do not? We seek a solution in which properties of deverbal nouns are composed from properties of verbs, properties of nouns, and properties of the morphemes that relate them. The theory of each plus the theory of how they combine, should give the explanation.

In exploring this, we investigate properties of two theories of nominalization. In one, the verb-like properties of deverbal nouns result from verbal syntactic structure (a "structural model"). See, for example, van Hout & Roeper 1998, Fu, Roeper and Borer 1993, 2001, to appear, Alexiadou 2001, to appear). According to the structural hypothesis, some nouns contain VPs and/or verbal functional layers.

In the other theory, the verbal properties of deverbal nouns result from the event structure and argument structure of the DPs that they head. By "event structure" we mean a representation of the elements and structure of a linguistic event, not a representation of the world. We refer to this view as the "event model". According to the event model hypothesis, all derived nouns are represented with the same syntactic structure, the difference lying in argument structure – which in turn is critically related to event structure, in the way sketched in Grimshaw (1990), Siloni (1997) among others.[1]

In pursuing these lines of analysis, and at least to some extent disentangling their properties, we reach the conclusion that, with respect to a core set of phenomena, the two theories are remarkably similar – specifically, they achieve success with the same problems, and must resort to the same stipulations to address the remaining issues that we discuss (although the stipulations are couched in different forms).

1.   Nouns and argument structure: Basic patterns

As shown by Grimshaw (1990), de-verbal nouns do not form a homogeneous class. Some of them license argument structure and some do not. We do not repeat the details of the arguments here, but summarise the general points. The central point for present purposes is that arguments are *required* only by deverbal nouns with *complex event interpretations*. This property, like further differences between complex event nominals and other deverbal nouns, is obscured by the fact that many nouns are ambiguous, and can even have three interpretations, showing different behaviour under each. As (1) illustrates, nouns such as

examination are three way ambiguous. They can have a "complex event reading" as in (1a), a "simple event reading" as in (1b), in which they denote an event but are not associated with an event structure and hence not with an argument structure, and a further reading in which they refer to the result of an event (1c) or a participant in it. We will group these together as "individual-referring" or "individual" nouns.

(1) a. The examination of the patients took a long time   (Complex)
     b. The examination took a long time   (Simple)
     c. The examination was on the table   (Result)

Only complex event nominals behave like verbs in licensing event-related PPs, like *in an hour, for an hour*, see Grimshaw (1990), Zucchi (1993). In this they behave like verbs. As a consequence of their event structure, they have argument structure, again like verbs, with the result that they have arguments which are obligatorily present. They also disallow indefinite determiners (**an examination of the patients*). The examples in (2) are further instances of complex event nominals, this time formed with *–ment*. We illustrate properties of complex event nominals through nouns formed with *–ment* and *–(a)tion* throughout the paper.

(2) a. The frequent payment of your bills keeps your credit rating good.
     b. We demanded the replacement of the broken cups in no more than three days.

Like *examination*, the nouns in (2) can be individual nominals in addition to their complex event readings; for example *a payment*, *the replacements* are grammatical. Simple event nominals neither license event-related PPs, nor have argument structure. Like complex event nominals, simple event nominals denote events, but syntactically they are similar to individual nominals. Two examples are *event* itself, and *race* in (3b):

(3) a. The event was well organized.
     b. The race lasted one hour.

Result nominals and participant nominals likewise fail to license event-related PPs, lack argument structure, and have no event interpretation at all. Apart from the fact that they are derived from verbs, individual nouns have the same syntax as non-verb-related nouns: *dog*, *house*, *event*, *trip*.

Nominals derived from verbs with no (overt) affix behave as simple event nouns and/or individual nouns.[2] This is true also for irregulars like *gift*.

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[2] Some ∅-derived nominals do seem to license arguments (cf. i). The systematicity of these examples remains to be examined, see Newmeyer (to appear) for discussion.

(4) a. *The constant offer of credit cards to students………….
    b. *(The) frequent report of looting …………………

The special behaviour of bare nominals is analyzed in Smith (1972). She discusses verbs of English which engage in the causative/inchoative alternation, and nominalize without (overt) affixation. Smith points out that these verbs never nominalize as "transitive" nouns, but only as nouns with a possessor alone (see also Chomsky 1970). Examples include *change*, *end* and *stop*, which form nominals, but not transitive ones. The generalization is visible in these contrasts: *the climate's change/*global warming's change of the climate*; *the race's end/*the judge's end of the race*; *The train's unscheduled stop/*The guard's unscheduled stop of the train*. In fact, using the criteria of Grimshaw (1990), it is possible to show that these "intransitive" nominals are not complex event nominals. Their limited interpretations support the claim that zero-derived nominalization never preserves event structure. Smith also shows that causative verbs which nominalize with certain affixes show contrasting behaviour: they do nominalize transitively. We return to this point in Section 6.1.

If we collapse all the nominals discussed so far, and examine them all together, it appears that nouns can show just about any set of properties. Grimshaw's (1990) conclusion was different: that there is a rigid distinction between nouns which have argument structure and those that do not, which is obscured by the rather systematic ambiguities illustrated above.

Table 1 compares result nominals with complex event nominals in these and other respects.

Table 1: Some differences between result and complex event nominals

	Result-Nominals	Complex Event-Nominals
a.	Non-θ-assigner, No obligatory arguments	θ-assigners, Obligatory arguments
b.	No event reading	Event reading
c.	No agent-oriented modifiers	Agent-oriented modifiers
d.	Subjects are possessives	Subjects are arguments
e.	*by* phrases are non-arguments	*by* phrases are arguments
f.	No implicit argument control	Implicit argument control
g.	No aspectual modifiers	Aspectual modifiers
h.	Modifiers like *frequent*, *constant* only with plural	Modifiers like *frequent*, *constant* appear with singular
i.	May be plural	Must be singular

(i) a. My constant change of mentors
    b. The frequent release of the prisoners by the governor (David Embick (p.c.)

2.   The generalizations to be explained

Following up on the empirical observations of Section 1, we highlight a core set of generalizations which must be explained.

1)   Only nouns which are related to corresponding verbs have argument structure. From this we conclude that being associated with an event structure/argument structure is not a property of nouns *per se*. The noun *event*, illustrated above, has no event/argument structure, even though, crudely speaking, it has the right kind of meaning. Similarly, the noun *trip*: trips have beginnings and ends, for example. Yet it is impossible to say **my trip for three weeks* or **my trip in three weeks* (on the relevant reading) or **my frequent trip to the UK*.[3] This leads us to conclude that the verb-like properties of complex event nouns are attributable to the affixes which derive nouns from verbs, or to the verbal bases themselves, or both. (Although the verb *trip* exists it has specialized meanings which are semantically distant from the noun.)

2)   As noted above, nouns which are identical in form to verbs do not generally behave like complex event nominals, i.e. they are rigidly different from verbs (recall *offer*, *report* above). Why? A simple-minded view suggests that they should be most like verbs.

3)   *–ing* nominals are always complex event nominals: Lebeaux (1986) pointed out that they can take obligatory arguments, and Grimshaw (1990) and Harley & Noyer (1998) offer further evidence.[4]

4)   *–(a)tion* and *–ment* nominals are frequently ambiguous between eventive and non eventive readings. See *examination* and *replacement* above. We must conclude that nominal affixes, affixes which belong to a single syntactic category (here nouns), can yield different interpretations, e.g. *–ing* vs.   *–ation*. Also, individual affixes can show a variety of behaviours, as *–ment* and   *–(a)tion* do.

3.   Nouns and argument structure: where does responsibility lie?

The two models we are investigating attribute noun ~ argument structure association to two different aspects of representation. In the structural model the presence of argument structure follows from the presence of a VP node inside the nominal structure (or perhaps some functional projection of VP). In the event model the presence of argument structure follows from the existence of an event structure, or "tier" matching the content of the nominal structure.

The event-based model posits a representation of the event structure of a noun (or verb), which is linked to an argument structure. A complex event nominal, by definition, denotes an event with an internal aspectual structure. For

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[3] Although *my most frequent trip* is grammatical, suggesting a different interpretation for *frequent* here.
[4] Apparent counterexamples seem to be arbitrary lexicalizations: *a good living*, *hand-writing* etc. The references cited above discuss such cases.

example, the noun *replacement* has the (obviously simplified) representations in (5).

(5)   a.   *replacement*:   the individual "z" in <x replaces y with z>
            No aspect
       b.   *replacement*:   the event <x replaces y with z>
            Aspect – telic

In (5a), the noun corresponds to an argument of the verb, in (5b) it corresponds to the event encoded by the verb: the noun is telic, like the base verb.

The structure-based model represents the difference between the two noun types in terms of the presence of verbal functional layers and the height of affixation. The higher the affix is in the structure, the more verbal properties the derived noun will show. Complex event nominals are derived by high affixation. In other words, complex event nominals contain some functional projection of VP, while participant and simple event nominals lack such a projection. The main idea behind the structural model could be described as follows: it is the syntactic structure that gives rise to an event template which in turn determines the interpretation of arguments (see Borer 2001). In other words, the event interpretation arises through the presence of verbal functional layers in the nominal structure.

4.   Towards a description

Both of these theories offer the possibility of describing the facts as presented in Section 2. The questions we are interested in arise in both the structural model and the event model, and receive, surprisingly, answers of comparable status. This becomes quite clear when we ask about explanation, rather than just description. We move to this question in Section 5.

4.1   Preservation of argument structure under nominalization

We consider the generalizations in 1) – 4) above in turn.

1)   Why is it only nouns which are derived from verbs that have complex event readings/argument structure? This follows if only verbs, not nouns, can have event structure/argument structure. Under this assumption, the only way for a noun to be associated with an argument structure is for it to be derived from a verb. This assumption must apparently be made by both theories.

In the event-based model, what must be eliminated is a representation of the form shown in (6). (6) is intended to represent a noun with no internal verbal structure, with an associated argument structure in angled brackets and an aspectual structure in parentheses.

(6) [N   ]   <x,….   >   (aspect: telic/atelic/…)

In contrast, (7) must be allowed:

(7) [V   ]   <x,….   >   (aspect: telic/atelic/…)

We can hypothesize that the representation in (7) is the only one allowed for verbs: all verbs must have an event structure and an argument structure. A noun derived from a verb is represented this way, when the nominalization is event-structure-preserving:

(8) [N [V] ..]   <x,….   >   (aspect: telic/atelic/…)

It is the verb, and not the noun, that is the source of the event structure and argument structure, so the representations are consistent with the principles governing verbs versus nouns. In this way, the model predicts that only nouns derived from verbs can have argument structure.

It should be noted that the prediction is based on a stipulation (namely that nouns never have event structure or argument structure) which presumably has some more profound basis. In the structure-based theory, a virtually identical stipulation gives an identical result.

If nouns cannot have argument structure, and verbs can or must, then a noun which appears as the lexical head of an extended nominal can have no argument structure. A noun which is built up from a V which is the lexical head of a VP projection can have an argument structure, since it is contributed by the V.

The generalizations in 2), 3) and 4) all concern the effects of category-changing (from V to N): by no affixation at all, by affixation with –*ing*, and by affixation with –*(a)tion* or –*ment*.

As noted above, nouns which are identical in form to verbs do not generally behave like complex event nominals. As we also noted above, the simplest theory suggests that they should be most like verbs.

In the event based theory, the grammar stipulates which affixes "preserve the verbal property of having argument structure", which do not, and which do both, perhaps because they are unspecified for this property. The suffix –*ing* is argument-preserving, and –*(a)tion* and –*ment* are ambiguous/unspecified. Zero-derivation involves an affix which is unpronounced, and this affix is opaque to argument-transfer.[5] This is in essence what is proposed in Grimshaw (1990: 67).

The cases of nominalization delineated above are thus represented as in (9-11):

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[5] Referring to identical noun~verb pairs as "zero affixation" maximises the parallels between this and the overt affixations.

(9)   "zero" affixation:
             [N [V] Ø]   <...>   (aspect: ...)

(10)   affixation with –*ing*:
             [N [V] –ing]   <x,....>   (aspect: telic/atelic/…)

(11)   affixation with –*(a)tion*; –*ment*:
       a.   [N [V] –(a)tion]   <...>   (aspect: ...)

       b.   [N [V] –(a)tion]   <x,....>   (telic/atelic/…)

In a particular instantiation of the structural model it has been argued that exponents such as –*ing*, –*ation*/–*ment* and zero morphology have rather distinct specifications for insertions. Specifically, certain exponents, which are nominal-category-determining heads can attach both to roots ("low/root attachment") and/or to some further layers of structure, "high/outer cycle attachment", in accordance with a low vs. high attachment parameter. (See Marantz 2001, Alexiadou 2001, and Embick 2003 crucially echoing Abney's 1987 intuition.) Some can attach only high or only low. In other words, all these exponents express nominal categories, but they differ with respect to the height of affixation.
        The zero affix discussed here, then, attaches only to roots:

(12)   [D [n Ø [√

As a result, nominals derived from verbs by zero-affixation have no argument structure, since they contain no verbal projections.
        For gerundive –*ing*, the structural model posits a VoiceP, a vP and an AspP, as projections above the root and below the DP, as in (13a-b). Here -*ing* is the head of AspP in the case of verbal gerunds, and realises n in the case of nominal gerunds, see Alexiadou & al. (2008), cf. Borer (2005):

(13)   a.   [D [AspP ing   [VoiceP [vP [√
       b.   [D [n   ing   [VoiceP [vP [√

Since the root here is embedded within verbal functional projections, it preserves its argument structure.
        Finally, in both accounts, nominal exponents such as –*(a)tion* can be doubly specified, or underspecified. In the structural model, as proposed in Alexiadou (2001), this allows it to attach directly to stems/roots, giving rise to full nominals. It may also attach to something larger, a VP (+functional projections). When –*(a)tion* attaches to the root directly it gives rise to a nominal lacking argument

structure.[6] When it attaches high, the result is a nominal that has some verbal properties; in a sense, the root first becomes a verb and then a noun.[7]

(14) [D [n –ation [vP [√

In other words, –*(a)tion* can appear in the structure in (14) as well as in the structure in (12), while –*ing* can be 'specified' as entering only in the structure in (13). Bare root nominals can appear only in the structure in (12). So particular exponents of the nominal category, e.g. –*(a)tion*, –*ing* and the "zero" morpheme appear in specific contexts (see Embick 2003). It will be obvious that underspecification, or double specification in the event model, similarly has the result that the –*(a)tion* and –*ment* suffixes can behave either like the null affix, or like –*ing*.

This completes our summary of the alternative models of nominalization. Of course, various combinations of these two approaches could be envisaged, but as far as we can tell, the assessment of the proposals we give below would extend equally to such mixed solutions.

4.2   The behaviour of adjectives and adverbs in nominalizations

A further consideration which potentially separates the event and structural models is the discovery that complex event nominals can contain some adverbs. This leads to the hypothesis that complex event nominals have at least VP inside them, and possibly more verbal structure such as AspP (see Fu et al 2001, Hazout 1991, Alexiadou 2001).

The above authors note that certain adverbs are possible within complex nominals (see (15) and (16) below).[8]

(15) a.   The arrival of the trains **promptly** at the station ...
       b.   His careful destruction of the documents **immediately** ...

(16) *His explanation of the problem **fortunately** to the tenants ...

The logic of the argument is as follows: It is generally accepted that adverbs modify verbal elements. But adverbs are distinguished (very roughly) into VP modifiers, i.e. adverbs which modify only verbs/verb phrases (VP), e.g. *The trains arrived promptly at the station* and sentence (S) modifiers, i.e. adverbs that

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[6] This analysis has been refined in Alexiadou (to appear) and Harley (to appear).

[7] Note here that VoiceP is missing in -*ation* nominals. In agreement with Kratzer (1994), external arguments are never assigned by the lexical entry, but by **Voice**. -*Ation* nominals lack Voice and therefore they never have an external argument.

[8] Siloni (1997) argues that apparent adverbials in the comparable Hebrew structures are really adverbial PPs, adding another dimension to the interpretation of the adverb facts. See Borer (1993) for counterarguments.

modify propositions, e.g. *Fortunately he explained the problem to the tenants*. Traditionally this distinction is resolved in terms of attachment of the modifier, VP-adverbs attach to VPs, S-adverbs attach to sentences (TPs). The structural hypothesis interprets the generalizations concerning the types of adverbs that can be found within nominals as telling us something about the types of verbal projections we can find, especially in view of recent typologies that recognize a relationship between adverb types and inflectional material (see especially Cinque's 1999 evidence for this richer picture of adverbs and also Alexiadou 1997). In this view, the admissibility of certain adverbs in complex event nominals is not a fact that simply has to do with some kind of semantic compatibility (*a priori* the semantics of a process nominal should not be different from the semantics of a verb). Rather, it is a syntactic fact that has to do with the principles that determine which elements can be attached at which positions in the tree structure. This does not mean that the admissibility of adverbs has nothing to do with the event interpretation associated with process nominals. But the interpretation of such nominals as denoting events is not sufficient as an explanation to the restrictions on the distribution of adverbs.

In contrast, the event-based hypothesis attributes the well-formedness of adverbial modification directly to the event structure of complex event nominals and asserts that the semantics of complex event nominals *does* distinguish them in the relevant way from verbs (contra the position outlined in the previous paragraph). Since these nominals denote events and not propositions, it is expected that only event-related, and not proposition-related adverbials will be able to appear, explaining (15) and (16) above.

In sum, adverbs modify semantic units, and they also appear in particular configurational positions. Assuming that the semantic units and the configurations match, the modified semantic units correspond to structural layers in the syntax. So which licenses the adverbs? See Haider (2001), and Ernst (1998) for further discussion.

5.   Assessing the results

The success of these theories, or views, of nominalization can be judged by comparison of what they stipulate, and what they derive from their premises. It is striking, then, that *both stipulate the same information, albeit in different form*.

5.1   The stipulations

The "zero" morpheme is never transparent/always attaches to the root.

This is an accident in both models. The "zero" affix could always be transparent to argument structure (its nominal forms thus always having an event structure and argument structure). In the VP model, it could be attached only at the higher level, and its nominal forms would then always have argument structure.

Moreover, the "zero" affix could instead be unspecified for transparency/level of attachment, and thus behave like *–ment* and *–(a)tion*, in attaching to both low and high levels of structure, or, to put it the other way, be like *–ment* and *–(a)tion* in showing indifference to the complex event/simple event interpretations.

From a broader perspective, it is striking that nouns which are identical in form to verbs do NOT behave like complex event nominals, since as pointed out in Section 2 the simplest theory actually suggests that they should be most like verbs. Both the models investigated here lack insight into this problem (cf. Borer 2005). In the event structure theory these nouns look the most like verbs, and verbs have argument structure. Likewise, in the syntactic account, we would expect zero nominal morphology to always attach high, since zero nouns most resemble verbs.[9]

The *–ing* affix is always transparent/always attaches high up

Again, the *–ing* affix is merely stipulated to be only transparent/high attached, when in principle it could be non-transparent/attached to the root, or unspecified. Neither theory offers an explanation for the fact that this affix has to be unspecified and the others may not be. One might want to speculate here that this is related to the existence of the verbal suffix *–ing*, see Alexiadou & al. 2008, Borer (2005).

The *–(a)tion/–ment* affixes are unspecified

Why is it these affixes that are unspecified? Why is it only these affixes that are underspecified? Is it accidental that both of them are underspecified? Neither theory answers these questions.[10]

Presumably there is more to the nominalization patterns than these theories have been able to explicate. What is a surprise is the fact that what we might call the articulation points are exactly the same. By this we mean that comparable stipulations are necessary at comparable points in the structure of the theories. The principal difficulties arise from the non-uniformity of deverbal nominalization patterns: different affixation types exhibit different behaviour. The successes and failures of the two models occur on exactly the same questions. What one describes, the other describes. What one fails to explain, the other fails to explain, and for fundamentally the same reasons.

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[9] Borer (to appear) assumes that zero morphology does not exist. In her analysis zero derived nominals are simply lexical items inserted in nominal structure. Such nominals were never verbs, and hence lack argument structure properties.

[10] This is one of the reasons why other alternatives are pursued in Alexiadou (to appear) and Harley (to appear). Both these papers argue that the difference between argument structure and non-argument structure nominals does not depend on the presence of a verbal source. These approaches attempt to derive the difference related to AS from the role of higher projections such as Number.

6.   Further hypotheses

6.1   Partial nominalization and "zero" affixation

Grimshaw (2004) addresses one core puzzle in these nominalization generalizations; the surprisingly widespread (apparent) ambiguity shown by the system. The same stem enters into both complex event nominals and others (e.g. *examine*). The same affix enters into both complex event nominals and others (e.g. *–(a)tion, –ment*).

In advance of empirical investigation, we would assume that either it is a property of the stem that determines what derivation processes it undergoes, or it is a property of the affix. If the stem is decisive, the stem should be consistent, entering into only one kind of nominalization. If the affix is decisive, the affix should be consistent, entering into only one kind of nominalization. The fact that this is not the way the language works is only covered up, and not explicated, by the underspecification or double specification of *–(a)tion* and *–ment*.

Grimshaw (2004) proposes that the apparent ambiguity or under-specification effects are due to *two-step nominalization*. Nominals of the "individual" type are derived from verbs in two steps: complex event nominalization with suffixation by *–(a)tion* or *–ment*, followed by simple nominalization with no (overt) affixation. "Zero" nominalization is thus involved in the conversion of a complex event nominal to a nominal with no argument structure, and nominalization in which event structure properties of the base are eliminated are consistently analyzed. It is "zero" nominalization that is responsible for both cases of event structure loss: for the deverbal nouns with no affix at all, and for the deverbal nouns which are affixally constructed.

In this analysis, complex event nominalization by overt suffixation, results in the creation of a partial nominalization, one which retains event structure and hence some verb-like properties. Conversion, or the addition of a null suffix, creates a full nominalization, with no verb-like properties. The suffix *is not ambiguous or underspecified*, so the analysis of Section 4.2 is now significantly revised. The suffix always behaves in the same way, as a complex event nominalizer. Moreover the stem always behaves in the same way – it undergoes complex event nominalization. In this way, the puzzle sketched above, that neither the stems nor the affixes seem to show consistent behaviour, is resolved. The structural analysis as presented in 6.2 does not share this property, since it posits underspecified suffixes.

Complex event nominalization with the *–ation, –ment* suffixes now has exactly the same analysis as *–ing* nominalization, as (17) shows. (The only difference is that *–ing* nominals derived in step (17) do not undergo the general zero affixation in (18), a fact for which we can offer no explanation.) This analysis seems to be incompatible with the structural hypothesis, since an affix introduced at a higher level of structure would be acting as part of a root; necessary for it to undergo zero nominalization. This analysis seems to be

incompatible with the structural hypothesis, since in this model there is no general zero affixation part.

The affixation-based nominals are thus now represented as in (17-18), contrasting with the analysis in (10) and (11) above.

(17)   affixation with –*ing*, –*(a)tion*, –*ment*
       [N [V] –ing]   <x,….   >   (aspect: telic/atelic/…)
       [N [V] –(a)tion)]   <x,….   >   (aspect: telic/atelic/…)

(18)   "zero" affixation of the –*(a)tion* noun:
       [N [N [V] –(a)tion)] Ø]   <…….   >   (aspect: …….)

As (18) shows, the zero affixation step for the partially derived –*ation*, –*ment* nominals converts a noun to another noun, and not a verb to a noun as in the previously analyzed cases of zero nominalization. By hypothesis, the null affix derivation results in loss of (event structure and) argument structure in both cases. The presence of argument structure is forced by the presence of a V in these derived nominals, except where "zero" affixation has prevented preservation of the verb's event related properties. This is a generalization which does not hold if –*(a)tion* and –*ment* nominals have identical verb structure, regardless of their interpretations, as they do in the representations in (11a, b) in Section 4.2.

As we reported in Section 1, Smith (1972) argued that the ability to derive "transitive" causative nominalizations from intransitive causative verbs is limited to affixes drawn from the Latin vocabulary and is not seen in the Anglo-Saxon vocabulary of English. Thus *alteration* contrasts with *change*, *termination* with *stop*, and *conclusion* with *end*. Grimshaw (2004) attributes this to the fact that nouns which are zero-derived from verbs cannot be complex event nominals (and hence cannot express a "subject" argument and an "object" argument). Since Germanic verbs nominalize only through the zero affixation, they never preserve their event structure and their argument structure.

With respect to Romance verbs, Smith's generalization can be interpreted in these terms: nouns which are derived from Romance verbs via Romance morphology have event structure and argument structure. Romance verbs undergo only the overt affixation of (17), if we are permitted to simplify a little.[11] Hence Romance verbs nominalize with argument structure preservation (and can undergo subsequent zero derivation, as we have just seen). If this is correct, the vocabulary of English bifurcates into Romance stems and affixes, case (11), and

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[11] Is it the vocabulary affiliation of the stem which governs its nominalization pattern, or it is the affiliation of the affix (as Smith suggests)? To illustrate the issue, *report* is a stem of Latin origin, but does not form a complex event nominal. (In contrast, *release* seems to, as observed in fn. 2.) On the other hand, Latinate verbs (where the affixal status of nominalization is not at stake) do not undergo dative shift (Grimshaw 2005), suggesting that affiliation of the stem determines the grammar of the words. We must leave these matters unresolved.

Germanic stems (and "zero" affixes), case (9), with only Romance forms showing argument structure preservation.

6.2   The Romance vs. Germanic vocabulary and the structural analysis

The structural theory, then, must have some way to accommodate the vocabulary-type distinction of English. We believe that this is the case. Following Embick (2003), the structural analysis can re-phrase the vocabulary partition just observed on the basis of the manner in which vocabulary insertion proceeds. Specifically, it can be argued that vocabulary insertion is divided into distinct *cycles* of insertion, with potentially different conditions on insertion applying in Root-attached vs. non-Root-attached structural domains.

   Recall the three structures we proposed in section 3 and repeated in (19):

(19)   a.   [D   [AspP ing [VoiceP   [vP [√
        b.   [D   [n ing   [VoiceP   [vP [√
        c.   [D   [n ation   [vP [√
        d.   [D   [n Ø   [√

As mentioned, n can have three different exponents: e.g. *–ing*, *–ation* and zero. Vocabulary insertion is divided into distinct *cycles*, a Root Cycle (19d) and an Outer cycle (19a-c). What this means is simply that a distinction is made between (1) functional heads attaching directly to the Root, and (2) functional heads attaching higher, i.e. outside of other functional heads. For the purposes of insertion, we label zero affixation a "stand-out" nominal allomorph, which is possible only in the root cycle.

(20)   Allomorphy generalization: a stand-out allomorphy is possible only in the
        root cycle.

On this view, zero nominals are special because the nominal head n is attached directly to the Root. The nominal allomorphy patterns discussed in this paper result thus from considerations of locality. The allomorphy generalization above leads to the result that $\varnothing$-insertion is root-related, as in (19d). Since the particular exponents are sensitive to root involvement, we expect that the higher the affixation the less restrictions are observed. This means that *–ing* can basically attach to anything, explaining the productivity of gerunds, as opposed to zero nominals. Finally, *–(a)tion* can occur in both cycles, being underspecified. The hypothesis that *–(a)tion* is underspecified distinguishes this structural account from the partial nominalization proposal in 6.1. The partial nominalization hypothesis denies ambiguity or underspecification for *–(a)tion* and *–ment*.

   The remarks on the Germanic vs. Romance vocabulary are a step towards the specification of the roots that are on a list in the Root Cycle for ($\varnothing$-insertion) but not in the Outer Cycle. This means that the lists consulted for vocabulary

insertion into Root-attached heads differ from the lists consulted for insertion in non-Root-attached heads. This is illustrated in (21):

(21)　a.　Spell-out of n: Root Cycle
　　　　　　n　　↔　　-∅/__　　　{√STOP, √END, √JUMP...}
　　　　　　n　　↔　　*-ation*/__　　{√DESTROY, √CONCLUDE...}
　　　b.　Spell-out of n: Outer Cycle
　　　　　　n　　↔　　*-ation*/__　　{√DESTROY, √CONCLUDE...}
　　　　　　n　　↔　　*-ing*

Recall that *–ation* is underspecified, and hence it can occur in both cycles, i.e. both the inner and the outer cycle. When it does occur in the root cycle, it crucially makes reference to a different set of items than the ∅ affix. Ideally, the lists should be different for the two cycles. But in this case, Roots take the same allomorph in both the Root and Outer Cycles, as one might expect.

　　　What the above suggests is that there is a sensitivity of the functional head to the properties of the root. That this is the case in (21a) is uncontroversial. However, it is not clear how to derive this in the case of (21b), where the functional head n attaches to other functional layers. See Embick (2003) for some thoughts on this issue.

7.　What does the above explain?

We have laid out a set of generalizations holding of English deverbal nominals. We have investigated how each generalization may be described or derived under two different views of deverbal nominals with a complex event interpretation: that they have internal verbal syntax and that they denote events.

- All complex event nominals (i.e. those with argument structure) are deverbal, because nouns themselves never have argument structure.
- Adverbs are licensed inside complex event nominals because they have verbal functional projections, or because they denote events.
- Bare nominalizations are never argument taking because zero derivation never preserves event structure, or because the zero derivation suffix is always generated too low. It is Germanic verb stems that fall into this category.
- Overtly suffixed nominalizations (Romance stems and suffixes only) show complex event nominal properties, because their affixation preserves event structure, or because their affixes are generated high in the verbal functional projection.

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Artemis Alexiadou
Institute of English Linguistics
Univerität Stuttgart
Heilbronner Str. 7
70174 Stuttgart
Germany

artemis@ifla.uni-stuttgart.de

Jane Grimshaw
Department of Linguistics
Rutgers University
18 Seminary Place
New Brunswick NJ 08901
USA

grimshaw@ruccs.rutgers.edu

Meaning Transfer and the Compositional Semantics of Nominalizations[*]

Regine Brandtner

University of Stuttgart

Deverbal nominalizations derived with *–ung* in German display different sortal readings (e.g. event, result, object) depending on the context that they occur in. However, there are cases that show conflicting evidence and hence pose problems for the compositional process. This paper provides a new explanation for the constructions in which one nominalization is understood as expressing two different readings simultaneously in order to match different semantic restrictions by modifiers or governing predicates. As these cases cannot be explained sufficiently by conventional strategies of interpreting nominalizations in context, I apply Nunberg's notion of predicate transfer to shift the context rather than the noun: It is claimed that the nominalization expresses just one reading that fits the semantic restriction of the first modifier or predicate, while the second modifier or predicate changes its meaning through meaning enrichment. This analysis allows for the preserving of compositionality and releases other theories of these special cases.

1.   The Double Reading Paradox

German has various means for nominalization as exemplified in (1):

(1)   Die Straße liegt in einer stumpfen und nüchternen **Beleuchtung ('lighting': V + -*ung*)**, die alles **Geheimnisvolle ('the arcane/ mysterious': [[Adj. + -*nis*] + -*voll*] + conversion)**, jede **Absonderlichkeit ('peculiarity': Adj. + -*keit*)** der **Stimmung ('mood/sentiment': noun + -*ung*, here: lexicalized)** ausschließt.

<div align="right">(from: Thomas Mann: Königliche Hoheit)</div>

As with nominalizations in other languages, the highly productive -*ung* nominalization in German shows different sortal readings (e.g. event, result, object) in different contexts. However, the main question of this paper concerns cases like (2) and (3), where this reference is ambiguous when two conflicting indicators appear in one and the same context. In (2) the adjective *wiederholt* 'repeated' indicates an event reading whereas the verb *belegen* 'show' indicates a result object:

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(2) Die [wiederholten]$_{EV}$ Messungen [belegen]$_{RE}$, dass keine Besserung
      eingetreten ist.
      'The repeated measurements show that there hasn't been an improvement.'

We also find the reversed order of the respective sortal readings as in (3),
where *vorliegend* 'available' indicates a result object and *durchgeführt*
'conducted' an event:

(3) 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 wäre.[1]
      'You can only tell whether the measurement at hand was conducted
      regularly (…), if you know the precise name of the video system.'

I will call such cases the double reading paradox or DRP: two indicators
contradict each other in the same context so that we have a conflict between the
requirements of the indicators. The question arises as to how these examples can
be dealt with.
      A first intuition would be that the nominalization itself shifts its meaning to
meet the requirements of both indicators one by one. Obviously, this would be an
implausibly complex operation and we would want to specify the reading of the
nominalization once in this narrow context and not change it or leave it open. As
theories about nominalizations in general cannot explain this phenomenon
sufficiently, I suggest a new analysis which preserves the first indicated reading
and shifts the second indicator by applying the mechanism of predicate transfer.
According to this analysis, once a sortal reading is suggested by the first indicator
it remains fixed. This indicator takes priority over the second one, which is then
modulated or shifted to match the unique sortal reading. This alternative strategy
applies to the context instead of the nominalization and therefore retains
compositionality. The predicate transfer analysis will be explained in depth in
section 5.
      To gain a deeper understanding about the interaction between different
indicators I will first take a closer look at the different kinds of sortal indicators
(section 2). Some further examples in section 3 will show that the double reading
paradox is a common phenomenon in discourse and can occur in different
constructions. As a basis for the introduction to the notion of predicate transfer
(Nunberg 1995, 2004), I will contrast several other types of sortal shifts in section
4 to test if they can account for the DRP and will then provide a specific analysis
of the DRP cases as well as constraints in section 5 and 6.

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[1] http://www.frag-einen-anwalt.de/Polizeivideo-bei-
Geschw.%C3%BCberswchreitung_f26038.html, 7.02.2008

2.   Types of Sortal Indicators

As we have seen in examples (2) and (3) sortal indicators specify the actual reading of the nominalization in context, but we can further subdivide this class into the following types according to their position. I 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 within the DP or as a VP/ predicate to the nominalization. Event and process readings are for example indicated by:

- Time frame predicates: *beginnen/ aufhören/ weitergehen*
  'begin'/ 'stop'/ 'continue'
- Duration: *hat 6 Monate gedauert*   'lasted 6 months'
- Dates: *am 7.Juli*   'July 7th'
- Process modifying predicates: *vorsichtig*   'cautious'
- Iteration: *permanent/ wiederholt*   'permanent'/ 'repeated'

    Result object readings can be indicated by (among others):

- Physical change: *überreichen / erscheinen* 'present'/ 'appear'
- Location: *auf dem Tisch liegen / vorliegen* 'lie on the table'/ 'be available'
- Size, shape etc.: *lang, hoch, rot sein* 'be long, high, red'

    These indicators are well studied (cf. Ehrich and Rapp 2000, Heid et al. 2007), nevertheless there is much work remaining to distinguish straightforward cases from ambiguous ones, e.g. *exact, precise, to show, to support*, about which I will say more in section 6. In addition to local indicators like these, we find a variety of other types exemplified in 2.2 – 2.4.

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; so we can infer that the conjunct *Messung* 'measuring' has an event reading, too:

(4) Die Divergenz zwischen [Einschätzung]$_{EV}$ und **Messung** könnte unter diesen Umständen also bedeuten: Der Mensch hört allmählich schlechter, aber er merkt es nicht.(cosmas[2])

'The divergence between the estimate and the measurement could mean: humans hear gradually worse, but they don't 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):

(5) Bei der **Messung** [am 30. Juli]$_{EV}$ an der Romanshornerstrasse 12 war es gar fast jedes dritte Fahrzeug, das die Geschwindigkeitsbegrenzung überschritt. Auch bei der **Kontrolle** auf der Staatsstrasse im Rohrenmoos beim Restaurant Traube waren es nicht viel weniger. (cosmas)

'During the measurements on July 30th every third car drove too fast. At the check at Rohrenmoos it also wasn't fewer.'

The date *am 30. Juli* 'on July 30th' indicates that *Messung* 'measurement' refers to an event. In the next sentence *Kontrolle* 'check' is used synonymously to avoid repetition, so that it 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]**$_{hyperonyme}$ die praktischste. Das Gerät wird mit der Manschette am linken Handgelenk befestigt.

'Of all techniques measuring on the wrist is the most practical one.'

In this context *Methoden* 'methods' functions as a hyperonyme 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 2.3.

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 so a result from this action is suggested.

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[2] Examples marked with 'cosmas' are taken from the cosmas corpus of the IdS Mannheim: https://cosmas2.ids-mannheim.de/cosmas2-web/

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

We can proceed with this result in the ongoing discourse and even refer back to the nominalization with the pronoun *sie* 'she', 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.

(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 measurements conducted in March show in the report now available that the prescriptive limits are under-run and hence are 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) available', which shifts the perspective to the present. The result of the measuring is also denoted by the non-derived object 'report'.

In this chapter I have shown, that there are many different means for sortal indication which play a role in the composition process, some applying locally and some applying in the wider context. Now I will come back to further examples for the double reading paradox before I present a new explanation for the DRP.

3.   Sorts at odds: The double reading paradox

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. For the sake of clarity I will focus on examples with local indicators of the type *Event-Result* and *Result-Event* to investigate this phenomenon in more depth.

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 object:

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

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 in 1990 and could appear as the first volume of the overall project.'

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):

Result-Event

(12) 1514 [überreichte]$_{RE}$ er Louis XII die [[schwierige]$_{EV}$ **Übersetzung**] von Texten des Thukydides.[3]
      'In 1514 he gave Louis XII the difficult 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 — it had really taken 6 months.'

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'. I can only hint at the additional conditions of temporal structure here, which we should pay attention to. We even find cases where there is a shift from an interpretation as a result to an event, and it again proceeds with a result indicator as in (14):

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[3] http://www.hist.unizh.ch/ag/e-learning/bdb_detail.php?id=468, 18.06.2007

Result-Event-Result

(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 measurement at hand was conducted regularly and thus is usable, 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 within the sentence: *vorliegend* 'at hand' indicates a result, just like *verwertbar* 'usable', whereas only an event can be conducted regularly (*regelgerecht durchgeführt*). The question arises as to how the DRP can be solved, since it poses a problem for compositionality[4] and annotation, as the nominalization's reading cannot be definitely determined.

Before I clarify Nunberg's general notion of predicate transfer, which I will then apply to the DRP, I will first give an overview on different meaning shift principles to see if they can account for the DRP.

4.   Types of Sortal Shift

Since nominalizations can have different sortal references — I 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 I will outline in 4.1 – 4.3, but they differ in that they involve lexical, structural and semantic types of shifts. In chapter 5 I will deal with a pragmatic type of shift that does not focus on the nominalization itself.

4.1   Underspecified meaning of suffixes

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.

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[4] Ambiguity in general is often used as an argument for non-compositionality (cf. Pagin and Westerståhl (to appear), Pelletier 2004: 145ff.). However, in the DRP 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.

4.2 Structural ambiguity

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. Schäfer (this volume), Alexiadou 2001, t.a.; Rossdeutscher &, Kamp & Solstad & Reyle 2007). According to this view, different layers and the "height" of the suffix attachment play a role for the respective shifting potential, as well as the distinction between root- and non root derived nominals.

4.3 Conceptual shift / coercion as lexical ambiguity

Pustejovsky (1995) deals with alternations that appear with simple nouns as well. Frequent types are among others:

Product/producer alternation:
(15) a.   John spilled coffee on the **newspaper**.
     b.   The **newspaper** fired its editor

Process/result alternation:
(16) 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 constructions can refer then.

In (17) the verb *begin* needs an event type as a complement, so we have to coerce the noun *novel*. Depending on the context, this can lead to different interpretations on the basis of the lexical entry:

(17) 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:

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

4.4   Problems with the DRP

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 DRP cases: we would have to think of two structures or readings in the same context and could not determine the interpretation of the nominalization. I 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.

5.   Meaning shift as pragmatic enrichment

Nunberg (1979, 1995) developed a theory of pragmatic processes for meaning transfer or meaning enrichment. In his 1995-paper he 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 cases[5], as e.g.: "The ham sandwich sits at table 7".

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. (19a) and (20a) are uttered in a situation where a customer hands his key to an attendant at a parking lot:

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

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

Assuming that shifted entities constitute referential islands we can test which constituent is shifted by a coordination test:

(21) a. {**This$_{key}$ = the car**}$_i$ is parked out back and may not start$_i$.
   b. #{**This$_{key}$ = the car**}$_i$ fits only the left front door$_{key}$ and is parked out back$_i$.

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[5] But also for systematic polysemy, cf. Nunberg 1995: 116ff.

(22) a. I$_j$ am **{*the owner of a car that* is parked out back}$_j$** and have been waiting$_j$ for 15 minutes.

  b. #I am **{*the owner of a car$_i$ that* is parked out back}** and may not start$_i$.

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. In (21) we can go on with a predicate referring to the car ([*and may not start*]) whereas this doesn't work with (22). Other diagnostics for the transfer position by Nunberg show that the number and gender of the demonstrative depends on the intended referent (the car)[6], 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: 111ff.):

(23) *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 my treatment of the DRP cases, as I assume that the nominalization cannot be shifted a second time — to match local selectional restrictions — once the first modificator has suggested a 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 sortal crossings as in (24), which represent the DRP phenomenon with simple nouns (cf. Nunberg 1995, 2004), by suggesting that we actually deal with two properties of persons here:

(24) Roth is Jewish and **[widely read]** $_{books}$.
➡ Roth is Jewish and **{a person whose books are [widely read]** $_{books}$**}** $_{person}$

We can apply this mechanism to the DRP cases since the pragmatic enrichment by predicate transfer allows for the shifting in meaning of the nominalization's context, rather than the nominalization itself (see above). I repeat example (2) and (3) as (25) and (26):

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[6] "**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.

(25)   Die [wiederholten]$_{EV}$ Messungen **[belegen]$_{RE}$**, dass...

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

➡   Die [wiederholten]$_{EV}$ Messungen **{*haben Resultate, die* [belegen]$_{RE}$ }$_{EV}$,** dass...

   {*have results that* [show]...}

The first indicator *wiederholt* 'repeated' modifies an event and so the second (result-) indicator *belegen* 'show' is enriched to an event predicate as well. In (26) 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 *regelgerecht durchgeführt* 'conducted regularly' into a result predicate:

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

   'You can only tell whether the measurement at hand was conducted regularly (…), if you know the precise name of the video system.'

➡   ob die [vorliegende]$_{RE}$ Messung **{*das Ergebnis einer* Handlung ist, die [regelgerecht durchgeführt wurde]$_{EV}$}$_{RE}$** und somit [verwertbar]$_{RE}$ wäre

   ... {*is the result of an event that* [was conducted regularly...] }

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 double reading paradox which enables us to preserve compositionality.

6.   Condition on predicate transfer

As the notion of predicate transfer is a very general mechanism I will give Nunberg's condition and constraints in this chapter and I will show which cases they should exclude.

(20)   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 predicate transfer:

(27)   **Condition on 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 ε *A,*

there is also a predicate F', spelt like F, that denotes the property P', where P' = g (P).

Applied to example (20) this specifies the following enriched predicate:

(28) **Predicate transfer of *parked out back***
Let *car* and *owner of a car be* sets of properties that are related by a salient transfer function g (being the owner of): *car* → *owner of a car.* Then if *parked out back* is a predicate that denotes the property of *being parked out back* ε *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**] ⇒ {*the owner of a car that is* [**parked o.b.**]}

In other words: the name of a property that applies to cars can also be applied to their owners through the salient relation of ownership. The constraints for the application of this mechanism are thus the following:

(i)   there is a salient functional relation between the bearers of the properties, and
(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 6") and the situation of a driver through properties of his car. In addition, there can be other aspects that influence or facilitate transfer possibilities: as I have noted earlier, among the several kinds of sortal indicators there are some predicates that easily show predicate transfer between events and results, because it is not clear which readings they actually indicate, e.g.:

(29) *exact, precise, to show, to support*

Consider the phrase *die präzisen Messungen* 'the precise measurings': if the results are precise they are such because of a precisely conducted event and so the modifier cannot clearly indicate one or the other reading.

To come back to noteworthiness let us consider some of Nunberg's examples that fulfill this constraint and some which do not:

(30)   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

(31)   ?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. If we try to apply this to sentences with nominalizations, the following examples are excluded for the same reason: because 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 (32), at least not without a suitable special context. In (33) 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
(32)   ?Die [hölzerne]$_{RE}$ Absperrung [hat drei Tage gedauert]$_{EV}$.
       'The wooden blocking has taken three days.'
➔? The wooden$_{RE}$ blocking {*is the result of an event that* **[has taken three days]**$_{EV\}RE}$

#Event-Result
(33)   ?Die Abholzung des Regenwaldes [geht weiter]$_{EV}$ und ist aus dem Weltall [sichtbar]$_{RE}$.
       'The cutting down of the rainforest continues on and can be observed from outer space].'
➔? … continues on and {*the result* [can be observed from outer space]$_{RE}$}$_{EV}$

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

(34) 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.'

My intuition concerning (34) 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, I 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.

7.   Summary and open questions

In this paper I 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 the *double reading paradox*. Nevertheless they should not be seen as incompatible with the analysis pursued in this paper. There is a considerably 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 modified so that we have only one reading; to achieve this I 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. We need more tests to shed light on the diagnostics for salience of relations between two indicators. It 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), the DRP and resultative adverbs (cf. Geuder 2002).

Additionally, this paper has shown that the (wider) context is worth an in-depth investigation. I 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.

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Regine Brandtner

Regine Brandtner
Department of Linguistics/ German
University of Stuttgart
Heilbronner Str. 7
70174 Stuttgart

regine.brandtner@ling.uni-stuttgart.de

Local Dislocation in the Distribution of French Adjectives[*]

Kirsten Gengel

University of Stuttgart

In the recent literature on the cross-linguistic placement of adjectives it has been observed (Cinque 2005, among others) that the Germanic languages and the Romance adjectives display a mirror pattern with respect to the placement of adjectives. In this paper I show that while the corresponding generalizations put forward in Cinque (2005) may hold for the majority of the Romance languages, French seems to be much freer in the distribution of adjectives than would be predicted on the basis of these generalizations. To account for the observed differences, I pursue the claim made by Lamarche (1991) and others that the placement of adjectives in prenominal or postnominal position in French is sensitive to information-structural and morphosyntactic restrictions that are not found in the other Romance languages. I show that in the cases where French exhibits unexpected adjective-noun combinations these restrictions are relevant, and can be captured with the Local Dislocation Hypothesis (cf. Embick & Noyer 2001) in the framework of Distributed Morphology.

1.   Introduction

In the recent literature on the distribution of adjectives in the Romance languages, two specific, related questions have been addressed: (i) the question of ambiguity, i.e. the observation that adjectives receive different interpretations in prenominal and postnominal position in the Romance languages (and, to some extent, in the Germanic languages as well), and (ii) the preferences in the placement of adjectives, i.e. the attempt to classify adjectives according to their default placement. This is particularly obvious with adjectives that do not occur in both prenominal and postnominal position in Romance but are seemingly restricted to the one of the positions, notably the prenominal position.

In this paper I will discuss the situation in French, which, in many respects, differs from the distributional generalizations that can be made for the other Romance languages. Not only is the distribution of ambiguity slightly different (in most cases, the ambiguous adjective is perceived to be unambiguous) but the restrictions regarding the placement of adjectives exclusively in prenominal or postnominal position seem less severe than in the other Romance languages. It is the second point, the relative freedom that French displays with respect to adjectival distribution that will be the main concern of this paper. Specifically, I

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will argue that French differs from the other Romance languages in that it is sensitive to morpho-phonological requirements that are not found in the other Romance languages:

(i) There is a clear preference for placing polysyllabic adjectives in postnominal position.

(ii) Participles are usually found in postnominal position.

The hypothesis I put forward in this paper is that these requirements, which are clearly non-syntactic, and do not necessarily influence the interpretation of the adjective, can be captured in terms of a post-syntactic movement operation, the Local Dislocation operation.

The paper is organized as follows. In section 2, I will introduce the data to be discussed. Section 3 will be concerned with the Local Dislocation operation, summarizing the main assumptions connected to this movement within the framework of Distributed Morphology and illustrating the movement with the case of the English comparative and superlative construction. In section 4 I show how Local Dislocation can account for those instances of adjective placement in French that run counter to the generalizations for the other Romance languages. I support my claim with additional evidence from the interaction between adjectives and complements (of both adjective and noun), which can be explained with the adjacency requirement of the Local Dislocation operation, and with data from the re-ordering of objects according to heaviness in regular sentences. Section 5 concludes the paper.

2. Data and Generalizations

In this paper I will discuss three specific cases where French exhibits unexpected behaviour with respect to the other Romance languages:

(i)   the modal vs. implicit relative clause reading: the adjective *possible*

(ii)   the stage-level vs. individual-level distinction: the adjective *invisible*

(iii)   adjectival participles.

2.1   The modal vs. implicit relative clause ambiguity

French differs from both English and the Romance languages in that both the prenominal and the postnominal position yield an ambiguity with respect to the modal vs. implicit relative clause interpretation of the adjective *possible*. Consider first the different readings, illustrated with the English example in (1). In the

example in (a), where the adjective is in prenominal position, both the modal interpretation (i) and the implicit relative clause interpretation (ii) are available. In the (b) sentence, however, the adjective is in postnominal position, which only yields the implicit relative clause reading.

(1) a.   Mary interviewed every possible candidate.   (*ambiguous*)

       (i) Mary interviewed every potential candidate.   (*modal reading*)

       (ii) Mary interviewed every candidate that it was   (*implicit relative
            possible for her to interview.   clause reading*)

     b.   Mary interviewed every candidate possible.   (*unambiguous*)

       (ii) Mary interviewed every candidate that it was   (*implicit relative
            possible for her to interview.   clause reading*)

In contrast to English, the same adjective in Italian, *possibile*, is unambiguous in prenominal position, and ambiguous in postnominal position.

(2) a.   Maria ha intervistato ogni possibile candidato.   (*unambiguous*)
           Maria has interviewed every possible candidate
           'Mary interviewed every possible candidate.'

       (i) Mary interviewed every potential candidate.   (*modal reading*)

     b.   Maria ha intervistato ogni candidato possibile.   (*ambiguous*)
           Maria has interviewed every candidate possible
           'Mary interviewed every possible candidate.'

       (i) Mary interviewed every potential candidate.   (*modal reading*)

       (ii) Mary interviewed every candidate that it was   (*implicit relative
            possible for her to interview.   clause reading*)

The observation that the Germanic languages (in this case, English) and the Romance languages (notably Italian, as above) follow a mirror pattern has been observed in e.g. Cinque (2001). The overall distribution of the relevant readings in prenominal versus postnominal position can be summarized as in (3) for the Germanic languages, and in (4) for the Romance languages (the tables are based on Cinque 2001).

(3)   Germanic Languages (English)

Prenominal Adjectives	Noun	Postnominal Adjectives
implicit relative reading or modal reading	N	*implicit relative reading*
stage-level or individual-level	N	*stage-level*

(4)   Romance Languages (Italian)

Prenominal Adjectives	Noun	Postnominal Adjectives
modal reading	N	*modal reading or implicit relative reading*
individual-level	N	*stage-level or individual-level*

Based on this perceived dichotomy between the Germanic languages and the Romance languages, we would expect French to pattern like Italian (cf. (2) above). However, this prediction is not borne out, since in French, as mentioned above, and as illustrated in (5), both the prenominal and the postnominal position yield an ambiguity in the interpretation of the adjective *possible*.

(5)   a.   Marie a   interrogé   tous les possibles candidats.   (*ambiguous*)
          Marie has interviewed all   the possible candidates
          'Mary interviewed every possible candidate.'

          (i) Mary interviewed every potential candidate.   (*modal reading*)

          (ii) Mary interviewed every candidate that it was   (*implicit relative*
               possible for her to interview.   *clause reading*)

      b.   Marie a   interrogé   tous les candidats   possibles.   (*ambiguous*)
          Marie has interviewed all   the candidates possibles
          'Mary interviewed every possible candidate.'

          (i) Mary interviewed every potential candidate.   (*modal reading*)

          (ii) Mary interviewed every candidate that it was   (*implicit relative*
               possible for her to interview.   *clause reading*)

French is thus special with respect to the ambiguity pattern outlined above in that it seemingly combines properties from the Germanic languages and the Romance languages in having the ambiguity of interpretation of the adjective in prenominal position, like English, whilst having, at the same time, the same choice of interpretation in the postnominal position, like Italian and other Romance languages.

While French thus allows more freedom in the interpretation of the adjective *possible*, and is able to accommodate both the modal interpretation and the implicit relative clause reading in both positions, it is more restricted than either English or Italian with respect to the stage-level versus individual-level interpretation of adjectives, as we will see in the following paragraph.

2.2 The individual-level vs. stage-level ambiguity

One well-known example for adjectival ambiguity concerns the individual-level vs. stage-level reading. While the individual-level adjective describes a permanent property of the noun, the stage-level reading induces an interpretation in terms of a temporary, transient property of the noun in question. In the English example in (6) the adjective *visible* can yield both the individual-level and the stage-level interpretation.

(6) a.   The visible stars include Aldebaran and Sirius.   (*ambiguous*)

   (i) The stars that are generally visible include   (*individual-level*)
       Aldebaran and Sirius.

   (ii) The stars that happen to be visible now include   (*stage-level*)
       Aldebaran and Sirius.

   b.   The (only) stars visible are Aldebaran and Sirius.   (*unambiguous*)

   (ii) The stars that happen to be visible now include   (*stage-level*)
       Aldebaran and Sirius.

Again, with respect to the distribution of the ambiguity, Italian in (7) follows the opposite pattern: the prenominal position is unambiguous, yielding only the individual-level interpretation, and the postnominal position is ambiguous.

(7) a.   Le invisibili stelle di Andromeda sono molto distanti. (*unambiguous*)
       the invisible stars of Andromeda are   very   distant
       'The invisible stars of Andromeda are very far away.'

   (i) The stars of Andromeda which are generally   (*individual-level*)
       invisible, are very far away.

   b.   Le stelle invisibili di Andromeda sono molto distanti.   (*ambiguous*)
       the stars invisible of Andromeda are   very   distant
       'The invisible stars of Andromeda are very far away.'

(i) The stars of Andromeda which are generally   (*individual-level*)
    invisible, are very far away.

(ii) The stars of Andromeda which happen to be   (*stage-level*)
     invisible now, are very far away.

French, as already mentioned, differs from both the Germanic and English pattern in that it seems to place severe restrictions on the occurrence of *invisible* in prenominal position. The French counterpart to the English and Italian sentences in (6) and (7), for instance, disallows *invisible* in prenominal position, as illustrated in (8) below. Quite unexpectedly, too, invisible in postnominal position only yields the individual-level reading, rather than being ambiguous.

(8)   a.   *Les invisibles étoiles d'Andromède sont très lointaines.
            the invisible   stars of   Andromeda are very distant
           'The invisible stars of Andromeda are very far away.'

      b.   Les étoiles invisibles d'Andromède sont très lointaines.
           the stars   invisible of Andromeda are very distant
           'The invisible stars of Andromeda are very far away.'

           (i) The stars of Andromeda which are generally   (*individual-level*)
               invisible, are very far away.

Notice, however, that while the adjective *invisible* seems to be ungrammatical or marginal in the context above, it is nevertheless possible to front this very adjective to the prenominal position in other sentences, such as in the example in (9) (cited from Goes (1999: 95)):

(9)   De tous les points de Suisse, et même de l'étranger, on était accouru pour
      voir ... l'invisible objet.
      'Of every part of Switzerland, and even from foreign countries, people had
      come to see the invisible object.'[1]

However, Goes (ibid.) points out that the prenominal use of the adjective in (9) may be due to literary purposes, given that the example in question is taken from a novel where, it seems, a considerable number of other instances of unexpectedly prenominal adjectives exists. Still, even if the adjective occurs in prenominal position, no contextual information (as represented in Goes) encourages the attribution of a different reading to the adjective in prenominal position.

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[1] English paraphrase mine.

In conclusion, then, it seems that irrespective of the availability of both prenominal and postnominal position, French yields only the individual-level reading for the adjective *invisible*.

A further instance where French differ from the Romance languages and the Germanic languages is the distribution of adjectival participles, as we will see in the next section.

2.3   Adjectival Participles

It is a well-known fact that there exists a class of adjectives that can only occur in prenominal position in both Romance and Germanic. The adjectives *former* and *alleged*, for instance, are ungrammatical in postnominal position.

However, in the case of *alleged*, a second factor comes into play that may effectively influence the placement of the adjective, as we will see in what follows. More precisely, *alleged* is an adjective that is based on a participial form, that is, at least in its morphological form, it is a participle that functions as an adjective.

Consider the data below, which illustrates the distribution of the adjective *alleged* in English (10), Italian (11), and French (12).

(10)   a.   the alleged murderer
       b.   *the murderer alleged

(11)   a.   il presunto assassino
               the alleged murderer
               'the alleged murderer'
       b.   *l'assassino presunto
               the murderer alleged
               'the alleged murderer'

(12)   a.   ?le présumé assassin[2]
               the alleged murderer
               'the alleged murderer'
       b.   l'assassin présumé
               the murderer alleged
               'the alleged murderer'

As we can see from these examples, the English adjective *alleged* and its Italian counterpart *presunto* only occur in prenominal position. In French, on the other hand, the adjective *présumé* (alleged, presumed) is marginal in prenominal

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[2] Speakers vary in their acceptance of *présumé* in prenominal position (F. Martin, A. Mari, p.c.). A preliminary search on *Google* (data provided by F. Martin) yielded a clear preference for *présumé* in postnominal position, but also returned results with *présumé* in prenominal position.

position, while it is fully acceptable in postnominal position. This, obviously, distinguishes French from the Germanic and Romance languages alike.

On the basis of the generalisations discussed in the following section, this peculiar distribution of French adjectival participles such as *alleged* can later be accounted for with Local Dislocation in Distributed Morphology.

2.4   Generalizations: Morphophonological Preferences

As mentioned in the introduction, French differs from the other Romance languages (and from the Germanic languages as well) in the extent to which its surface word order seems to make allowance for morphological and phonological requirements and preferences. As we will see from the application of the prescriptive rules in (13) and (14) below (which are only two of several morphosyntactic preferences active in French), the influence of these requirements is such that it eventually overrules syntactic placement.

The first prescriptive rule, as found in many prescriptive grammars of French, concerns the number of syllables in a given adjective.

(13)   French favours polysyllabic adjectives in postnominal position and monosyllabic adjectives in prenominal position (mostly high-frequency adjectives).

The second such rule, which is equally relevant for the analysis of the data presented in §2, prescribes the position of adjectival participles.

(14)   Adjectival participles occur postnominally as a rule (cf. Goes 1999).

Given that these rules, although non-syntactic in nature, are highly respected (even to the extent that the placement of adjectives in the non-prescribed position may result in ungrammatical configurations, as we will see below), I claim that they should be considered in the distribution of French adjectives.

Taking the above-mentioned preferences into account allows us to explain the differences between French and the other Romance languages that have been illustrated above. In their formal implementation, these prescriptive rules may be captured by means of the Local Dislocation operation in the theoretical framework of Distributed Morphology, which I will discuss in what follows.

3.   Towards an Analysis: Local Dislocation

3.1   Grammar Architecture in Distributed Morphology

The architecture of the grammar in Distributed Morphology, as described in e.g. Embick & Noyer (2001), differs in a number of assumptions from the grammar architecture as perceived in generative syntax. In what follows, I will briefly

mention some points that are particularly interesting in view of the present paper (cf. e.g. Embick & Noyer 2001 for an extensive overview of the key claims of Distributed Morphology).

One of the key characteristics of the grammar as perceived in the framework of Distributed Morphology is that the morphological component of the grammar is situated on the phonological branch (deriving the phonological form, PF) of the derivation, which follows the syntactic derivation. That is, morphology essentially takes the syntactic structures as its input.

On the PF-branch of the grammar, in turn, several distinct operations can be located, as illustrated in (15) below (taken from Embick & Noyer 2001). One of these prerequisites for the resultant phonological form of a given derivation is Vocabulary Insertion, by means of which the phonological material is inserted in the structure provided by the syntax. (This process is also known as *Late Insertion*.)

(15) Grammar Architecture in Distributed Morphology (Embick & Noyer 2001)
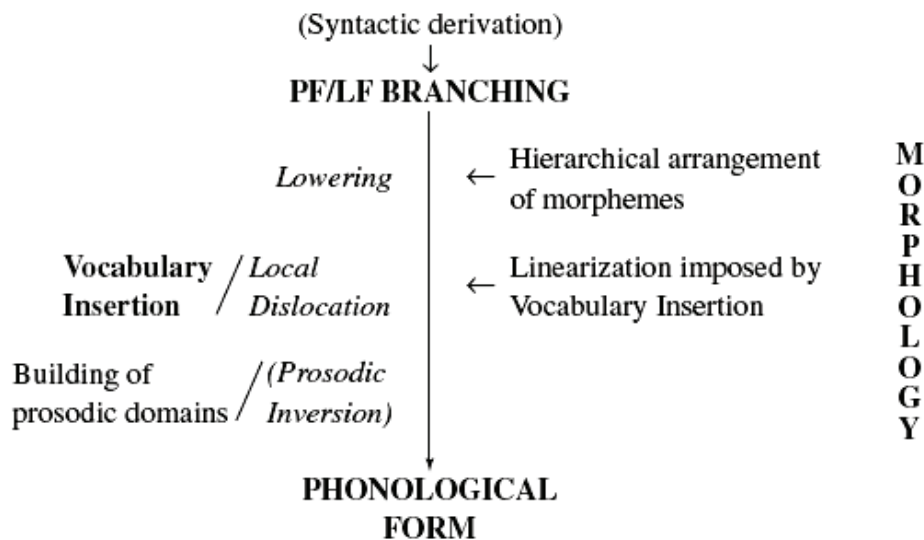
Local Dislocation, the process that I claim to be responsible for the surface word order of the adjective-noun complexes illustrated in §2, is dependent on the information provided via Vocabulary Insertion, as we will see below.

3.2 Local Dislocation

The Local Dislocation operation itself is characterized as follows. Firstly, it is directly related to the Linearization process, which is assumed to be imposed by the insertion of phonological material in the structure (i.e. Vocabulary Insertion).

Specifically, Embick and Noyer (2001) propose the Late Linearization Hypothesis, as summarized in (16).

(16) *Late Linearization Hypothesis (Embick & Noyer 2001)*
     The elements of a phrase marker are linearized at Vocabulary Insertion.

Thus, as illustrated in (15) above, since Local Dislocation applies at the point in the derivation where the structure is linearized, the relevant structural relationship for Local Dislocation is the relation of linear precedence and adjacency (cf. Embick & Noyer 2001: 563). As a consequence of this structural definition, Local Dislocation, as the name already suggests, is a strictly local operation. As Embick and Noyer (2001: 564) put it, it 'cannot skip any adjoined elements… Only adjacent elements can be reordered by the operation, and an intervening (syntactic) adjunct cannot be ignored'. As we will see in the application of this movement to the distribution of adjectives in French, this strict locality of the operation is a key point of the proposed analysis.

Since, in the framework of Distributed Morphology, the operations assumed to occur in morphology and the operations that occur in the syntax bear certain similarities to one another, it is not surprising that Local Dislocation takes on two different shapes. It can either operate on the XP level (which is defined as the Morphological Word (MWd) level), or on the X^0 level (that is, on the Subword (SWd) level). As in syntax, SWs (like heads) can only move to similar positions, while MWds can only target corresponding MWd positions. The relevant mechanisms of Local Dislocation are schematized in (17) below.

(17) a.   [X ∗ [Z ∗ Y]]   *base structure*

         X immediately precedes [Z ∗ Y]
         Z immediately precedes Y

     b.   [X ∗ [Z ∗ Y]]   *Local Dislocation*

         Local Dislocation targets the next available position

     c.   [[Z + X] ∗ Y]   *Result of Local Dislocation*

         X adjoins to Z to yield the complex [Z + X]
         both X and Z still precede Y

Given that Local Dislocation is local, X cannot adjoin to Y, hence, (18) is an illicit configuration (indicated with '#').

(18)   # [Z ∗ [Y + Y]]   *illicit configuration*

The requirements that trigger Local Dislocation are not syntactic or semantic in nature, given that morphology is situated on the PF branch of the derivation. The only requirements that may influence movement at this point of the derivation are thus morphological and phonological requirements, which, as we will see below, naturally accommodate the morphophonological preferences that are present in French.

A final point concerns the directionality of movement of Local Dislocation. The movement is generally considered to go from left to right, similar to the Lowering operation (which can, however, skip intervening elements; cf. Embick & Noyer 2001).

In the next section I will briefly discuss the derivation of the English superlative and comparative, as presented in Embick & Noyer (2001), to illustrate the role of linear order and, importantly, the sensitivity to specific Vocabulary. Both these properties will be crucial for the analysis of the distribution of French adjectives.

3.3   Local Dislocation Illustrated: English Comparatives and Superlatives

Embick & Noyer (2001) give the formation of English Comparatives and Superlatives as one example of how the Local Dislocation hypothesis is implemented.

The derivation of the English superlative and comparative form in Distributed Morphology not only illustrates the strict locality of Local Dislocation (in the derivation of the superlative form) but also its sensitivity to specific Vocabulary (in the derivation of the comparative form), which entails particular morphosyntactic requirements.

Consider the comparative forms in the sentences in (19) (Embick & Noyer 2001: 564).

(19)   a.   John is smart-er than Bill.
       b.   John is mo-re intelligent than Bill.
       c.   *John is intelligent-er than Bill.
       d.   ?*John is mo-re smart than Bill.

In their analysis of the English comparative, Embick & Noyer (ibid.) make use of the observation that the formation of the comparative in English exclusively depends on the morphophonological properties of the gradable adjective.

Crucially, they assume that the affixation process of the comparative morpheme (*-er*) or the insertion of *more* takes place after the adjective itself is

inserted into the structure. Thus, with the comparative in English, short adjectives (up to two syllables, as a rule) take the comparative suffix *-er*. Longer adjectives, such as *intelligent* in (19b), require the insertion of *more*. Hence, the formation of the comparative in English can be considered to be Vocabulary-specific.

The English Superlative, on the other hand, illustrates the strict locality requirement that is present in Local Dislocation. In particular, locality is crucial once the adjective building the superlative is modified by an adverb, as illustrated in (20) (taken from Embick & Noyer 2001: 565, and slightly modified).

(20) a.   Mary is the most amazingly smart _ person…
      b.   *Mary is the _ amazingly smart-est person…

As Embick & Noyer (2001) argue, the insertion of the adverb *amazingly*, which modifies the adjective *smart*, will be in a position that precedes the adjective in linear structure. As such, it can be considered to interfere with the placement of the superlative affix *–st*, which is placed before the adjective, like the comparative affix *–er* in comparative sentences (cf. (19) above).

Thus, if, following Embick & Noyer's (2001) assumptions, the superlative affix *–st* must precede the adjective and be adjacent to it for the affixation to take place, the adverb blocks this process because it is in the position immediately preceding the adjective. As a consequence, the superlative affix is taken up by the form *most*.

As we will see in the next section, there are parallels between the English comparative and superlative formation and the distribution of French adjectives, since the latter also incorporates the sensitivity to Vocabulary in terms of the number of syllables, and the strict locality requirement illustrated with the modification pattern in the English superlative.

4.   Local Dislocation in French Adjective Placement

4.1   The Modal vs. Implicit Relative Clause Ambiguity

The application of the Local Dislocation operation to adjectives in French permits us to account for the distributional patterns described above. The most straightforward case with respect to Local Dislocation is the modal vs. implicit relative clause ambiguity. Recall from above that French unexpectedly allows ambiguity of the adjective in prenominal position, as illustrated in (21).[3]

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[3] A reviewer expresses his concerns regarding the grammaticality of the (a) example above, pointing out that similar sentences such as (i) and (ii) below are ungrammatical (according to his judgment of the data). If this is correct, then the conclusion that French patterns like English with respect to the adjective *possible* is no longer straightforward. However, given the potential flexibility with respect to the directionality of movement in Local Dislocation (cf. the discussion below), the examples below could be captured in terms of optionality of movement (which is clearly possible with Local Dislocation).
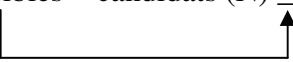
(21) a.   Marie a   interrogé   tous les possibles candidats.   (*ambiguous*)
           Marie has interviewed all   the possible candidates
           'Mary interviewed every possible candidate.'

      b.   Marie a   interrogé   tous les candidats possibles.   (*ambiguous*)
           Marie has interviewed all   the candidates possible
           'Mary interviewed every possible candidate.'

The occurrence of the ambiguity can be explained in two different ways. Suppose first that if Local Dislocation, as claimed above, moves elements from left to right, the adjective *possible* in French patterns like its English counterpart by being base-generated in the prenominal position, thereby yielding ambiguity. This base configuration is illustrated in (22).

(22) possibles (ambiguous) candidats (N)

By means of Local Dislocation, as schematized in (23), the adjective targets the next available position, the position following the noun, resulting in the configuration in (24).

(23) possibles   candidats (N) _

Local Dislocation

(24)   _ candidats (N) possibles

With this process of relocating the adjective, one of the morphophonological requirements present in French is satisfied, that is, that polysyllabic adjectives preferably occur in postnominal position (as in (24)).

The lack of change in the interpretation of the adjective is expected under the Local Dislocation account: movement is for morphophonological reasons only, and therefore does not affect the semantic content of the adjectives.

As implied above, there is a second possibility to derive the above configuration. In principle, if Local Dislocation were allowed to move elements from right to left (parallel to standard syntactic movement), the derived position of the adjective *possible* in French could be the prenominal one. The base position, the postnominal position, would thus conform to the pattern that we find

---

(i)   *Marie a mangé dans tous les possibles restaurants
           Marie has eaten in   all   the possible restaurants
           'Mary has eaten in all possible restaurants'
(ii)   *Marie a   lu tous les possibles livres
            Marie has read all   the possible books
            'Mary has read every possible book'

in the other Romance languages, in the sense that they display ambiguity in postnominal position. Based on this assumption, the adjective could be locally dislocated to the prenominal position. Crucially, again the reading does not differ. One argument in support of the latter implementation consists in the observation that adjectives ending in *–ible* and *–able* preferably occur in postnominal position (cf. the lists of adjectives provided in Goes 1999 which support that view).

However, as the ramifications of the assumption that Local Dislocation can go both ways are not entirely clear yet in the light of other structures it may apply to, I will conclude, for the time being, that French follows the English pattern in this particular respect.

In the instance described in the following section, quite the opposite seems to hold, since the pattern with the individual-level vs. stage-level ambiguity is such that there is no 'surplus' ambiguity, as with the modal vs. implicit relative clause case, but a lack of ambiguity instead.

4.2   The individual-level vs. stage-level ambiguity

Recall the pattern of the adjective *invisible* (repeated in (25)) which only yields the individual-level reading in French.

(25)   a.   *les invisibles étoiles
             the invisible stars
             'the invisible stars'
       b.   l'   invisible objet   (*individual-level*)[4]
             the invisible object
             'the invisible object'
       c.   les étoiles invisibles   (*individual-level*)
             the stars   invisible
             'the invisible stars'

Given that French does not display any ambiguity with this particular adjective, the base hypothesis is that the adjective is base-generated in a position where it can obtain the individual-level reading, without any ambiguity. From the cross-linguistic point of view, this leaves us with the assumption that *invisible* should be base-generated in prenominal position, which yields the individual-level reading for this particular adjective in the Romance languages (cf. Italian, repeated in (26) below).
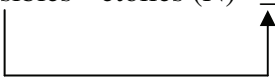
(26)   Le invisibili stelle di Andromeda sono molto distanti.   (*individual-level*)
         the invisible stars of Andromeda are   very distant
         'The invisible stars of Andromeda are very far away.'

---

[4] Recall from above that the context of this particular example does not provide any support for a stage-level reading.

The Local Dislocation process would thus be analogous to the modal vs. implicit relative case schematized in (22) to (24) above. The base configuration for the adjective invisible is illustrated in (27). Local Dislocation then moves the adjective to the right, past the noun, as shown in (28), which subsequently results in the surface word order of (25c), as shown in (29).

(27)   invisibles (individual-level)   étoiles (N)

(28)   invisibles   étoiles (N)   _

Local Dislocation

(29)   _ étoiles (N) invisibles

Again, this movement serves to satisfy the requirement that in French, polysyllabic adjectives should occur in postnominal position. Moreover, it explains the availability of the example in (25b): if the adjective is generated in prenominal position, and Local Dislocation as post-syntactic movement is an optional (albeit very frequent) process, the adjective may remain in its base position. This, of course, does not explain why invisible should be ungrammatical with the noun *étoiles*, as in (25a). However, as the somewhat special situational context of (25b) suggests (that is, a certain literary flavor), the sentence in (25a) might also be grammatical in a particular, maybe similar, context.

Thus, with this particular adjective, French seems to follow the Romance pattern, crucially, though, without creating any kind of ambiguity in prenominal or postnominal position.

As we will see in the next section, the second morphophonological preference discussed above, that is, that adjectival participles preferably occur in postnominal position, can also be accommodated with the Local Dislocation movement.

4.3   French Participles

As illustrated in §2, French quite unexpectedly allows adjectival participles that are restricted to prenominal position in both Romance and Germanic, in postnominal position, as illustrated in the contrast between (30) (French) and the overview of the other languages in (31).

(30)   a.   ?le présumé assassin
                the alleged murderer
                'the alleged murderer'

b.   l'assassin présumé
     the murderer alleged
     'the alleged murderer'

(31) *prenominal position   Noun   postnominal position*
      presunto   assassino   *presunto   (Italian)
      alleged   murderer   *alleged   (English)

In fact, in French, the more natural position for the adjective actually seems to be the postnominal position, as illustrated by a corpus example (one of many) in (32).

(32) Toujours silencieux, Volkert Van der Graaf, *le meurtrier présumé* de Pim Fortuyn, a été placé pour dix jours en détention préventive par un tribunal d'Amsterdam.

     'Still remaining silent, Volkert Van der Graaf, the alleged murderer of Pim Fortuyn, has been put in remand for ten days by a tribunal in Amsterdam.'[5]

Again, this curious behavior of the French adjectival participle with respect to its counterparts in other languages may receive two different interpretations.

On a syntactic basis, one could argue (e.g. A. Fabrégas, p.c.), as has generally been implied in the literature on adjectival participles, that these participles have a different structure than regular adjectives. As such, due to their verbal character, they are base-generated as reduced relatives, which would amount to generating them in postnominal position. By means of movement of XPs, these adjectives end up in prenominal position in both Italian and English. French, however, differs from these two languages by having a clear preference for the participles in postnominal position, thereby preventing movement that would result in having participles in prenominal position.

While the morphophonological preference of having adjectival participles in postnominal position in French thus might fall out from the structural behavior of participles on the above analysis, the second way to account for the above data is, again, Local Dislocation. Let us first consider how Local Dislocation explains the distribution of the French adjectival participle *présumé*.

On the basis of the cross-linguistic configuration illustrated in (31) above, the participial adjective *présumé* in French could also be considered to be base-generated in prenominal position, as shown in (33). From this position, it subsequently undergoes Local Dislocation (34) to the postnominal position (35).

(33) présumé   assassin (N)

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[5] Example taken from the TWIC Corpus, *Le Monde 2002*. English Paraphrase mine.

(34) présumé   assassin (N) _

Local Dislocation
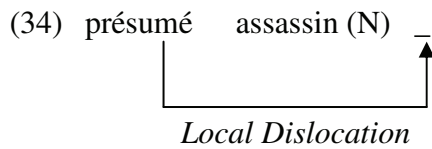
(35) _ assassin (N) présumé

Again, the readings are not affected, and the strong preference in French for placing participial adjectives in postnominal positions (along with the preference for polysyllabic adjectives in postnominal positions) is satisfied.

At first glance, then, both approaches seem to be able to account for the data. One argument for the syntactic approach lies in the fact that many participles cannot occur in prenominal position, as shown with the participle *brûlé* (burnt) in (36) below, which is virtually impossible in prenominal position (F. Martin, p.c.). On the other hand, my informants do not strictly rule out participles such as *présumé* in prenominal position either, as indicated with the question mark in (30a), repeated in (37) below, which would quite unexpected under a (syntax-based) account that does not allow adjectival participles in prenominal position in French.

(36) a.   *le brûlé pain
            the burnt bread
            'the burnt bread'
      b.   le pain brûlé
            the bread burnt
            'the burnt bread'

(37) ?le présumé assassin
      the alleged murderer
      'the alleged murderer'

Pending further investigation concerning a potential difference in interpretation in prenominal or postnominal position, I therefore conclude that the Local Dislocation operation, in its sensitivity to morphophonological requirements, account for the distribution of French participles, without taking recourse to the syntactically and structurally complex character of participles as such.

5.   Conclusion

In this paper I have argued that Local Dislocation (cf. Embick & Noyer 2001) can account for the unexpected placement of adjectives in French.

Specifically, I have shown that adopting an analysis that employs the re-ordering of syntactic structure in the morphology component of the grammar (as postulated in the framework of Distributed Morphology) allows us to incorporate

two of the morphophonological preferences that are active in French but not in the other Romance languages or Germanic languages:

(i)   the preference for placing polysyllabic adjectives in postnominal position, and

(ii)   the preference for also placing adjectival participles in postnominal position.

These preferences, I have argued, can be captured with Local Dislocation, and ultimately explain the peculiarities in the distributional pattern of adjectives in French in three different cases:

(i)   the modal vs. implicit relative clause interpretation adjectives, illustrated with the adjective *possible*,

(ii)   the individual-level vs. stage-level ambiguity, illustrated with the adjective *invisible*, and, finally,

(iii)   the unexpected behavior of the French adjectival participle *présumé* (alleged), which, unlike its counterpart in Italian or English, preferably occurs in postnominal position.

Being post-syntactic in character, however, Local Dislocation can only apply if the displacement operation does not affect the interpretation of the adjective. I have shown that in the three sets of data that I have discussed, the readings remain stable.

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Kirsten Gengel
Institute of English Linguistics
University of Stuttgart
Heilbronner Str. 7
70174 Stuttgart

kirsten@ifla.uni-stuttgart.de

Differential Object Marking in Mongolian[*]

Dolgor Guntsetseg

University of Stuttgart

Abstract. In this paper, I will deal with the phenomenon of Differential Object Marking (DOM) in Mongolian. In this language some direct objects are overtly case marked and others not. In other languages that also exhibit this phenomenon different semantic and pragmatic factors have been identified which trigger it. In this paper I will try to give answers to the following two questions: (i) how relevant are these factors for DOM in Mongolian and (ii) do other factors play a role as well. The discussion is primarily based on my own native speaker intuition. Some results of an empirical survey, which was constructed to clarify some unclear cases, will also be discussed.

1. Introduction

Mongolian exhibits Differential Object Marking (DOM), a phenomenon also found in some other languages. The direct object of a transitive clause can be either overtly marked with accusative case or it can occur without any case suffixes. This phenomenon in Mongolian has not been discussed very much until now. Some factors which trigger DOM cross-linguistically have been reported in the literature, including referentiality, animacy and topicality.

In this paper, I will investigate how relevant these factors are for DOM in Mongolian. The structure of this paper is as follows. Firstly, I will introduce the typological characteristics of Mongolian and its DP structure, because it is important for the later discussion of DOM. Secondly, each factor relevant for DOM will be illustrated with examples, based on my native speaker intuition. Some hypotheses concerning unclear cases are also proposed and I discuss an empirical acceptability survey which was compiled to test them. The results of this empirical survey will be discussed in section 5.

2. Preface to Mongolian

2.1 Typological characteristics of Mongolian

Mongolian is spoken by an estimated 6 million speakers in Mongolia, Buryatia (an area around Lake Baikal) and in the autonomic province of Inner Mongolia in China. This paper investigates Khalkha Mongolian, the main dialect of Mongolian and also the official language in Mongolia.

In the linguistics literature and encyclopedia, Mongolian is usually assigned to the Altaic language family along with the Turkic and Mandji-Tungusic languages. Japanese and Korean are also assigned to this language family. Although there are many common typological characteristics among these languages, this genetic relation is not definitely confirmed. They are also often referred to as the Altaic Sprachbund, because of their regional language contacts.

Mongolian shares with other Altaic languages some typological characteristics such as vowel harmony, agglutinated morphology, SOV-structure and the lack of a gender system. There are several features of Mongolian that are different as compared with, for example, the Turkic languages. Some features which are important for this paper are the following:

Personal suffixes. There are no personal suffixes on finite verbs.

(1) a. (Ben) bu kitab-ı oku-du-**m**. *Turkish*
         I this book-Acc read-Pst-**1Sg**
         'I read this book.'
     b. (Sen) bu kitab-ı oku-du-**n**
         you this book-Acc read-Pst-**2Sg**
         'You read this book.'

(2) a. **Bi** ene nom-ig unsh-san. *Mongolian*
         I this book-Acc read-Pst.
         'I read this book.'
     b. **Chi** ene nom-ig unsh-san.
         you this book-Acc read-Pst
         'You read this book.'

Mongolian uses the same verb form, irrespective of the subject, as shown in (2), whereas in the Turkish examples in (1) the verb form is different according to the subject feature of the clause.

Pro drop. There is no pro drop in Mongolian. In the Turkish examples in (1), the subject can be omitted, whereas in the corresponding Mongolian examples in (2), this omission of subject is not possible.

The order of suffixes. In Mongolian, the possessive suffixes appear after the case suffixes, whereas in Turkish they appear before the case suffixes, as illustrated in (3) and (4). Kornfilt (1997) assumes that these possessive suffixes are agreement markers in Turkish.

(3) (Sen) ben-im kitab-im-**ı** oku-du-n. *Turkish*
      you I-Gen book-Poss.1Sg-Acc read-Pst-2Sg
      'You read my book.'

(4) Bold   naiz   ohin-**ig**-oo   uns-sen.   *Mongolian*
     Bold   friend   girl-Acc-Poss.   kiss-Pst
     'Bold kissed his girlfriend.'

2.2   The DP structure in Mongolian

The phenomenon DOM is expressed structurally on noun phrases. Therefore, I will introduce firstly the structure of the DP in Mongolian in this section.

The DP-structure can be very complex in Mongolian as shown in Table 1. This table shows the different syntactic positions in the Mongolian DP and the possible arguments which can fill these positions.

Table 1: The DP structure in Mongolian

lexical items							suffixes / particles	
dem./ poss. pronouns	prenom quant.	numeral	attribut. NPs	adject.	**head noun**	postnom. quant.	case-suff.	poss. suff./ particles

In the following, I will describe each slot with its potential expressions.

Demonstratives. Most grammars of Mongolian (e.g. Poppe 1951) claim that there are no definite articles. However Mongolian shows a complex system of marking definiteness. The demonstratives *ene/ter* 'this/that' are used to indicate definiteness, and have different uses such as deictic or anaphoric ones and so on. This is further discussed in section 3.2.

Quantifiers. The quantifiers in Mongolian can occur either before the head noun or after it. Therefore, I call these prenominal quantifiers, which are *buh/zarim* 'all/some' in example (5), and postnominal which are *bur/bolgon* 'every/each' in (6).

(5) Bi   buh   nom-ig   unsh-san.
     I   all   book-Acc   read-Pst
     'I read all books.'

(6) Bi   nom   bolgon-ig   unsh-san.
     I   book each-Acc   read-Pst
     'I read each book.'

Numerals. The preferred position of numerals is before the attributive and adjectival clauses as in (7). The numeral *neg* 'one' can also be used to indicate indefiniteness (see section 3.3).

(7) Bi **neg** goyo   duul-dag sain jujigchin-g   tani-na.
    I a/one beautiful sing-Hab good actor-Acc   know-Prs
    'I know a good actor, who sings beautifully.'

Attributive NPs. The genitive noun phrases and the relative clauses can be found in this slot. They are always before the head noun.

Adjectives. There is no congruence between the adjectives and the head noun.

Head noun. It is generally phrase final, therefore case and possessive suffixes attach to it, except for postnominal quantifiers. In cases such as in example (6), the case suffix must occur on the quantifier and not on the head noun.

Case/possessive suffixes. These morpho-syntactic markers attach to the right edge of a nominal phrase.

3. DOM in Mongolian

3.1 Referentiality scale

The phenomenon that DOM denotes is that in certain languages objects can be marked differently morpho-syntactically. In other words, some objects can be overtly case marked, and others not. In the literature (Bossong, 1985; Aissen, 2003), it is assumed that differential object marking is triggered by three main factors: referentiality (or definiteness), animacy and topicality. Furthermore, in von Heusinger & Kaiser (2007) the influence of verb classes is discussed. These factors are variable among the languages. The way in which DOM is realized differs across languages. One example from Turkish is illustrated in (8).

(8) a. (Ben)   bir kitap oku-du-m.
        I   **a**   book read-Pst-1Sg
        'I read **a** book.'   *indefinite non-specific*
    b. (Ben)   **bir** kitab-**ı**   oku-du-m.
        I   **a**   book-**Acc** read-Pst-1Sg
        'I read **a certain** book.'   *indefinite specific*

In Mongolian the direct objects of transitive clauses can occur either with the accusative suffix *-(i)g* or in unmarked nominative form. This phenomenon of DOM is discussed only marginally in the Mongolian grammars. Poppe (1951, p.62) describes the lack of an accusative suffix on the direct objects as an indefinite case. The newer Mongolian grammar of Kullmann & Tserenpil (2001, p. 87) explains it as follows (emphasis by the authors):

"Until recently, Mongolian scholars believed that the Mongolian language did not distinguish between definite and indefinite nouns because the articles which western European languages have are not present in the Mongolian language. However, linguists have now discovered how to determine definite and indefinite nouns in Mongolian: they are clarified **with the help of accusative suffixes** …"

It is correct that all definite noun phrases must take the case suffix. However, there are also combinations of indefinite noun phrases — marked with *neg* — and the case suffix as in the example (8) from Turkish and in (9) from Mongolian. Therefore, the accusative suffix *-(i)g* cannot mark definiteness but must indicate some other properties.

(9) Bi   neg   ohin-ig   har-san.
      I   a   girl-Acc   see-Pst
      'I saw a girl.'

I will propose that the above-mentioned main factors (see section 1) also play a role in DOM in Mongolian. Most importantly, they work not at the same time but rather stage to stage. In the following, these stages will be investigated in detail.

Firstly, differential object marking in Mongolian patterns according to the Referentiality Scale in (10), which is suggested by Aissen (2003).

(10) Referentiality scale of Aissen (2003, p. 437):

pers. pron. > proper names > def. NP > indef. spec. > indef. non-spec.

Each point of this scale will be discussed in conjunction with DOM in the following sections.

If the direct objects are realized as personal pronouns, as in example (11), or as proper names (12), the accusative marking is obligatory.

(11) Bi   chama*(ig) har-san.
      I   you.Acc   see-Pst
      'I saw you.'   *personal pronouns*

(12) Bi   Bold*(-ig) har-san.
      I   Bold-Acc   see-Pst
      'I saw Bold.'   *proper names*

3.2. Definite noun phrases

Most grammars of Mongolian claim that there is no definite article. However, Mongolian shows a complex system of marking definiteness. Demonstrative, anaphoric and possessive determiners are used to indicate definiteness, even

though in different uses of definiteness. The definite noun phrases are obligatorily accusative case marked as direct objects.

Unique and generic expressions are expressed by bare nouns. As direct objects they must be marked with an accusative suffix, as illustrated in (13) and (14). Note, however, that some bare nouns may also function as weak indefinite or incorporated noun phrases, and therefore do not take accusative case. This will be discussed later.

(13) Bi   yerunchiilegch*(-ig)   har-san.
      I   president-Acc   see-Pst
      'I saw the president.'

(14) Dugui*(-g)   ankh   1817 on-d   butee-sen.
      bicycle-acc   firstly   1817 year-Dat   develop-Pst
      'Bicycles were developed in 1817.'

Demonstrative noun phrases with *ene/ter* 'this/that' are used deictic contexts as in (15). In this case, the object *nom* 'book' is locally visible. The context to this case would be such that the speaker of (15) answers ti the question "Which of these books did you read?"

(15) Bi   ene/ter   nom*(-ig) unsh-san.
      I   this/that   book-Acc   read-Pst
      'I read this/that book.'

The demonstrative *ter* 'that' and *nuguu* are used in anaphorically. In other words, they indicate discourse familiarity. There is an interesting meaning difference between *ter* and *nuguu*. *Ter* is used for close context familiarity, as in (16).

(16) A: I read his new book.
      B: Bi   bas   ter   nom*(-ig) unsh-san.
            I   also   the   book-Acc   read-Pst
            'I also read it.'

In (17) the situation is that two students talked about reading a certain book. So a few days later the one asks the other if he has finished the book and (17) would be the answer. This is a case of discourse familiarity where the discourse took place at some earlier pont in time.

(17) Bi   nuguu   nom-ig   unsh-aad   duus-san.
      I   the   book-Acc   read-Cvb   end-Pst
      'I finished reading the book.'

As the examples show, these noun phrases with *ene/ter/nuguu* are obligatorily marked with an accusative suffix as direct objects.

Furthermore, possessive noun phrases are also definite and obligatorily case marked as direct objects (see example in (4)).

3.3   Indefinite noun phrases

Indefinite noun phrases can be marked with accusative case, in other words, overt accusative marking is optional for these instances. Before I deal with this optionality, I will show first how the indefinite noun phrases are structured in Mongolian. Again, grammars of Mongolian claim that there is no indefinite article in Mongolian. But it seems that the numeral *neg* for 'one' functions as an indefinite article; it is even developing to become an indefinite article, located at least in stage 1 of the development of indefinite markers as discussed by (Givon 1981): the earliest developing stage of indefinite markers is referential-indefinite in which the numeral one is used to introduce a new referent into the discourse.

(18)   Bi   neg   ohin(-ig)   har-san.
       I   a   girl-Acc   see-Pst
       'I saw a girl.'

As already mentioned, the case marking of indefinite direct objects is optional, but sometimes not very acceptable. The optionality of accusative marking of indefinite noun phrases seems, at first glance, to depend on the specificity of direct objects, similar to Turkish (Enç 1991, von Heusinger & Kornfilt 2005).

(19)   a.   Bold neg ohin uns-sen.
             Bold a   girl kiss-Pst
             'Bold kissed a girl.'   *specific or non-specific*
       b.   Bold neg   ohin-ig   uns-sen.
             Bold a   girl-Acc   kiss-Pst
             'Bold kissed a (certain) girl.'   *specific reading*

We see that in (19b) the accusative marking intends a specific reading, it is a certain girl who is kissed by Bold, whereas in (19a) the unmarked form of direct object shows neutrality in terms of specificity. It can have both readings: specific or non-specific.

However, there are other examples where accusative marking is hardly acceptable for some indefinite noun phrases. For example:

(20)   Bi   neg   nom([?]-ig)   unsh-san.
       I   a   book-Acc   read-Pst
       'I read a book.'

Here, accusative marking on *neg nom* 'a book' is less acceptable, despite having a specific reading. This fact will be discussed in detail in section 4.

In Mongolian, there are also bare nouns with very weak indefiniteness sometimes called semantically incorporated nouns. Incorporated noun phrases are defined in the literature as nouns that fill the syntactic argument positions, but semantically do not introduce discourse referents. One example of this is in (21) from German.

(21) Gestern   bin   ich   Rad$_i$ ge-fahr-en.   *Es$_i$ ist   rot.
     yesterday Aux   I   bicycle   Ptcp-drive-Ptcp   it   be.Prs   red
     'Yesterday I did cycling. It is red.'

These nouns build a semantic unit together with the verb, and are generally realized by bare nouns (see Dayal, 2003 for Hindi and Öztürk, 2005 for Turkish). In Mongolian, there is no clear distinction between non-specific indefinites and incorporated nouns, so that it is very difficult to distinguish them. Discourse transparency is a good criterion for German, since it is not possible to pick up the incorporated noun in the next sentence by an anaphoric pronoun. However, this criterion does not apply equally well to Mongolian, as shown in (22), and awaits further research:

(22) Bi   uchigdur   nom(*-ig) unsh-san. $^?$Ter ikh   sonirholtoi bai-san.
     I   yesterday book-Acc read-Pst   it   very   interesting be-Pst
     'Yesterday I read a book / did book-reading. It was interesting.'

The use of accusative marking on such bare nouns is ungrammatical, as one sees in (22).

All the relevant points relating to the referentiality scale discussed above are summarized in table 2 below.

Table 2: DOM in Mongolian according to the Referentiality Scale

pers. pronouns	proper names	definite NPs	indefinite NPs		weak indefinite /incorporated NPs
			+spec	-spec	
+	+	+	+/-	-	-

4.   Animacy and further factors

As the examples (19) and (20) in 3.3 have shown, there are some restrictions for accusative marking on indefinite noun phrases. My first assumption was, as discussed, that the accusative case marking of indefinite noun phrases depends on the specificity feature of direct objects.

However, we have seen that the accusative marking of a direct object, such as *neg nom* 'a book' in (20) is hardly acceptable, despite having a specific reading. Therefore, I will argue that the optional accusative marking of indefinite

direct objects does not only depend on specificity, but also on further factors such as animacy. By comparing (19) and (20), we see that the accusative marking on [+human, +specific] objects is fully acceptable, whereas the accusative marking on [-animate, +specific] object is hardly acceptable. There is also no problem with the animate direct objects; they allow marking with an accusative suffix when specific.

For this reason, I will propose that DOM of indefinite direct objects depends firstly on animacy and secondly on specificity. Table 2 can now be expanded to table 3. The feature of animacy does not play a role for either definite or for weak indefinite and incorporated noun phrases. It is only important for indefinite noun phrases.

Table 3: Animacy for DOM of indefinite noun phrases

definiteness scale	pers. pron.	proper names	definite NPs	indefinite NPs		weak indefinite/ incorporat. NPs
animacy scale				+spec	-spec	
+ human	+	+	+	+/-	-	-
+ animate	+	+	+	+/-	-	-
- animate	+	+	+	(+)/-	-	-

However, the optionality of case marking has still not been fully explained. The overt case marking indicates that the direct object is specific, but direct objects without an accusative suffix can also be specific. That is, the optionality shown in the highlighted box in table 3 was to depend on further factors. Therefore, I propose the following hypotheses in conjunction with some different semantic and pragmatic aspects of DOM:

Hypothesis of animacy:

The probability of overt accusative marking is higher if the indefinite direct object is higher in animacy.

Hypothesis of discourse prominence:

The accusative suffix on an indefinite direct object shows up if that direct object is referred to by an anaphoric expression in the following sentences, i.e., when the object is high in discourse prominence

Hypothesis of verb semantics:

The overtly accusative marking of indefinite direct objects depends on the semantics of the verb. For example:

    a.   Verb types, whose objects are different in animacy
    b.   Intensional verbs such as *search*
    c.   Verbs with incremental themes as direct objects
    d.   Verbs which cause changes to direct objects

Hypothesis of scope:

The scopal circumstances cause the overt accusative marking of indefinite direct objects.

In order to test these hypotheses, I made an empirical survey in the form of a written questionnaire in Mongolia in summer 2007. Some parts of the analysis and the results of this questionnaire will be discussed in the next section.

5.   Questionnaire

The questionaire consisted of 75 test sentences relating to DOM and about 100 filler/control sentences. These sentences were divided into 4 different questionnaires. The informants judged 18 or 19 sentences for DOM. 320 informants (160 students and 160 employees who have a graduate degree) were asked and so there are 80 judgements per sentence.

This empirical survey was made in the form of a written questionnaire. The informants had to read one test sentence and fill in their judgement as to how good the sentence sounded on a scale from 1 (very bad) to 6 (very good). Given the size of the whole survey, I have decided to discuss in this paper only some parts of its results, namely those relating to discourse prominence, verb semantics and scopal specificity.

5.1   DOM and discourse prominence

During my investigation of DOM in Mongolian, I constructed different example sentences as a native speaker. Sentences with accusative marked direct objects express a higher discourse prominence than direct objects without case marking. I understand discourse prominence to be the property of an expression which serves as an antecedent in discourse. An expression with high discourse prominence is easily referred to by an anaphoric expression, while one with low discourse prominence is not so easily accessible.

As mentioned in relation to example (20), the accusative suffix is very questionable with indefinite inanimates, but not necessarily ungrammatical. If I add an accusative suffix on *neg nom* 'a book', it indicates that I want to tell more about this book in the next sentence, as in (23):

(23) Bi   uchigdur   neg   nom-ig   unsh-aad   duusga-san.   Ter   ikh
      I   yesterday a   book-Acc   read-Cvb   finish-Pst   it   very
      sonirkholtoi   nom   bai-san.
      interesting   book   be-Pst
      'Yesterday I finished a book. It was very interesting.'

On the basis of this intuition, I propose the following hypothesis of discourse prominence:

> The accusative suffix on an indefinite direct object shows up if that direct object is referred to by an anaphoric expression in the following sentences.

For testing this hypothesis, I constructed three main clauses whose direct objects are marked with an accusative suffix. To find out whether the anaphoric relation played a role for overtly case marking the test sentences were built in 3 different structures as follows:

1)   Coordination: the anaphoric expression to the direct object is in the same clause, e.g. "John kissed a girl <u>and</u> she slapped him."
2)   Next sentence: the anaphoric expression to the direct object is in the next sentence, e.g. "John kissed a girl. She slapped him."
3)   No anaphoric: There is no anaphoric expression in the following sentences, e.g. "John kissed a girl. James did not come to the school today. …"

The informants saw and judged only one of these three sentences. The direct objects of the main clauses were also different in animacy, so the test sentences in structure 1 are as follows:

- Bold kissed a girl and she slapped him.
- I stroked a dog and it bit me.
- I read a book and it was interesting.

The result of this analysis is shown in graphic 1. The judgement means decrease if the direct objects are lower in animacy, is in both the coordinated structure as in the structure where the anaphoric expression is in the next sentence. The last line of no anaphoric relation does not conform to this interpretation, because inanimates are judged better than animates and humans. I guess that the test sentence was not well chosen. The judgement means relating to the different structures also decrease from the coordinated to no anaphoric relation, except the last point about inanimate direct objects.

Graphic 1: The result of the analysis of discourse prominence

Interaction between animacy and type of anaphoric relation
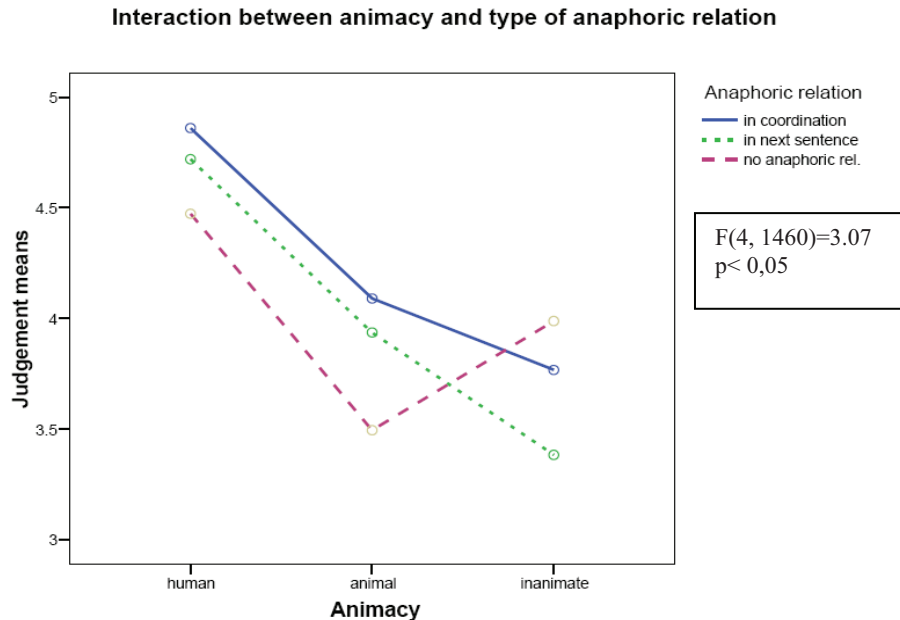
In summary, the direct object of a transitive clause is more likely to be marked by an accusative suffix if the speaker wants to tell more about it in the following discourse.

5.2 DOM and verb semantics

Von Heusinger & Kaiser (2007) discussed that verb semantics also play a role in DOM. I wanted to investigate whether verb semantics influences DOM in Mongolian as well and proposed the following hypothesis:

Hypothesis of verb semantics:

  The overtly accusative marking of indefinite direct objects depends on the semantics of the verb.

For testing this hypothesis I constructed test sentences for the following different verb types:
  a. Verb types whose objects are different in animacy
  b. Intensional verbs such as *to search*
  c. Verbs with incremental themes as direct objects
  d. Verbs which cause changes to direct objects, such as *to repair*
In this paper, I will show only one contrast, namely the contrast between the verbs 'to read (a book)' and 'to write (a letter)'. The difference in these verbs is the affectedness of their direct objects: the verb 'to read' does not trigger any

affectedness on 'a book', whereas the verb 'to write' affects 'a letter' in the sense that the letters comes into being incrementally by writing. Such incremental themes are expected to occur as direct objects with accusative suffixes, rather than in unmarked nominative form. In the questionnaire, the direct objects 'a book' and 'a letter' occur in two forms: one in unmarked form and one in accusative marked form. Each informant judged only one form. The result of this analysis is illustrated by graphic 2. There is a big difference in judgement means between the two verbs with accusative direct objects: the accusative form of the clause 'to read a book' is rated at 3.6, whereas the accusative form of the clause 'to write a letter' is rated at almost 4.5.

Graphic 2: The result of the analysis of verb semantics

Interaction between verb type and case
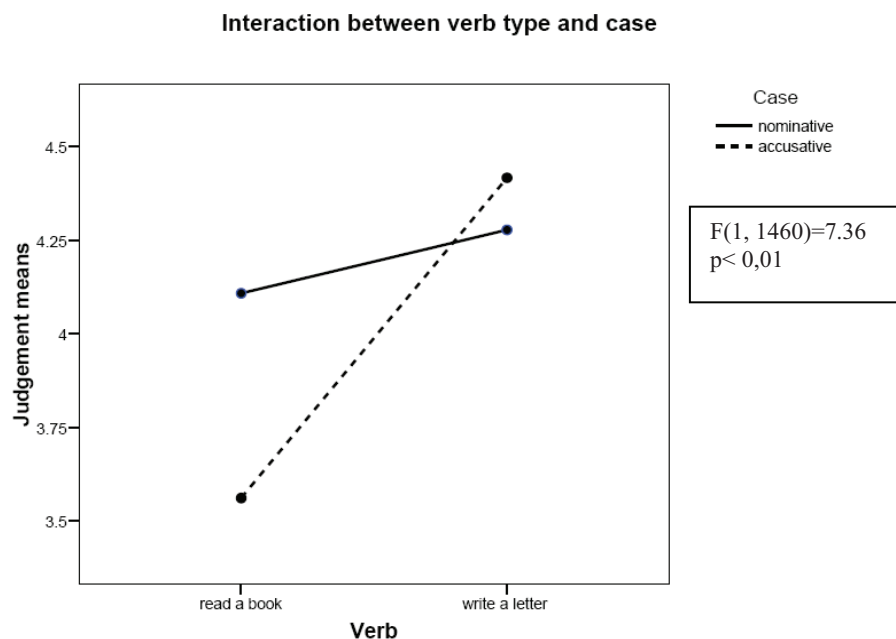
To sum up, if a verb triggers affectedness of its direct object, as in the case of incremental themes, the accusative marking on direct objects is more common. Therefore, we can say that the hypothesis of verb semantics is confirmed.

5.3   DOM and scope

As mentioned above in (19), the overt case marking of indefinite direct objects depends on its specificity. More specifically, it depends on a kind of epistemic specificity, where the speaker has a specific entity in mind. There are also contexts where indefinite direct objects can show different behaviour in terms of their scope with respect to an operator such *every day*. Clauses like *I read a book every day* can have either narrow scope or wide scope. For narrow scope, the

speaker reads a different book every day, whereas for wide scope, the speaker reads the same book every day. If the book has a wide scope over the clause, it has a scopal specific nature and it should be marked in Mongolian with the accusative suffix as a direct object. For this reason I propose the following hypothesis.

Hypothesis of scope:

> The scopal circumstances cause the overt accusative marking of indefinite direct objects.

In order to test this hypothesis, I constructed test sentences with a quantificational phrase *udur bolgon* 'every day', while the direct objects occur in two forms: in both nominative and accusative. Each test sentence was given in two contexts, one with narrow and one with wide scope. For example, the informants had to judge sentences such as "Bold wants to see a movie every day." in two different contexts: i) He wants to see different movies every day, and ii) He wants to see the same movie every day. In other words, the informants read a sentence with either a nominative or accusative direct object (but not both forms), and then judged it to each context.

The results (drawn by graphic 3) show that in a sentence with an extensional operator such as 'every day', the indefinite direct object with an overtly accusative suffix has a significant preference for wide scope. The nominative form of direct objects, on the other hand, shows, neutrality with respect to scope.

Graphic 3: The result of the analysis of scopal specificity

Interaction between case and scopal specificity

$F(1, 1460)=53.6$
$p< 0,001$
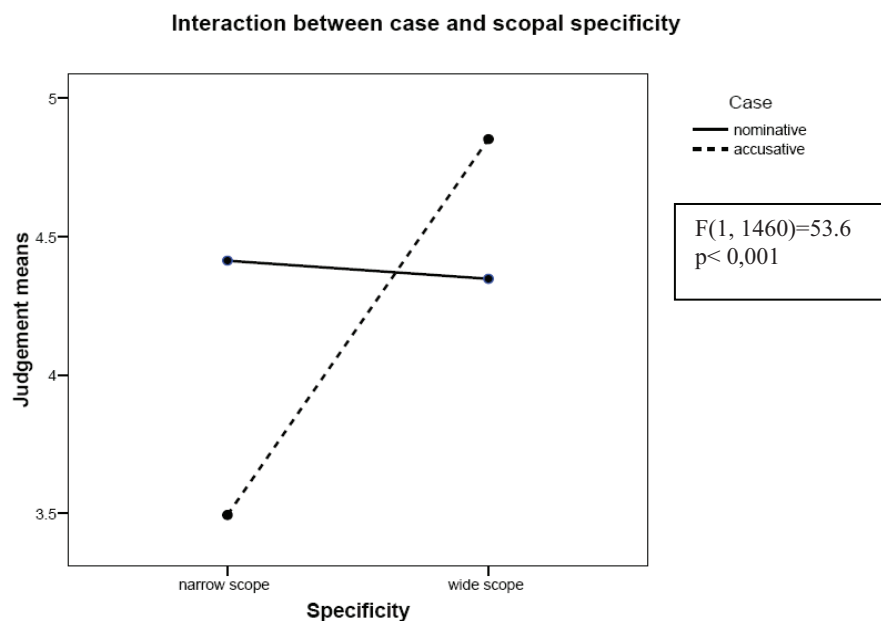
6.   Summary

On the basis of the discussion about what factors play a role for DOM in Mongolian, and also of the results from the empirical survey, the following conclusions can be drawn:

1. DOM in Mongolian depends primarily on the Referentiality Scale: if the direct objects are realized as personal pronouns, proper names and definite noun phrases, accusative marking is obligatory. Accusative marking of weak indefinites or semantically incorporated bare nouns is ungrammatical. Indefinite noun phrases with *neg* as direct object show optionality of accusative marking which depends on further factors.

2. DOM of indefinite direct objects depends primarily on animacy and secondly on specificity. The factor of specificity plays a role in a different way because of its different kinds, namely epistemic and scopal specificity.

3. There are also further factors which trigger DOM: discourse prominence and verb semantics.

4. These factors do not function or work independently of each other, instead they interact with each other.

Table 4 summarizes all factors for DOM in Mongolian.

Table 4: The factors for DOM in Mongolian

Pers.pron	Prop. nouns	Definite NPs	Indefinite NPs with *neg*		Incorporated NPs (i.e. bare nouns)
			+spec	-spec	
+	+	+	+/-	-	-

	Indefinite NPs with *neg*			Indefinite NPs with *neg*		Further factors:
	epist.+spec	epist.-spec		scop. +spec	scop. -spec	- discourse prominence
+human	+/-	-		+/-	-	- verb semantics
+animate	+/-	-		+/-	-	
-animate	-	-		+/-	-	

Dolgor Guntsetseg

Appendix: List of Abbreviations (Glosses)[1]

1	first person
2	second person
3	third person
Acc	accusative
Aux	auxiliary
Cvb	converb
Dat	dative
Dem	demonstrative
Fut	future
Gen	genitive
Hab	habitual
Inf	infinitive
Ins	instrumental
Neg	negation
Nom	nominative
Pl	plural
Poss	possessive
Prs	presens
Pst	past
Ptcp	participle
Q	question particle
Sg	singular

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[1] I followed the Leipzig Glossing rules.

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Dolgor Guntsetseg
Department of Linguistics/German studies
University of Stuttgart
Heilbronner Str. 7
70174 Stuttgart

dolgor.guntsetseg@ling.uni-stuttgart.de

External Argument PPs in Romanian Nominalizations^{*}

^{*}

Gianina Iordăchioaia

University of Stuttgart

In this paper, I investigate the properties of Romanian complex event nominals (CENs, after Grimshaw 1990) with respect to the realization of the external argument. The goal of such an attempt is two-fold. On the one hand, in view of the claim in Grimshaw that the process of nominalization is similar to that of passivization – to the extent that both suppress the external argument – a comparison between the verbal and the nominal domain will provide us with a better understanding of the conditions under which external argument PPs are licensed. On the other hand, on the assumption that external arguments are licensed by a Voice projection (Kratzer 1994), we can establish whether CENs in Romanian do project Voice. From the behavior of the infinitive and that of the supine, the two most productive CENs in Romanian, I conclude that the latter obligatorily projects a VoiceP, which licenses the external argument PP. The behavior of the former is ambiguous, so the licensing conditions for the external argument PP are dependent on the nature of the verbal root within the nominalization.

1.   Introduction

In Grimshaw's 1990 view, CENs inherit the argument structure of the verbs they are derived from, as is the case, for instance, with the theme *the city* in (1) below, realized as a PP within the CEN (1b):

(1)   a.   The enemy destroyed *the city*.
       b.   the destruction *of the city*

But unlike in the case of verbs and in contrast with the internal argument, she notices that the external argument in CENs is optional. In (2a), both the internal and the external arguments are obligatory with the verb *destroy*. In the corresponding CEN structure in (2b), although the absence of the internal argument results in ungrammaticality, the absence of the external argument *enemy's* is allowed:

(2)   a.   *(*The enemy*) destroyed *(the city).
       b.   the (*enemy's*) destruction *(of the city)

In order to explain this contrast, Grimshaw argues that the external argument position of CENs is suppressed, so *enemy's* in (2b) is an adjunct and not

an argument. In this respect, she relates the process of nominalization to that of passivization, since *by*-phrases in passives are also optional adjuncts (see (3)):

(3)   The city was destroyed (*by the enemy*).

Kratzer 1994 argues that the external argument in the verbal domain is always licensed by a Voice projection. Kratzer's argumentation is based on the contrast between adjectival passives and verbal passives in German. The presence of VoiceP with an implicit external argument explains why the reflexive interpretation for the verbal passive in (4a) is excluded. This interpretation brings about a binding Principle C violation, since the referential expression *das Kind* has an antecedent, the external argument under Voice. The lack of VoiceP explains why a reflexive interpretation is allowed with the adjectival passive in (4b): no principle violation occurs, because there is no implicit external argument:

(4)   a.   Das Kind *wurde* gekämmt.   (*eventive*: Th $\neq$ Ag; #Th = Ag)
               the child was   combed
        b.   Das Kind *war* gekämmt.   (*stative*: Th $\neq$ Ag; Th = Ag)
               the child was combed

In Kratzer's terms, Voice introduces a DP in the active and licenses a PP in the passive Voice.

The investigation of external argument PPs in English, German, and Greek leads Alexiadou, Anagnostopoulou & Schäfer 2006 to an account of the causative/anticausative alternation based on a syntactic decomposition of change-of-state verbs into a Voice and a CAUS component. Given the fact that unambiguous causer PPs with *from* disallow the agent thematic role which is always licensed by Voice, these PPs are analyzed as licensed by the CAUS in anticausative structures like (5):

(5)   The window broke *from the storm*/**from John*.   (Causer/*Agent)

Thus, the difference between active/passive and anticausative structures is that the latter lack Voice. Agentivity and causation are realized in the syntax as Voice and CAUS, respectively. The former licenses agent *by*-PPs, the latter licenses causer *from*-PPs.[1]

(6)   a.   Active/Passive   b.   Anticausative
               [Voice [CAUS [Root + Th]]]   [CAUS [Root + Th]]

The standard literature on CENs assumes that their functional structure consists of a nominal head *n* which takes a VP as its complement (see Alexiadou

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[1] I will return to this point with more clarifications in Section 2.

2001, Fu, Roeper & Borer 2001, Borsley & Kornfilt 2000, among others). In view of this generalization and those in Kratzer 1994 and Alexiadou et al. 2006 concerning the Voice projection and the licensing of PP external arguments in the verbal domain, an investigation of the way CENs obey these properties is well motivated. In this paper, I address the case of Romanian supine and infinitive CENs with respect to the realization of Voice and the licensing of external arguments. At the same time, I will test the generalization in Grimshaw 1990 concerning the similarity between CENs and passives and I will show that it is not entirely correct. A similar investigation has been done for English, German, and Greek nominalizations in Alexiadou, Anagnostopoulou & Schäfer 2008, and I will often refer to this paper for comparison.

The paper is organized as follows. In Section 2, I present the conditions under which external argument PPs are licensed within the verbal domain in Romanian and I show that the generalizations on English hold for Romanian, too. In Section 3, I address the nominal domain and I discuss the similarities and the contrasts between supine and infinitive CENs and verbal passives with respect to external argument licensing. I will show that external argument PPs are licensed in the supine CENs only under the presence of Voice, so the structure of the supine is always like the one in (6a). Since, depending on the verbal root from which they are derived, infinitive CENs present properties shared both by a structure with Voice and without Voice, I will conclude that they are ambiguous between (6a) and (6b). In Section 4, I discuss Grimshaw's idea that nominalization is similar to passivization and I show that it makes wrong predictions for the two CENs in Romanian.

2. The verbal domain in Romanian

Like in English and German (see Jaeggli 1986, Collins 2005, Alexiadou et al. 2006 a.o.), in Romanian, transitive verbs form passive constructions and the *de* "by"-phrase re-introduces the external argument instantiating all the thematic roles: agent (7a-a'), causer (7b- b'), experiencer (7c-c'), and recipient (7d-d'):

(7) a. *Ion* a distrus cartea.   (Agent)
         John has destroyed book-the
         "John destroyed the book."
     a'. Cartea a fost distrusă *de (către) Ion.*
         book-the has been destroyed by   John
         "The book was destroyed by John."
     b. *Vîntul* a   împrăştiat norii.   (Causer)
         wind-the has dispersed clouds-the
         "The wind dispersed the clouds."
     b'. Norii   au   fost împrăştiati *de (către) vînt.*
         clouds-the have been dispersed   by   wind
         "The clouds were dispersed by the wind."

c.   *Toţi colegii*   îl   dispreţuiesc pe Ion.   (Experiencer)
     all colleagues him despise   PE John
     "All his colleagues despise John."

c'.   Ion este dispreţuit *de (către) toţi colegii.*
      John is   despised by   all colleagues
      "John is despised by all his colleagues."

d.   *Ion* a   primit   pachetul.   (Recipient)
      John has received package-the
      "John received the package."

d'.   Pachetul   a   fost primit   *de (către) Ion.*
      package-the has been received by   John
      "The package was received by John."

In view of Kratzer's 1994 analysis, both the DPs in the active structures in (7a-d) and the PPs in the passive constructions in (7a'-d') are licensed by the same Voice projection. According to Alexiadou et al. 2006, the [+/- agentive] feature on Voice is responsible for the licensing of agents and causers, respectively. If a Voice head is active, the thematic role is realized as a specifier; if it is passive, the thematic role is implicit (see also (4a)).[2] Thus, the data in (7) are all characterized by the decomposition pattern in (6a).

Anticausatives take only causers as external arguments (see (5)). In Romanian, as in English, their external argument appears with a specific preposition *de la* "from", different from the one for agents and causers in passive structures. This preposition also shows up in the Romanian PP equivalent to the English "by itself" (see (8a)), a typical test for anticausatives (Alexiadou et al. 2006). The realization of a causer thematic role with two different prepositions, depending on the structure where it appears (active/passive vs. anticausative), reinforces the generalization in Alexiadou et al. 2006 that the causer preposition in active/passive constructions is licensed by Voice, while the one in anticausatives is licensed by CAUS. The data in (8a-b) are analyzed as instantiations of the decomposition pattern in (6b):

(8) a.   Uşa   s -a   deschis *de la sine/*de către sine.*
          door-the Refl-has opened from itself/by   itself
          "The door opened by itself."

     b.   Uşa   s -a   deschis *de la vînt/*de la Ion.*
          door-the Refl-has opened from wind/from John

     c.   *Uşa   s -a   deschis *de către vînt/de către Ion.*
          door-the Refl-has opened by   wind/by   John
          "The door opened from the wind."

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[2] I assume the same for the structures with experiencer and recipient thematic roles, although I do not go into a discussion of the precise features on Voice that would license them. The important point is that Voice is present.

A side remark is in order here. Note that a variant of (8b) with the preposition *de* is grammatical (9a). However, this preposition is not the same as its homonym *de* with agents whose individuality is emphasized by the possibility to appear in a complex form together with *către* "to(wards)". In my opinion, this preposition is predicative and expresses causation by itself, so it is similar to something like *because of* in English and it does not need licensing. As a confirmation, (9b) shows that it can also appear in other contexts than anticausatives:

(9) a. Uşa   s -a   deschis *de (*către) vînt.*
         door-the Refl-has opened because of wind
         "The door opened because of the wind."
     b. Maria a   fugit *de   frică.*
         Maria has run   because of fear
         "Maria ran away for fear."

I conclude for this section that the Romanian verbal domain resembles the one in English and German, as argued for in Alexiadou et al. 2006. That is, active/passive structures are decomposed as in (6a) and license external arguments via Voice, while anticausatives are decomposed as in (6b) and license the causer external argument via CAUS. In the rest of this paper, I address these properties with respect to Romanian nominalizations, in order to see to what extent they resemble the verbal domain and how much of the VP they embed in their structure.

3.   The nominal domain

The most productive nominalization patterns in Romanian are the infinitive and the supine, which are derived on the basis of the infinitive and the past participle stem, respectively:

(10) a. Infinitive: b. Supine:
         cînta-*re* / conduce-*re*   cînta-*t*   / condu-*s*
         sing –Inf / drive   -Inf   sing –Sup / drive -Sup
         "singing/driving"   "singing/driving"

Although important differences have been noticed between the two nominalizations, especially with respect to their aspectual properties and the way in which they mark plural, the literature agrees that both have an eventive character which has been related to the presence of a VP (of variable size) in their structure. This is what distinguishes them from result nominals which lack a VP (Cornilescu 2001, Soare 2007, Iordăchioaia & Soare 2008 a.o.). I adopt Grimshaw's term "CENs" to avoid ambiguity. Within this setting, the present

concern is to check the structure in (11) on CENs, that is, to see how much of the internal structure of a verb is inherited by the corresponding CEN.

(11) [n [(Voice) [vP …]]]

3.1 Infinitive CENs

Let us start with the infinitive CEN. In Romanian, nominalizations realize their external arguments with the same prepositions that are used in the verbal domain. This makes the comparison between the two domains straightforward. A slight difference concerns the necessarily disambiguated form of the agentive preposition *de* as the complex form *de către*. This is due to the fact that, in the nominal domain in general, a *de*-PP can also act as a modifier (12a), and within eventive nominalizations in particular, it may sometimes appear with the theme argument (12b), although the latter is usually realized with the genitive case (12c):

(12) a. cartiere *de (*către) comunişti*
          quarters of   communists
          "quarters where communists live"
      b. demolarea   *de* cartiere vechi *de *(către) comunişti*   (Agent)
          demolish-Inf-the of quarters old   by   communists
      c. demolarea   cartierelor   vechi *de către comunişti*   (Agent)
          demolish-Inf-the quarters-Gen old   by   communists
          "the demolition of old quarters by the communists"

As can be observed in (13), besides the agent role exemplified in (12b-c), the infinitive CEN can realize external argument PPs instantiating all the other thematic roles that we identified in the verbal domain with passives (7b'-d'): causers, experiencers, and recipients are all grammatical:

(13) a. împrăştierea   norilor   *de către vînt*   (Causer)
          disperse-Inf-the clouds-Gen by   wind
          "the dispersion of the clouds by the wind"
      b. dispreţuirea   maselor   *de către clasa politică*   (Exp)
          despise-Inf-the people-Gen by   class political
          "the contempt of the political class towards the people"
      c. primirea   pachetului *de către Ion*   (Recipient)
          receive-Inf-the package   by   John
          "the receipt of the package by John"

From the data in (12b-c) and (13), infinitive CENs seem to resemble verbal passives, since they display full productivity concerning the external argument PPs. In this case, their internal structure should be the one in (6a), with a Voice projection.

But a closer look at the data indicates that this cannot be the complete answer. Infinitive CENs derived from roots that participate in the causative/anticausative alternation are ambiguous between a transitive reading with an external causer (14a) and an intransitive reading with a spontaneous interpretation (14b). The two readings can be disambiguated by an agent *de către-* or a causer *de la-*PP, respectively, like in the verbal domain ((7a'-b') vs. (8)):[3]

(14) deschiderea uşii
       open-Inf-the door-Gen
       a.   deschiderea uşii   *de către Ion*
             open-Inf-the door-Gen by   John
             "the opening of the door by John"
       b.   deschiderea uşii   *de la vînt*
             open-Inf-the door-Gen from wind
             "the opening of the door from the wind"

In accord with the data in (14b), the infinitive can also be formed from internally caused roots which are similar to anticausatives:

(15) ruginirea   fierului / putrezirea lemnului *de la/*de către umiditate*
       rust-Inf-the iron-Gen / rot-Inf-the wood-Gen from/ by   humidity
       "the rusting of the iron/the rotting of the wood"

Since anticausative structures have been argued in Alexiadou et al. 2006 to lack a Voice projection, the data in (14b, 15) indicate that the infinitive CEN is compatible with the structure in (6b). This idea is also supported by the test in Kratzer 1994 given above in (4), with the referential relation between the agent and the theme. Since the infinitive in (16) allows the theme to be coreferential with the agent, it means that there is no Voice projection hosting an implicit external argument and no Principle C violation occurs:

(16) anunţarea   oaspeţilor
       announce-Inf-the guests-Gen
       "the announcement of the guests"
       a.   Agent = Theme: "the guests announced themselves"
       b.   Agent ≠ Theme: "the guests were announced by somebody else"

In conclusion, the behavior of the Romanian infinitive CENs seems to comply both with the generalization that they have Voice and the one that they lack Voice. This may be judged as an indicator that nominalizations are insensitive to the effects of Voice, so they would inherit only the VP structure

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[3] This ambiguity in the nominal domain appears because nominalizations in Romanian, unlike for instance German nominalized infinitives, do not preserve the reflexive pronoun specific to anticausative verb forms.

below Voice from the root verb. However, in English, German, and Greek, Alexiadou et al. 2008 show that this is not the case. Since supine CENs in Romanian confirm the results in the other three languages, I postpone the generalization concerning the infinitive for Section 3.3.

3.2   Supine CENs

In this section, I investigate the Romanian supine and its behavior with respect to external argument PP licensing, in order to see which of the two patterns in (6) it matches. Like in the case of the infinitive, the supine CEN can license all the thematic role PPs associated with the external argument that we find in the verbal domain in (7):

(17) a.   demolatul   cartierelor   vechi *de către comunişti*   (Agent)
               demolish-Sup-the quarters-Gen old   by   communists
               "the demolition of old quarters by the communists"
        b.   împrăştiatul   norilor   *de către vînt/*de la vînt*   (Causer)
               disperse-Sup-the clouds-Gen by   wind/*from wind
               "the dispersion of the clouds by the wind"
        c.   ?dispreţuitul   maselor   *de către clasa politică*   (Exp)
               despise-Sup-the people-Gen by   class political
               "the contempt of the political class towards the people"
        d.   primitul   pachetelor   *de către secretară*   (Recipient)
               receive-Sup-the packages-Gen by   secretary
               "the receipt of packages by the secretary"

     The degraded acceptability of the example in (17c) with an experiencer PP has to do with the conflict between the aspectual properties of the supine CEN and the unbounded character (see Jackendoff 1991) of the event suggested by the verb *despise*. As argued in Iordăchioaia & Soare 2008, the supine CEN selects bounded events and pluralizes them. For this reason, the supine rejects individual-level predicates (see Kratzer 1995) which are always unbounded, since they cannot be located in space or time. (18) illustrates two such examples:

(18) a.   *cunoscutul*   limbilor   străine
               know-Sup-the languages-Gen foreign
               "the knowledge of foreign languages"
        b.   *descinsul*   omului   din   maimuţă
               descend-Sup-the man-Gen from monkey
               "the descent of the man from the monkey"

Since most subject-experiencer verbs are individual-level predicates, they are expected to disallow the supine form.[4] In accord with this generalization, the example in (17c) is acceptable only with a forced stage-level interpretation of the verb *despise*. This is possible, if we think of several situations in which a certain "political class" despises "the people". As a consequence, experiencer verbs which can be more easily understood as bounded events are considerably better in the supine and the experiencer PP is successfully licensed:[5]

(19) a.   *admiratul*   maşinilor de pe stradă *de către Ion*
            admire-Sup-the cars-Gen from   street by   John
            "John's (habit of) admiring the cars in the street"
      b.   *uitatul*   temelor   acasă *de către Ion*
            forget-Sup-the homeworks home by   John
            "John's (habit of) forgetting his homeworks at home"

Thus, the supine CEN licenses all the external role PPs. But unlike the infinitive CEN and similarly to the verbal passive, the supine disallows causer PPs which are licensed in the absence of Voice. As shown in (8), *de la* is the typical preposition for causers licensed by CAUS. The data in (20) indicate that *de la*-PPs cannot occur within supine CENs, as they cannot appear as realizing the external argument of the passive:

(20) a.   împrăştiatul   norilor   *de către/*de la vînt*
            disperse-Sup-the clouds-Gen by   /from   wind
            "the dispersion of the clouds by the wind"
      b.   Norii   au   fost împrăştiati *de către/*de la vînt*.
            clouds-the have been dispersed   by/from   wind
            "The clouds were dispersed by the wind."

The conclusion to draw from these data is that the supine always realizes a Voice head and thus, only licenses PPs which have to do with Voice, like in the case of the verbal passive. As a confirmation, note that the supine is excluded with internally-caused verbs, because they lack Voice (21). At the same time, the supine requires disjoint reference between the agent and the theme of roots freely undergoing the causative/anticausative alternation. In accord with Kratzer 1994 (see also (4)), the structure in (22) indicates that the supine has a Voice projection hosting an implicit argument whose presence blocks the reflexive reading (22a):

(21) *ruginitul   fierului   / *putrezitul lemnului
      rust-Sup-the iron-Gen / rot-Sup-the wood-Gen

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[4] See also Pylkkänen 2000, who shows that stative subject experiencer verbs in Finnish are individual-level predicates.

[5] For details on the habitual interpretation of the supine (which is apparent in the English translation in (19)) and its source, see Soare 2006 and Iordăchioaia & Soare 2008.

(22) anunțatul   oaspeților
     announce-Sup-the guests-Gen
     a.   #Agent = Theme: "the guests announced themselves"
     b.   Agent ≠ Theme: "the guests were announced by somebody else"

3.3   The Voice within the infinitive CEN

The data in (20) – (22) clearly distinguish the supine from the infinitive with respect to the internal functional structure. The supine has a Voice projection, while for the infinitive the evidence is not conclusive either for the presence or the absence of Voice.

In Section 3.1., after analyzing the behavior of the infinitive with respect to external argument PPs, I formulated the hypothesis that nominalizations might be insensitive to Voice. As shown by Alexiadou et al. 2008, this does not hold at least for the three languages they analyze and, as indicated by my discussion of the supine, it does not hold for Romanian either. Moreover, even for the infinitive CEN, I will show below that there is strong evidence that it can have Voice.

First, the infinitive licenses manner adverbs which are related to Voice: *atent* "carefully" and *intenționat* "intentionally" are naturally allowed in infinitival nominalizations:

(23) a.   distrugerea   documentelor   *atît de atent*
            destroy-Inf-the documents-Gen so   carefully
            "destroying the documents so carefully"
     b.   spargerea   geamului   *intenționat*
            break-Inf-the window-Gen intentionally
            "breaking the window intentionally"

Second, like Greek nominalizations, the infinitive CEN from de-adjectival verbs can license agent PPs. Since there is nothing in the semantics of these roots that could license an agent, the PP in (24) must be structurally licensed by Voice:

(24) golirea   coșului *de către femeia de serviciu*
     empty-Inf-the basket by   woman of duty
     "the emptying of the basket by the cleaning woman"

As a consequence of these facts and of the ones in (12) - (16) above, I propose that the infinitive nominalization of verbs undergoing the causative/anticausative alternation is ambiguous between a structure in which it projects Voice and another one in which it does not project Voice. The source of this ambiguity is actually the ambivalent nature of these verbs. As a confirmation of this ambiguity, note that the adjective *spontan* "spontaneous" gives both a passive and an anticausative reading with alternating verbs (25a), but it has an unambiguous passive reading with causative verbs (25b), and an anticausative

reading with internally caused verbs (25c). The availability of one reading or the other or both in (25) has to do with the decomposition pattern that characterizes the verbal root:

(25) a.   *deschiderea spontană*   a uşii   (passive/anticausative)
            open-Inf-the spontaneous door-Gen
            "the spontaneous opening of the door"
       b.   *distrugerea spontană*   a actelor   (passive/*anticausative)
            destroy-Inf-the spontaneous documents-Gen
            "the spontaneous destruction of the documents"
       c.   *putrezirea spontană*   a frunzelor   (*passive/anticausative)
            rot-Inf-the spontaneour leaves-Gen
            "the spontaneous rotting of the leaves"

In conclusion, the infinitive in (25a) is ambiguous between the structural patterns in (6a) and (6b), with and without Voice, respectively: the one in (25b) projects Voice, so it is decomposed as in (6a), and the infinitive in (25c) receives the internal structure in (6b) without Voice.

The generalization I draw with respect to the infinitive does not come as a surprise, from a crosslinguistic point of view. Alexiadou et al. 2008 bring evidence for a similar analysis in the case of Greek nominalizations which — like the Romanian infinitives — are compatible with all the verbal roots (see (12) - (16)) and exhibit properties specific to Voice equivalent to the ones exemplified in (23) - (24) for Romanian. Moreover, unlike in Romanian, Greek speakers tend to distinguish between the adjectives *sudden* and *spontaneous* to the extent that the latter is exclusively associated with a passive interpretation, and thus with the presence of Voice (26b), while the former is ambiguous, just like *spontan* in Romanian (26a). Thus, the Greek *ksafniko* "sudden" in (27a) allows an anticausative interpretation with an internally caused verb (like the Romanian *spontan* in (25c)), while the Greek *afthormito* "spontaneous" is ungrammatical with the same verb (27b):

(26) a.   to *ksafniko* anigma tis portas   (passive/anticausative)
            the sudden opening the door-Gen
       b.   to *ksafniko*   anigma tis portas   (passive/*anticausative)
            the spontaneous opening the door-Gen

(27) a.   to *ksafniko* sapisma ton filon   (*passive/anticausative)
            the sudden   rotting the leaves-Gen
       b.   *to *afthormito*   sapisma ton filon
            the spontaneous rotting   the leaves-Gen   (*passive/*anticausative)
                                                   (Alexiadou et al. 2008, p. 12)

In this respect, *afthormito* behaves like the Romanian supine in requiring Voice, but since it can appear with a nominalization which does not reject anticausatives (see (27a)), this indicates that nominalizations can be ambiguous between the presence and the absence of a Voice projection in their functional structure. Greek nominalizations and Romanian infinitives are clear instantiations of this case.

4.   Final considerations

Let us briefly return to Grimshaw's generalization according to which the process of nominalization is similar to that of passivization to the extent that both suppress the external argument. This claim actually involves two separated claims: first, that the external argument is suppressed in passive structures and second, that nominalizations should behave similarly to verbal passives with respect to external argument (non-)realization.

The first claim has been argued in Alexiadou et al. 2006 to make wrong crosslinguistic predictions with respect to the relation between active and passive constructions. Since in Greek, passive structures systematically disallow causers which are normally fine in the active, Alexiadou et al. conclude that there cannot be a derivational relation between the passive and the active to the extent that we can speak of a process of passivization which "suppresses" the external argument. They argue that the passive meaning is rather the effect of the interaction between certain portions of structure and the Voice specification.

Concerning the second claim at the basis of Grimshaw's generalization, the data I discussed with respect to Romanian indicate that it cannot be right either. If "nominalization" were a process by which all nominals derived from verbs came to exhibit the same properties with respect to external arguments, we would expect all the CENs to behave similarly. In Romanian, I showed that, although they both accept external argument PPs, the infinitive and the supine CEN behave differently with respect to the way they license these PPs. This leads to the conclusion that the latter always has Voice, while the former realizes Voice depending on the properties of the root. In a way, the supine in Romanian is a nominalization that resembles the verbal passive, but this confirms Grimshaw's claim only to the extent that the supine and the passive are similar in the sense that they both project Voice and meet Kratzer's 1994 predictions with respect to this projection and the way it interacts with the rest of the functional structure.

5.   Conclusion

In this paper, I investigated the properties of Romanian nominalizations with respect to Voice realization and external argument PP licensing. In particular, I argued that the supine must be analyzed as consistently hosting Voice, a property which results in incompatibility with external arguments that are licensed in the absence of Voice and with verbal roots that lack Voice. In the case of the infinitive, although the possibility to project Voice is unquestionable, I showed

that a structure without Voice is also available, since the infinitive felicitously combines with roots that do not project Voice and allows causer PPs which are licensed by CAUS. Alexiadou et al. 2008 distinguished crosslinguistically between three possibilities of external argument PP licensing. English nominalizations were shown to lack Voice, so the external role of actor is assigned by the preposition itself. German nominalized infinitives were argued to project Voice, while Greek nominalizations were analyzed as ambiguous. Within this picture, the Romanian supine and infinitive CENs instantiate the latter two patterns, respectively (cf. Alexiadou et al. 2008).

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Gianina Iordăchioaia
Department of English Linguistics
University of Stuttgart
Heilbronner Str. 7
70174 Stuttgart

gianina@ifla.uni-stuttgart.de

On the Structure of the Scandinavian DP[*]

Susanne Lohrmann

University of Stuttgart

Adjectives in definite Scandinavian DPs trigger an additional lexical determiner ('*double definiteness*'). In a number of cases, one of the determiners is obsolete, and in some of these cases, different readings are obtained. The following questions arise: what is the function of this doubling pattern of determiners? Is there a semantic correlate? And what does this tell us about the structure of the DP? The presence or absence of weak adjectival inflection can also yield different readings, i.e. inflection interacts with interpretation. In the following I will show that multiple exponence in Scandinavian DPs contributes to interpretation. Furthermore I suggest that the notion of definiteness in Scandinavian DPs is made up of three aspects: *discourse reference*, *specific reference*, and *identity*. These aspects are expressed by three distinct morphemes: the preadjectival article, the suffixed article, and the adjectival inflection respectively.

1. Background

1.1 Double Definiteness

(1)　a.　film-en
　　　　　film-DEF
　　　　　'the film'
　　　b.　den rolig-a　film-en
　　　　　DEF funny-W film-DEF
　　　　　'the funny film'　　　　　　　　　　　　　　　　　　　　(Swedish)

In the noun phrase in (1a), the definite article is attached to the noun. When a definite noun phrase is modified by an adjective (1b), a second determiner is introduced preceding the adjective.

　　　Double definiteness is not restricted to the Scandinavian languages. It is also found, for example, in Greek (*'Determiner Spreading'*), where it is optional and restricted with respect to the type of adjectives it occurs with (2), and in post-nominal French superlative constructions (3).

(2)　to　vivlio *(to) kokino
　　　DEF book　DEF　red　　　　　　　　　　　　　　　　　　(Alexiadou 2006)

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(3) la maison la   plus belle
     DEF house   DEF most beautiful   (Kayne 2004)

As opposed to Greek and French, double definiteness in Scandinavian is obligatory.

2.   Basic Data

2.1   Swedish, Norwegian, and Faroese

Standard Swedish, Norwegian and Faroese very much pattern alike with regard to double definiteness.

(4) a.   bil-en
            car-DEF
            'the car'
     b.   den ny-a   bil-en
            DEF new-w car-DEF
            'the new car'   (Swedish)

In non-modified DPs, the definite article is attached to the noun (4a). A second article appears when an attributive adjective modifies the DP (4b). The adjective is marked with the so-called weak inflection. This type of double definiteness is the default structure, irrespective of the type of adjective. The preadjectival article is triggered only once, further adjectives do not trigger additional determiners.

2.2   Danish and Icelandic

(5) a.   hus-et
            house-DEF   (Danish)
     b.   hús-ið
            house-DEF   (Icelandic)
            'the house'

(6) a.   det store hus
            DEF big-w house   (Danish)
     b.   gamla hús-ið
            old-w house-DEF   (Icelandic)
            'the old house'

Neither Danish nor Icelandic show structures involving double definiteness. The article in non-modified definite DPs is attached to the noun (5) – as in the other Scandinavian languages. With respect to adjectival modification, the

languages differ: in Danish (6a), a separate article is introduced preceding the noun and the suffixed article is omitted. In Icelandic, the suffixed article is retained and no further article is introduced (6b), i.e. in both languages, the suffixed and the preadjectival article occur in complementary distribution.

3. Optionality or Elimination of One of the Articles

In order to gain a better understanding of the function of the respective article, those cases are of interest in which either the preadjectival article or the suffixed article is optional or even obsolete. If double definiteness is not a mere agreement phenomenon but is of interpretive value, then a difference in meaning is predicted for DPs that do not exhibit the default structure. This prediction is borne out, as the following sections show.

3.1 The Suffixed Article

(7) a. Han er en lærer   av den   gaml-e skole(-n).
         he is a teacher of DEF.SG old-w school-DEF
         'He is a teacher of the old school.'
     b. Vi så   på den   gaml-e skole*(-n)
         we saw at DEF.SG old-w school-DEF
         'We looked at the old school.'   (Norwegian, Julien 2005)

If the suffixed article is omitted (optional in Norwegian, obligatory in Swedish), the result is an abstract reading (7a). Here, reference is not made to a particular school but to a teacher who is one of the old school, for example in his way of teaching. However, if the intention is to refer to a particular building, i.e. if a concrete reading is intended, then the suffixed article is obligatory (7b). A similar contrast is shown in (8):

(8) a. Dei oppfører seg som dei   verst-e bøll-ar
         they behave 3REFL as DEF.PL worst-w brute-PL
     b. Dei oppfører seg som dei   verst-e bøll-a-ne
         they behave 3REFL as DEF.PL worst-w brute-PL-DEF
         'They behave like the worst brutes'   (Norwegian, Julien 2005)

In the example without the suffixed article (8a), the reading is non-referential, that is, the speaker does not know who those people are. In (8b), on the other hand, where the suffixed article is present, the speaker refers to specific people and a referential reading is obtained.

3.2 The Preadjectival Article

(9) a.   Du kan ta den   ny-e   bil-en.
          you can take DEF.SG new-W car-DEF.M.SG
  b.   Du kan ta   ny-e   bil-en.
          you can take new-W car-DEF.M.SG
          'You can take the new car.'   (Norwegian, Julien 2005)

Julien (2005) notes that even if the referent of the DP in (9a) has not been mentioned before, it is clear that there must be "a new car in the universe of discourse" (Julien 2005:33). By contrast, the structure without the preadjectival article (9b) is used if the referent is very familiar, that is to say, if the people involved in the discourse already know about the new car. The co-ordination of two DPs also suggests that the preadjectival article is of interpretive value.

(10) a.   den talentfulle akademiker-n og den dyktige   administrator-n
          DEF talented   academic-DEF and DEF accomplished administrator-DEF
          'the talented academic and the accomplished administrator'
  b.   den talentfulle akademiker-n og dyktige   administrator-n
          DEF talented   academic-DEF and accomplished administrator-DEF
          'the talented academic and accomplished administrator'
                       (Norwegian, Anderssen 2006)

In (10a) each co-ordinate has a preadjectival article, in (10b) only the first one. (10a) is ambiguous with respect to the number of people – one or two –, while (10b) is unambiguous, only one person is referred to.

4.   Adjectival Inflection

In Standard Scandinavian, adjectives are inflected. Attributive adjectives show weak (W) or strong (S) inflection, the form of which is determined by semantic aspects: the weak form is chosen if the modified DP is definite, the strong form if the DP is indefinite.

(11) a.   den grön-a   bil-en
          DEF green-W car-DEF
          'the green car'
  b.   en grön-ø bil
          a   green-S car
          'a green car'   (Swedish)

4.1   Variation

The above example shows the basic rule for adjectival inflection. However, if dialectal variation is taken into account, the phenomenon becomes much more complex. In some dialects, for instance, adjectival inflection is redundant, if the attributive adjective is incorporated (12). Incorporation is usually optional and when it is not chosen, the adjectival ending is present[1].

(12) a.   sist-gång-a
             last-time-DEF
       b.   sist-e gång-a
             last-w time-DEF
             'the last time'   (Northern Swedish, Delsing 1993:122)

Further deviations from adjectival inflection in Standard Scandinavian (Vangsnes 2007):

i)   Southwestnorwegian dialects show a richer inflectional paradigm
ii)   Dialects without overt marking in the plural
iii)   Dialects without any weak-strong distinction
iv)   In Icelandic, strong adjectival inflection can be combined with definite contexts to achieve non-restrictive readings.

This variation in the realization of adjectival inflection leads to questions regarding the meaning and function of adjectival inflection, even more so if it is considered that adjectival inflection can interact with meaning. For instance, see iv) above for a difference between restrictive and non-restrictive reading and (13) for a difference in presupposition.

(13) a.   Legg hvert unmodent eple   i denne kassen.
             put   every unripe-S apple in this   box-DEF
             'Put every unripe apple in this box'
       b.   Legg hvert unmodne eple   i denne kassen.
             put   every unripe-W apple in this   box-DEF
             'Put each unripe apple in this box'   (Norwegian, Vangsnes 2007)

The pronoun *hvert* 'each, every' is compatible with weak or strong adjectival inflection. If the weak ending is chosen (13b), a presuppositional reading is obtained, i.e. there is at least one unripe apple. (13a) on the other hand, is not presuppositional.

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[1] Note that these dialects nevertheless do not make use of double definiteness, i.e. adjectives do not trigger an additional determiner.

5. The Semantics of the Articles and the Adjectival Inflection

5.1 The Suffixed Article

Julien (2005) suggests that the semantic content of the suffixed article is *specificity*: the suffixed article can be omitted, if a non-specific reading is intended and a specific reading is only possible, if the suffixed article is spelled out. I agree with Julien in large parts but consider the term *specificity* somewhat problematic[2] and suggest extending the term to *specific reference*. Thus including that the denotation of N+DEF yields a referential reading and that it is identifiable and locatable for the hearer.

(14)   THE SUFFIXED ARTICLE brings about *specific reference*.

Example (8), repeated here as (15), illustrates this point: in the example without the suffixed article (15a), the reading is non-referential, whereas in (15b), the speaker refers to particular people and a referential reading is obtained.

(15)   a.   Dei oppfører seg   som dei   verst-e bøll-ar
              they behave 3REFL as   DEF.PL worst-W brute-PL
         b.   Dei oppfører seg   som dei   verst-e bøll-a-ne
              they behave 3REFL as   DEF.PL worst-W brute-PL-DEF
              'They behave like the worst brutes'   (Norwegian, Julien 2005)

This observation is supported by restrictive relative clauses. Here, too, the suffixed article is redundant.

(16)   De turist-er   som åkte   till Island fick mycket sol.
         DEM tourst-PL who drove to Island got a lot of sun.
         'The tourists who went to Iceland got a lot of sun.'

(17)   De turist-er-na   fick mycket sol.
         DEM tourist-PL-DEF got a lot of sun.
         'The tourists got a lot of sun.'   (Swedish, Holmes & Hinchliffe 2003:146)

In example (16), the suffixed article is omitted and the independent item *de* is introduced preceding the noun. This independent morpheme is commonly called *determinative pronoun* (Holmes & Hinchliffe 2003:146). Since the determinative is always stressed unless it is followed by an adjective I assume that it functions like a demonstrative and that in the case of adjectival modification the preadjectival article is triggered rather than the determinative kept. As opposed to the default use of demonstratives (17), the relative structure in (16) does not

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[2] Indefinite DPs can also be specific ('I've bought a book').

require the definite article. Since restrictive relative clauses limit and specify the denotation of N and always yield concrete readings (cf. 3.1), the suffixed article is superfluous.

5.2   The Preadjectival Article

The share the preadjectival article has in the notion of definiteness is commonly called *inclusiveness* (cf. Hawkins 1978, Lyons 1999, Julien 2005). This term was introduced by Hawkins (1978) to express *uniqueness* of plurality, that is, to include mass and plural nouns because uniqueness implies singularity. Inclusiveness assimilates uniqueness and is meant to express reference "to the totality of the entities that satisfy the description" (Lyons 1999:11). As the examples in section 3.2 show, this definition does not cover the function of the preadjectival article, thus I suggest replacing it by (18).

(18)   THE PREADJECTIVAL ARTICLE introduces a *discourse referent* that contains a new *discourse variable*.

In other words, what the preadjectival article does is signal that a new modified definite N is entering the discourse. Thus the preadjectival article does contribute to the interpretation of a DP as definite – even if very little[3]. Example (10), repeated as (19), shows that the preadjectival article introduces a new discourse variable.

(19) a.   den talentfulle akademiker-n og   den dyktige   administrator-n
               DEF talented   academic-DEF and DEF accomplished administrator-DEF
               'the talented academic and the accomplished administrator'
        b.   den talentfulle akademiker-n og   dyktige   administrator-n
               DEF talented   academic-DEF and accomplished administrator-DEF
               'the talented academic and accomplished administrator'
                                                                    (Norwegian, Anderssen 2006)

(19a) can be understood as referring to two people – this is the favoured reading – or it can refer to only one person, whereas (19b) unambiguously refers to one person only. This suggests that the preadjectival article introduces a new, modified *discourse variable*[4]. If (19a) is understood as referring to one person, the context makes clear that the *specific reference* of N denotes the same entity. Example (9), repeated as (20), supports this view: since the new car in (20b) is a

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[3] Could this be the reason why, for example, Icelandic lost double definiteness? Furthermore, could this also explain why the preadjectival article was introduced in the first place, as a kind of emphasising factor (a kind of *cycle of definiteness* comparable to Jespersen's *cycle of negation*?)

[4] Note that there is no change in the role of the suffixed article – its function is independent of the presence of the preadjectival article.

familiar entity for those involved in the discourse (cf. section 3.2), there is no need to introduce it as a new discourse variable.

(20) a.   Du kan ta den   ny-e   bil-en.
            you can take DEF.SG new-w car-DEF.M.SG
      b.   Du kan ta ny-e   bil-en.
            you can take new-w car-DEF.M.SG
            'You can take the new car.'   (Norwegian, Julien 2005)

5.3   The Adjectival Inflection

The two sentences in (21) are identical apart from the adjectival inflection. (21a) shows the strong ending, (21b) the weak one, however, the meaning differs: (21a) is not presuppositional so that it is not clear whether there are any unripe apples at all, whereas in (21b) the reading is presuppositional, i.e. there is at least one unripe apple. The presuppositional reading is rendered by the weak adjectival ending. This suggests that the weak adjectival inflection identifies the relevant members in the A+N denotation.

(21) a.   Legg hvert unmodent eple i denne kassen.
            put   every unripe-s apple in this   box-DEF
            'Put every unripe apple in this box'
      b.   Legg hvert umodne eple i denne kassen.
            put   every unripe-w apple in this   box-DEF
            'Put each unripe apple in this box'   (Norwegian, Vangsnes 2007)

If it is correct that the weak adjectival ending states the existence of the A+N denotation, then we should not find this ending if the existence of the modified noun is stated otherwise. The adjective *egen* might be such a case.

(22) a.   den egn-a torv-an
            DEF own-w garden-DEF
            'one's own garden'
      b.   hans egen-ø hemlighet
            his   own-s secret
            'his (own) secret'
      c.   hans egn-a   uppträdande
            his   peculiar-w behaviour
            'his peculiar behaviour'   (Swedish, Holmes & Hinchliffe 2003)

(22a) displays the default structure: double definiteness plus weak adjectival inflection. In (22b), *egen* follows a possessive and shows strong inflection, although the context is definite. If, on the other hand, *egen* is used after the possessive but carries the weak adjectival ending (22c), the meaning changes.

Two possible explanations[5]: *egen* in (22b) functions as a kind of reflexive and in fact is not inflected at all. If this is correct, the question arises why there is a difference in meaning between (22a) and (22c). Or else *egen* in (22b) does carry strong inflection, but then the question arises why. A possible account could be that the combination of possessive plus *egen* presupposes the existence of the A+N denotation. This would support the following hypothesis.

(23)   THE WEAK ADJECTIVAL INFLECTION seems to identify the member(s) in the A+N denotation.

If this is the case, the question arises why the weak adjectival ending occurs in structures such as *Vita huset* 'The White House'? The preadjectival article is omitted, the weak adjectival ending and the suffixed article are present. Constructions like *Vita huset* function like compound nouns of the blackbird-type in English, as the change in stress from *vita* to *huset* indicates.

(24)   det VITA huset   the white HOUSE   (the house is white)
                                          the black BIRD   (the bird is black)
          Vita HUSET   the WHITE House   (the White House)
                                          the BLACKbird   (a particular kind of bird)

This suggests that structures of the *Vita huset*-kind can be viewed as proper nouns. Following the analysis above, there actually is no reason for the adjectival inflection to be present. However, proper nouns do not normally take the suffixed article either (**Alexander-n*, '*the Alexander'), but the suffixed article is present in structures of the *Vita huset*-kind. Thus I assume that – opposed to the structures discussed above – neither the adjectival ending nor the suffixed article are of semantic import in this case but that structures of the *Vita huset*-kind form complex proper nouns.

6.   Towards an Analysis

6.1   Theoretical Framework

Adjectival inflection in Scandinavian comprises five different endings (two weak endings, three strong ones). Depending on the context (almost) every adjective can occur with either the weak or the strong ending. If it is assumed that the ending has a particular function, and if it is further assumed that lexical items are not 'stored' as complex heads[6], the most economical strategy would be to regard both the ending and the stem as independent items that are inserted depending on

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[5] This conclusion probably requires further qualification. I will address this issue in future research.

[6] This would be very uneconomical: for every adjective, three forms would have to be accessible: SING strong, SING weak, PLU strong/weak

their morphosyntactic features. This is why I adopt the framework of Distributed Morphology[7] (DM). There have been attempts to account for the structure of Scandinavian DPs in the framework of Distributed Morphology. A relatively recent account is the one by Embick & Noyer (2001).

6.2 Embick & Noyer's (2001) Analysis of Scandinavian DPs

Embick & Noyer (2001) claim that DPs in Swedish "always" (E&N 2001:581) show marking for definiteness, and therefore two requirements have to be met to get well-formed results.

(25) a. The head N must be marked with definiteness when D is [def].
    b. $D_{[def]}$ must have a host.   (Embick & Noyer 2001:581)

Both requirements are imposed at PF, i.e. in Morphology. For non-modified DPs Embick & Noyer assume that N moves to D in syntax and thus meets both requirements: N is marked [def] and N is the host of $D_{[def]}$. If an adjective intervenes, N cannot move to D and further PF processes must apply to meet the requirements in (25): a *dissociated morpheme* is assigned to N. Dissociated morphemes are purely morphological material, they are not syntactic projections and they are not interpreted at LF. "Because of the existence of requirement [25a.] in Swedish morphology, we find the doubling of a head that is relevant to LF interpretation; but there is no doubling at the syntacticosemantic level, because the feature [def] is only copied in PF" (E&N 2001:583). In other words: the [def] feature is copied in PF and is not interpreted at LF. The feature that is interpreted at LF is the [def] feature on D.

(26)

(Embick & Noyer 2001:583)
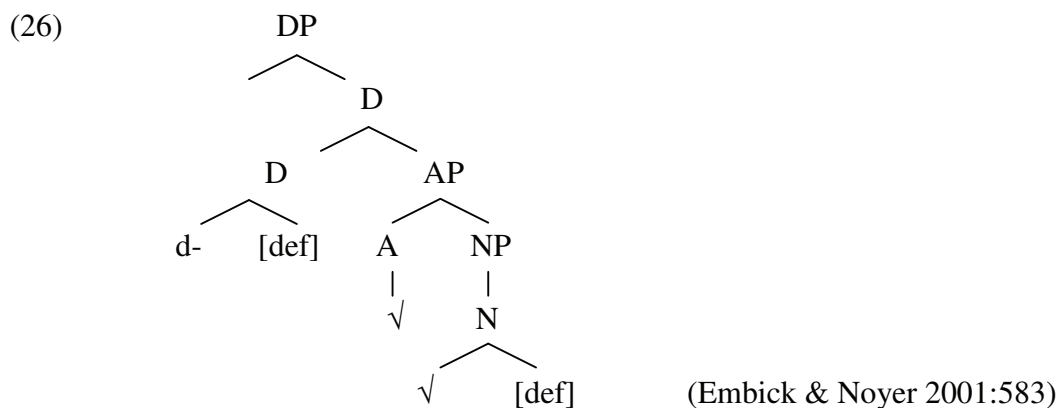
Since Swedish morphology requires a host for [def] on D, dummy *d-* is inserted. With respect to variation Embick & Noyer (2001) argue that the

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[7] "The jobs assigned to the Lexicon component in earlier theories are *distributed* through various other components." (Harley & Noyer 1999:3)

differences between the Scandinavian languages do not lie in syntax but in the requirements for well-formedness at the level of PF: Danish, for instance, does not require the type of agreement that results in the doubling of [def] in Swedish, hence there is no double definiteness in Danish.

There are several problems with this analysis. First of all, Embick & Noyer's claim that the head N must be marked for definiteness. As shown in 3.1, this is not the case. Besides, the omission of the suffixed article cannot be seen as an exception but rather follows regular patterns: if no specific reference is intended, the suffixed article is not obligatory.

In Embick & Noyer's (2001) account, the [def]-feature is copied and assigned to N because the noun cannot raise to D if an adjective intervenes. The question arises what it is that prevents the [def] feature from being copied in a modified definite DP in those cases where the suffixed article is not present. Especially since this feature is not interpreted at LF. According to Embick & Noyer (2001), the examples in section 5.1 should be ungrammatical: if there are two [def]-features in PF but only one at LF, wrong results are predicted since it does not seem to matter whether a phrase consists of two realizations of the [def]-feature or of one. This also implies that the content of the preadjectival article and the suffixed article is identical. Example (8), repeated here as (27), clearly shows that this is not the case, not only are both sentences grammatical, they also differ in meaning.

(27) a.   Dei oppfører seg som dei verst-e bøll-ar
           they behave 3REFL as   DEF worst-w brute-PL
     b.   Dei oppfører seg som dei verst-e bøll-a-ne
           they behave 3REFL as   DEF worst-w brute-PL-DEF
           'They behave like the worst brutes'   (Norwegian, Julien 2005)

A further problematic point in their analysis is the part in which Embick & Noyer follow Santelmann's (1993) idea of *den*-support. Santelmann assumes that *den* supports the [def] feature in D as *do* does with the features of INFL. Santelmann argues that noun traces cannot license adjectival agreement, so N has to remain in situ and *den* is inserted to support the features in D. Since adjectives agree, too, if the preadjectival article is not present, the question arises how this could work. But I do not want to go into the details of Santelmann's analysis, the interesting point here is that Embick & Noyer (2001) in parts follow Santelmann's idea although her analysis is motivated by the notion of traces (which in DM are only of explanatory value) and then split the preadjectival article in *d-* plus suffixed article.

Where does this *d-* come from? Diachronic facts question Embick & Noyer's analysis. As is assumed in the literature (cf. e.g. Prokosch 1939), the suffixed article and the preadjectival article developed out of the demonstrative.

The demonstrative and the preadjectival article are identical in form, however, their content is different. Embick & Noyer's claim amounts to the fact that only one article developed from the demonstrative, namely the suffixed one. The question that arises is the following: when double definiteness was introduced into some of the Scandinavian languages, would it not have been easier to resort to an independent element that is already in the language instead of taking the suffixed article, which then had to be supported by *d-*? Old Norse texts show structures of the type N DEF (cf. e.g. Noreen 1904), where DEF has the form of the demonstrative but is not suffixed then. When it was finally suffixed the word-initial dental got lost. This means the suffixed article lost the preceding dental in the process of affixation, the form of the definite article before was that of the demonstrative, i.e. the development is from *den* to *–en* and not from *–en* to *den*. Thus, the introduction of *d-* as a host for *–en* seems very unlikely.
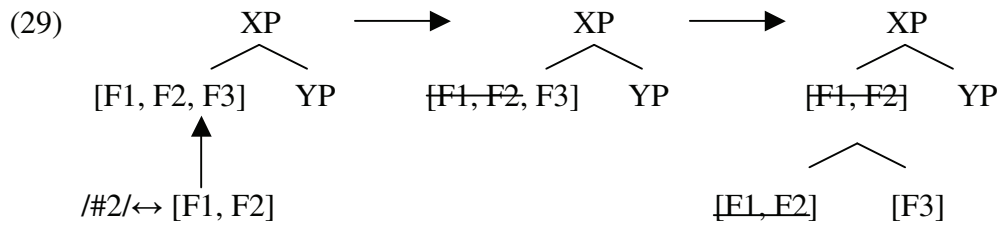
A last point of critique: Embick & Noyer (2001) do not account for the differences in meaning that arise depending on the use of the weak or strong form of adjectival inflection. This, however, is a point that should not be neglected in an analysis of Scandinavian noun phrases since adjectival inflection clearly is of semantic import. Adjectival inflection interacts with definiteness and carries one of the three components of definiteness in Scandinavian DPs. The question that arises at this point is how this interaction could be accounted for structurally.

6.3   Is there a Morphological Explanation?

Embick & Noyer's (2001) account is basically a morphological one. For the above reasons, their analysis is not entirely unproblematic and the question arises whether other tools of DM-Morphology could solve the problem.

Since definiteness in Scandinavian DPs comprises three features ([disc], [ident], and [sref]) it seems not unplausible to see them in one functional head. There is an operation in DM that allows a single syntactic node to be realized in more than one morphological position, *Fission*: a Vocabulary Item that is competing for insertion into a syntactic node (28a) may be underspecified, that means that the features of the Vocabulary Item (28b) are a subset of the features on the syntactic node. If the most highly specified Vocabulary Item contains only a subset of the features on the terminal node, not all of the node's features are satisfied by Vocabulary Insertion. The remaining features form a subsidiary morpheme and thus yield an additional morphological position.

(28) a.   XP   b.   /#1/   ↔ [F1]
                   ╱╲   /#2/   ↔ [F1, F2]
          [F1, F2, F3]   YP   …

(29)

XP ⟶ XP ⟶ XP

[F1, F2, F3]   YP   ~~[F1, F2~~, F3]   YP   ~~[F1, F2]~~   YP

/#2/↔ [F1, F2]   ~~[F1, F2]~~   [F3]
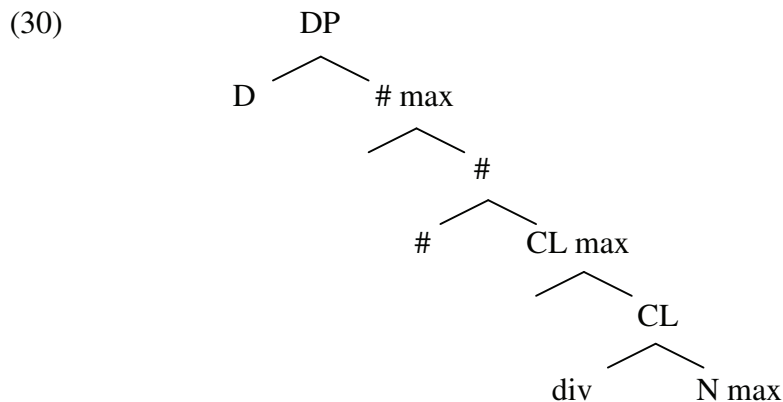
However, Fission is a morphological tool that is applied within words, but in the case of Scandinavian DPs, the relevant features are distributed over three distinct Vocabulary Items. An additional problem a Fission account would face is the fact that the Morphemes inserted into the additional morphological positions would have to be lowered[8] and it is far from clear how the lowered nodes would reach their respective destination. *Lowering* may be non-local, but it involves adjunction of a head to the head of its complement, i.e. the two fissioned nodes would head for the same host. A further postsyntactic variety of movement, *Local Dislocation*, cannot solve the problem either. Local Dislocation "is sensitive to relations of adjacency and precedence between constituents […] Local Dislocation must always be *local*" (Embick & Noyer 2001:564). Thus we can conclude that the postsyntactic tools of Distributed Morphology cannot account for the patterns found in Scandinavian DPs – a possible solution seems to lie in syntax proper rather than in Morphology.

6.4   The Structure of Scandinavian DPs

The analysis I put forth is based on the following assumptions.

i) Borer's (2005) DP structure (30) includes a classifier phrase, which has a dividing function, and a number phrase #P, which is the quantity phrase. The absence of CLP gives rise to mass interpretation. If no quantity interpretation is intended, #P is absent. The existence of CLP is a precondition for #P, whereas the existence of #P is not a precondition for CLP, i.e. nouns can be devided but not count (bare plurals). I adopt Borer's view that nouns are inherently mass nouns. Thus, both singular and plural nouns need to be individuated, irrespective of their being modified or not. If N is not to be interpreted as a mass noun, some kind of operation has to take place.

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[8] *Lowering* is a kind of merger in Morphology.

(30)

```
                          DP
                        /    \
                       D      # max
                              /   \
                                   #
                                 /   \
                                #     CL max
                                      /   \
                                           CL
                                          /   \
                                       div     N max
```

ii) There has been some debate whether prenominal adjectives should be analysed as heads ('*adjective-as-head analysis*'[9]), however, since adjectives in Scandinavian can take complements and phrasal APs can appear prenominal (31), I assume that prenominal adjectives in Scandinavian are APs, generated in the complement position of N.

(31) a.   alla i stadsmiljö boende medborgare
            all in downtown living   citizens
            'all citizens living downtown'
     b.   en för rockkonserter olämpig   lokal
            a for rock concerts unsuitable venue
            'an unsuitable venue for a rock concert'

                                    (Swedish, Holmes & Hinchliffe 2003:456)

The idea that APs originate as complements of N is motivated by Condoravdi's (1989) analysis of middles applied to DPs (Larson 1998): the postverbal AP constitutes the nuclear scope of event modification, that is, the relative proximity of the AP to N is relevant for the interpretation.

iii) In plural formation, Swedish nouns are divided into essentially five declensions. For the following reasons, I assume that the *form* of the declensional affix does not carry any semantic content apart from plural information: i) There is no clear-cut distinction with respect to the allocation of nouns to declension classes; this mainly seems to be determined by phonological aspects (Holmes & Hinchliffe 2003:24ff). ii) Some nouns have alternative plural endings and can be used with either of the declensional affixes, for example *en katt*, *katt-er/-or* 'cat, cats', *en kollega*, *kolleg-er/-or* 'a colleague, colleagues' (Holmes & Hinchliffe 2003:13). iii) The pronunciation often does not clearly indicate which declension is used. For instance, even though one of the endings is spelled *–or*, it is frequently pronounced as if it were spelled *–er* , hence there is often no distinction

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[9] For an overview see Alexiadou et.al. (2007)

that can be made out in spoken Swedish between the two declension classes *–or* and *–er* (Holmes & Hinchliffe 2003). iv) According to some grammars (e.g. Holmes & Hinchliffe 2003), there is a separate declension class for loans that retained their foreign character. As soon as the loan becomes familiar, an indigenous plural may be used instead, chosen according to the phonological conditions of the loan (*reporters* > *reportrar*, Holmes & Hinchliffe 2003:23). For the structure of the DP this suggests that the declensional affix is neither a kind of thematic element nor of any other import than being a plural marker.

The full syntactic structure I thus assume for Scandinavian DPs is the following.[10]

(32) de tre ny-a bil-ar-na
      DEF three new-w car-PL-DEF
      'the three new cars'

(33)
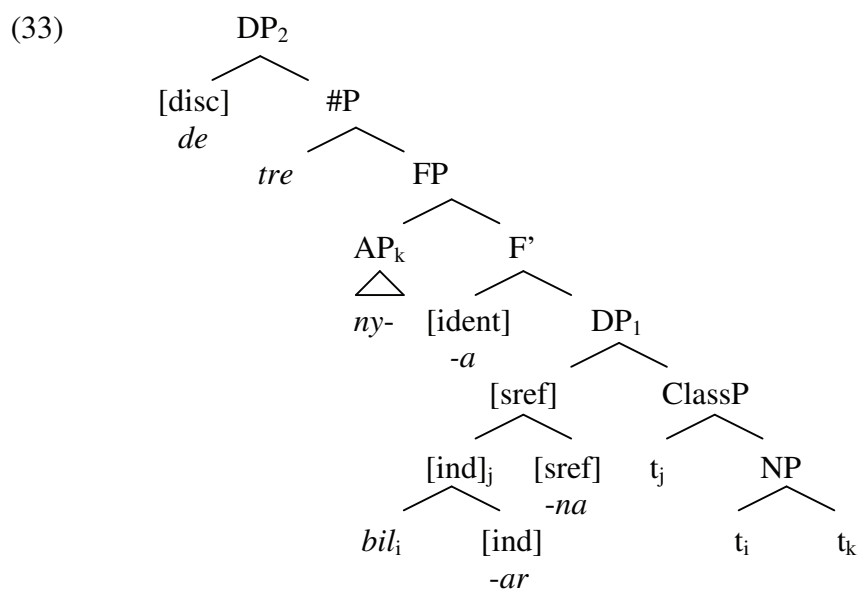
The features [sref], [ident], and [disc] each head their own phrase, DP$_1$, FP, and DP$_2$ respectively. The syntactic structure in (33) contains a classifier phrase, ClassP, because the feature [ind], *individuation*, functions as a classifier that individuates mass nouns. In case of plural marking, the declensional affix is inserted here, in singular DPs ø is inserted. The Vocabulary Item *bil* enters the derivation as a mass noun and is individuated by its movement to the head of ClassP, which adds a 'kind/type-reading'. Mass nouns that are to be interpreted as mass nouns remain in situ. Bare plurals move to the head of ClassP, too, as do

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[10] Traces *t* and Vocabulary Items have only been inserted for explanatory reasons.

mass nouns that carry plural inflection and/or are combined with numerals, as the following examples show.

(34) a.   tre mjölk / öl
     b.   *tre mjölk-PL / öl-PL
          three milk / beer

(35) a.   fyra limonad
     b.   fyra limonad-er
          four lemonade(-PL)   (Swedish, Holmes & Hinchliffe 2003)

Although all of the nouns in (34) and (35) are mass nouns, they are understood as being quantified. Some of these nouns can even take a plural article (35b). Example (34) is ambiguous and can be understood as three glasses/packages or three brands of beer/milk, whereas the examples in (35) are unambiguous: the first clearly denotes four glasses of lemonade, the latter four different types (brands) of lemonade.[11] Nevertheless, in all of those cases, I assume that the noun adjoins to the head of ClassP, because in all of the above examples a 'kind/type'-reading is achieved. The head of ClassP then moves further and adjoins to [sref] under D_1. As soon as FP has been merged, the AP moves from its complement position to the specifier of FP, thus yielding the correct order of the Morphemes.

7.   Conclusion

In this paper I have argued that the notion of definiteness in Scandinavian DPs is made up of three particular components, which are expressed by three distinct morphemes: *discourse reference* [disc], *identity* [ident], and *specific reference* [sref]. The suffixed article brings about specific reference and is merged under D_1, the adjectival inflection identifies the member(s) in the A+N denotation and is merged in FP to identify the [ident] feature, and the preadjectival article introduces a new, modified discourse variant and matches the [disc] feature under D_2. Following head movement and XP-movement operations then provide the correct word order.

As shown for Greek (Alexiadou 2006) and Romanian (Alexiadou & Marchis 2007), in Scandinavian, too, double marking inside the DP is not a mere agreement phenomenon but is clearly of interpretive value. The ways of

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[11] The fact that some quantified mass nouns can take plural inflection whereas others cannot may be due to phonological reasons. The noun *limonad* 'lemonade' as a polysyllabic noun ending in a stressed syllable can clearly be allocated in the third declension, which uses –er to form the plural, whereas *mjölk* and *öl*, monosyllables ending in consonants, could belong to several declension classes (one of which is even the sixth declension, the zero plural).

realization and the semantics may differ in the respective languages, i.e. the notion of definiteness is not encoded in the same way, the double marking inside DPs, however, interacts with interpretation, as does the adjectival inflection in Scandinavian, which interacts with interpretation, too.

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Susanne Lohrmann
Department of Linguistics/Anglistic
University of Stuttgart
Heilbronner Str. 7
70174 Stuttgart

susanne@ifla.uni-stuttgart.de

The internal structure of the –or nominalization in Romanian [*]

Mihaela Marchis

University of Stuttgart

In this paper I argue that the –or affix embeds different morpho-syntactical contexts, triggering distinct semantic effects: the (+ event) nominalization vs. (- event) derivation. I illustrate that both (+ event) and (- event) nouns have a vP, basing my claim on the two arguments (see Alexiadou & Schäfer (2007)): the morphology of –or nouns and adjectival modification. However, vP is bound by different operators: episodic vs. dispositional. According to Alexiadou & Schäfer (2007) event nominals are episodic while non-event nominals are dispositional. I propose that these aspectual specifications are triggered by the participial stem -t present in –or formation. Following the classification of Alexiadou & Anagnostopoulou (2004, 2008), the structure of resultant participles is involved in the –or nominalization while –or derivation is built on the base of target participles. Like resultant participles (+event) nouns contain not only a vP but also the functional projections such as vP, AsP and VoiceP. (- event) derivates like target participles lack argument structure and therefore also VoiceP. To conclude, (+event) nominals involve nominalization since –or affix is base-generated as the Agent in the Specifier of VoiceP while the -or affix involved in derivation is base-generated in the head position where the verb moves up and cliticizes.

1.   Certain generalizations concerning the –or nominalization

In this paper I address the question of the theory of Events in the –or nominalization in Romanian, arguing that various Event properties are located in different nodes inside the nominalization with the "affix" –or.

In line with Abney (1987), van Hout & Roeper (1998), Alexiadou (2001) among others, affixes attach at different levels of structures, e.g. vP, AspectP, VoiceP. vP is the position of the event variable, giving the event entailment of the derivate, AspectP introduces unboundedness, while VoiceP stands for the voice features and for the syntactic position of the Agent in its Specifier Position (see Kratzer's (1996)). As the –or nominalization in Romanian involves both nouns and adjectives, I consider that –or derivates involve different layers of verbal projections.

First in the context of the –or nominalization, like in English, the two major sub-classes of –or nominals (+ event) vs. (- event) are present also in Romanian. The (+event) –or nominals are always agentive (see Keyser & Roeper (1984), van Hout & Roeper 1998, Alexiadou & Schäfer (2007) for the major classes of –er nominals):

(+ eventive)
(1) a. el este un furnizor al politiei.
          he is a supplier a-G police-G.
     b. el este un posesor al cardului Visa
          He is a holder a-G Visa card-G.
     c. el este un admirator al Mona Lisei.
          He is an admirer a-G Mona Lisa-G.

In Romanian like in English (- event) nominals can be subdivided into further groups such as agentive and instrumental:

(- eventive)

A. **(+ agentive):** dansator (dancer), invatator (teacher), profesor de matematica (teacher of maths)

B. **(+ instrumental):** calculator (calculator), aspirator (vacuum cleaner)

(2) a. ajutor (de bucatar)   b. fumator
          helper   smoker
     c. aspirator
          vacuum cleaner

The above-mentioned examples show that some – or nominals can occur without argument structure (2) while others do not (1).

In the spirit of van Hout & Roeper (1998), Alexiadou & Schäfer (2007) and many others, I argue that the –or nominals in (1) carry the verb's event structure, thereby projecting argument positions while the (- event) –or nominals do not entail an event. The nouns in (2) have both agentive and instrumental readings without referring to an event: a cook helper is someone who may never help a cook, but simply finished cook helper school. In the same manner, the vacuum cleaner may be new and never used. Unlike the –or nouns in (2), those in (1) allow argument structure and involve an event reading: an admirer of Mona Lisa must have admired the painting. Consequently the –or event nouns have only the agentive reading.

Next to the –or nominalization (+ event and – event), the -or affix is also involved in the derivation of deverbal adjectives and adverbs:

(3) a. un roman plictisitor
          a boring novel
     b. m-a privit amenintator
          (pro drop) saw me in a menacing way.

Semantically speaking, these deverbal adjectives resemble the –or agentive (-

event) nouns in (2) in that they have a characterizing function rather than an event entailment. This is also observed by Krifka (1995), who mentions that agentive –er nominals, which correspond to the agentive (- event) nouns in (2), have a characterizing meaning like in (4).

(4)   a.   El este un fumator notoriu.
            He is a notorious smoker.
      b.   Romanul este plictisitor.
            The novel is boring.

The characterizing function of –or adjectives is further supported by their exclusive postnominal position which is predicative (4b) (Kayne 1994). Moreover, like agentive (- event) nominals, -or adjectives do not allow argument structure but entail the presence of an agent.

Thus the same affix is used both in nominal and adjectival/adverbial nominalization and has different entailments (agentive/ instrumental vs. agentive reading). In this paper I propose that differences in the internal structure for –or nominalization account for the fact that the same affix selects different levels of verbal projections.

Specifically, the –or affix can embed different morpho-syntactical contexts, triggering distinct semantic effects. For instance, (+ event) agentive nouns involve an event and allow argument structure and therefore I argue that they contain not only a VP but also the functional projections which license argument structure, such as vP, AsP and VoiceP. In contrast to (+event) derivation, the (-event) nominal and adjectival derivation does not involve the same structure since they do not project argument structure and do not entail an event. I regard the differences between the different kinds of –or formation as a result of different morpho-syntactical processes: I argue that agentive (+ event) nominals involve a nominalization process since –or affix is base-generated as the Agent in the Specifier of VoiceP and moves then with the verb to an empty N head. In contrast to the process of nominalization, the -or affix involved in the derivation of instrument/agentive (- event) nouns and adjectives is base-generated in the nominal/ adjective head position where the verb moves up and cliticizes. Since these derivates do not have argument structure, they also lack the VoiceP.

In the next section I turn to the decomposition of –or derivates and explain the subcategorization rules of the –or affix in Romanian.

2.   The morpho-syntax of –or nouns and adjectives

2.1   The –or nominalization

Focusing first on (+event) nominals, we recall the fact that they entail an event and project argument positions (see (1)).

Following van Hout & Roeper (1998) and Alexiadou & Schäfer (2007) I

argue that these nouns involve the whole set of verbal functional projections: v, AspectP and VoiceP. On the bases of their morphology I can show that they involve a v head, as they derive from participles see Chomsky (1995).

Participles can include in their structure a verbal suffix like *–iz* which is taken as the overt reflex of a v head, a head that verbalizes roots and introduces eventuality. Note that all of them include some sort of thematic vowel, like in Italian (see Ippolito (1999)).

(5)

Root	**Verb**	**Participle**
COMPUTER	– computer **–iz** –a – (to) equip with/control by computers	– computer**iz**at
COLON	– colon**–iz** –a – (to) colonize	– colon**iz**at
FAVOR	– favor **–iz** –a – (to) treat with favour	– favor**iz**at

Verb	**Participle**	**Noun**
a admira to admire	admirat admired	admirator admirer

In addition, the morphology of the –or noun "admirer" involves the stem for the participle –t and the affix –or.

(6)   (+event) – or noun = verbal root $\sqrt{}$ + -t participle + or

Unlike –er nominals in English, -or nominals in Romanian contain the stem for participle which is endowed with aspectual properties. Within Alexiadou & Schäfer's (2007) approach, I distinguish between two aspectual properties which are correlated with the voice specification, namely dispositional vs. the episodic aspect. I argue that these aspectual specifications are triggered by the participial stem present in –or nominalization. Positive evidence in this respect comes from Alexiadou & Anagnospoulou (2004, 2008) who argue that the aspectual properties of participles are reflected in different affixes.

In Romanian, participles are distinguished between target participles which do not allow argument structure and resultant ones which allow agent and instrumental PPs (see Parsons (1990) for English, Kratzer (1996) for German and Alexiadou & Anagnostopoulou (2004, 2008) for Greek). (7a) is an instance of a resultant state participle in Romanian:
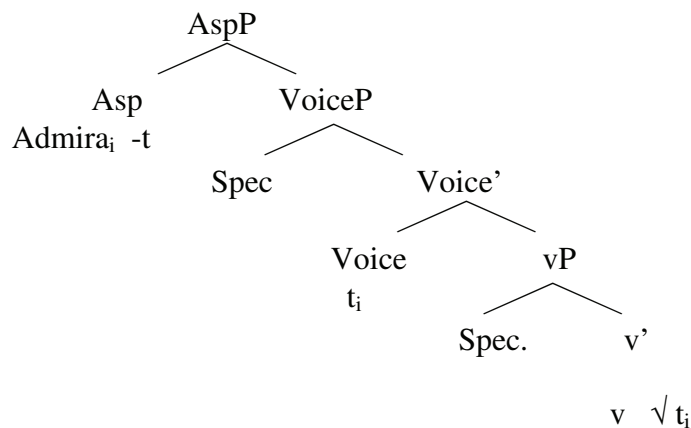
(7) a.   El este admirat de catre multi fani.
            He is admired by many fans.
       b.   El este un admirator al Mona Lisei.
            He is an admirer of Mona Lisa.

The most obvious difference between the resultant participle in (7 a) and the (+event) –or nominal relies on voice specification. The participle in (7a) acquires a passive interpretation, being specified with the external argument in the PP "de catre + N" "by + N".

Following Alexiadou & Anagnostopoulou (2004, 2008), this participle involves VoiceP. For that I claim that resultant participles involve the same type of event and the same aspectual operator like –or nominals. This type of event triggers episodic aspectual properties. As a consequence, my argument is that resultant participles are contained in the internal structure of –or nominals as the following analyses show:

(8) admirat de catre fani – resultant participle
     admired by fans

```
                        AspP
                       /    \
                    Asp      VoiceP
                 Admiraᵢ -t   /    \
                          Spec     Voice'
                                  /     \
                              Voice      vP
                               tᵢ       /  \
                                     Spec.   v'
                                           /  \
                                          v   √ tᵢ
```

(9) admirator (al Mona Lisei)
     admirer of Mona Lisa

```
                nP
               /  \
              n    AspP
    admiraᵢ + tₘ – orₖ  / \
                     Asp    VoiceP
                   tᵢ₊ₖ -tₘ  /   \
                          Spec    Voice'
                           tₖ    /     \
                             Voice      vP
                             tᵢ -tₖ    /  \
                                    Spec.   v'
                                          / \
                                         v  √ tᵢ
```
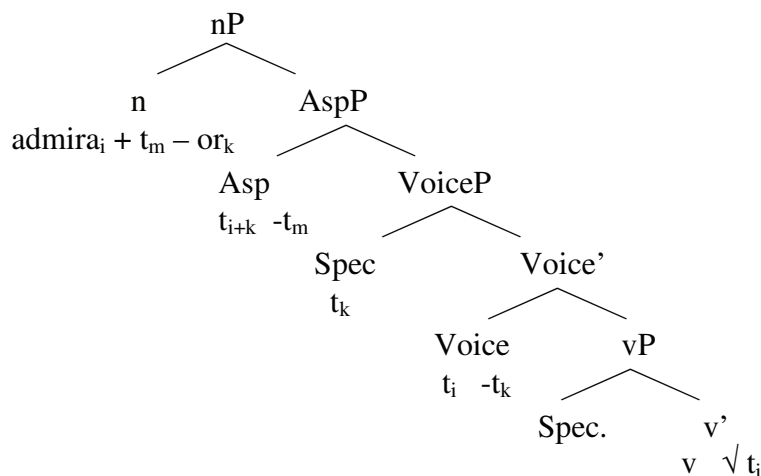
In Romanian, the resultant participle in (8) contains a fully projected VoiceP and an (episodic) Aspectual Phrase. The aspectual head is made visible

by the –t affix in Romanian which represents the stem of the participle. I argue that –t in Romanian can be bound by different types of events, triggering either dispositional or episodic aspect (see Alexiadou & Schäfer (2007)). Since resultant participles license agent PPs (see Alexiadou & Anagnostopoulou 2004, 2008), they resemble again (+ event) nominalization which is characterized through the existence of obligatory agency[1]. For this reason, VoiceP is also present in the structure of participles. So far the two syntactic constructions seem to coincide.

For the fact that the participle in (8) and the deverbal noun in (9) involve the same event variable bound by the same episodic aspect head I propose that the structure of the resultant participle is contained in the structure of the –or noun. Their interpretive distinction is based on the realization of voice.

–or in (+ event) nominalization is an agentive affix[2] which is base-generated as the Agent in the Specifier of Voice and then moves up to an empty head (see van Hout & Roeper's (1998). I call this process the –or nominalization (vs. the –or derivation of (- event) nominals).

As for the resultant participle in (8), this has a passive voice specification. Importantly, the difference between the two constructions is made in the Voice Phrase which contains voice features and creates a syntactic position for the Agent of the event.

In the next section, I show that –or is involved in the derivation of (- event) nominals which differ from the –or nominalization in the levels of verbal subcategorization.

2.2   The –or derivation

As I mentioned in the introductory section, the main distinction between –or agent nouns and –or instrument/agent nouns is that the latter do not entail an event. (see (1) vs. (2)). As a consequence, these (- event) nouns do not project argument structure. In the light of this evidence I show that –or from (- event) nominals is base-generated as the nominal head of nP and I regard this as a derivational affix. The same argument was also provided for the Catalan and the Spanish –or affix by Picallo (1991):

(10)   el traductor d'una novella
       The translator of a novel

Picallo (1991) makes the distinction between linked (subcategorized) theta-roles and those that are not subcategorized like the one presented in (10). She argues that unlinked theta-roles can be realized in many ways such as: arguments, referential adjectives (10b) or adjuncts. This argument explains why (- event) –or

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[1] Recall that while (-event) –or nominals can have either an agentive or instrumental reading, (+event) –or nominals are always agentive.
[2] Picallo (1991) shows that –or affix is also an agentive suffix in Catalan.

nominals usually do not license their argument in the genitive case but as adjunct PP "de + N":
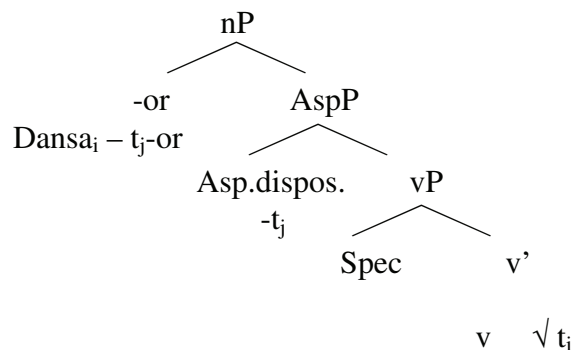
(11) a. El este traducator de romane politiste.
          He is a translator of detective stories
     b. vanator de rechini
         sharp hunter
     c. vanatorul rechinului alb
         the hunter of the white sharp

Comparing (1) with (11a&b), note that the theta-roles of the (+ event) –or nominals are realized in the Genitive case as a subcategorized argument while the objects of (- event) –or nominals are not subcategorized and they occur as PP adjuncts. This contrast is shown in (11b) and (11c) where in the former the –or lacks eventive interpretation and licenses only an unlinked argument realized as an adjunct PP. Unlike (11b), the noun in (11c) involves the event of killing a sharp since its argument is subcategorized in the genitive case. I argue, therefore, that (- event) nominals do not project argument positions and do not entail an event: a translator of detective stories may be someone who never translated a detective story but is simply in the position of a translator of detective stories.

Following Alexiadou & Schäfer (2007), I show that (- event) –or nouns involve an event head V, basing this proposal on two arguments: the morphology of –or nouns and adjectival modification. From a morphological point of view, –or nominals contain a verbal root and the affix of the participle –t like in the derivation presented in (6) and repeated here:

(12) (-event) – or noun = verbal root $\sqrt{}$ + -t participle + or
      dansator = dansa $\sqrt{}$ + -t participle + or

(13) dansator (-event)
      dancer

$$
\begin{array}{c}
\text{nP} \\
\diagdown \\
\text{-or} \qquad \text{AspP} \\
\text{Dansa}_i - t_j\text{-or} \quad \diagdown \\
\text{Asp.dispos.} \quad \text{vP} \\
-t_j \qquad \diagdown \\
\text{Spec} \qquad \text{v'} \\
\text{v} \quad \sqrt{}\, t_i
\end{array}
$$

Importantly, like the (+ event) –or noun in (9), the above-mentioned –or (- event) noun contains the structure of the participle with the aspectual

specification in the affix –t. Recalling the distinction done in Parsons 1990 for English, Kratzer (1996) for German and Alexiadou & Anagnostopoulou (2004, 2008) for Greek between target participles which do not allow argument structure and resultant ones which allow agent and instrumental PPs, I propose that target participles are self-contained in the structure of (- event) –or nominals. Like target participles, (- event) nouns in Romanian have neither event entailment nor argument structure. To account for their lack of event entailment I claim that they are bound by the same operator like the target participles: the dispositional aspect. According to Alexiadou & Schäfer (2007), event nominals are episodic while non-event ones are dispositional. The dispositional characterizing function of (- event) nominals was also observed by Krifka (1995) who argues that agentive –er (- event) nominals in English have a characterizing meaning.

Recalling Picallo's (1999) distinction between subcategorized and non-subcategorized arguments, I argue that (-event) nominals license only an unlinked argument realized as an adjunct PP (see (11a&b) vs. (11c)).

These similarities between target participles and (-event) nominals in Romanian lead to the conclusion that (- event) nominals are built against target participles which have neither event reading nor voice specification. So far the syntactic structures of (+ event) nouns and (- event) nouns differ with respect to aspectual and voice specification.

Another distinction between –or nominalization and derivation represents the nature of the affix –or involved in these two processes. I claim that the affix –or involved in the derivation presented in (13) is a derivational affix base-generated as the head of N while the same affix from the structure in (9) is an inflectional affix base-generated in the Spec. of VoiceP.

To sum up, I regard the differences between the different kinds of –or formations as a result of different morpho-syntactical processes: I argue that agentive (+ event) nominals involve a nominalization process since the –or affix is base-generated as the Agent in the Specifier of VoiceP and moves then with the verb to an empty N head. In contrast to the process of nominalization, the -or affix involved in the derivation of instrument/agentive (- event) nouns is base-generated in the nominal/adjective head position where the verb moves up and cliticizes. Since these derivates do not have argument structure, they also lack the VoiceP. However, as the structures in (9) and (13) show, both –or nominalization and derivation involve an event variable. To support this fact, I base my claim on the two arguments proposed by Alexiadou & Schäfer (2007): the morphology of –or nouns presented in (6) & (12) and adjectival modification. So further evidence for the event level within (- event) –or nominals is provided in the next section on the correlation between adjectival modification and –or derivation.

2.3   Adjectival modification and –or nominals

Further evidence for the event layer of –or nominals comes from the adjectival modification. Regarding the agentive and instrumental interpretation of –or

(- event) nominals in Romanian, the variable position of the adjectives corresponds to different interpretive effects:

(14) a. un dansator bun   b. un bun dansator
          a dancer good   a good dancer
      1. x is good and x is a dancer   1. out
      2. x is a good dancer   2. ok

(15) a. un calculator rapid   b. *un rapid calculator
          a calculator rapid   a rapid calculador
      1. the calculator calculates rapidly.

Note that the prenominal adjective modifying the –or noun in (14b) behaves like an adverb for the deverbal noun, being closer to the head. While in the postnominal position in (14a) (with the intersective reading see 2.) the adjective "good" behaves like a predicative adjective within a small relative clause. Regarding instrumental –or nouns in the spirit of Alexiadou & Schäfer (2007), Romanian shows no variation in the position of adjectives modifying these nouns (see (15). The explanation for that could be the mono-dimensionality of (- human) nouns.

The adjective "rapid" in the postnominal position refers to the process of calculating and, therefore, it can be assumed that it behaves like an adverb. Unlike (+ human) nouns which can be defined according to more parameters (character and their aptitudes), instruments can be defined only with respect to their function. Therefore, the adjective is allowed only in the postnominal position as no ambiguity can occur. The conclusion to be drawn is that the prenominal position of a dual adjective modifying a (+ human/ animate) N corresponds to adverbial modification while the post-nominal position is ambiguous between an adverbial and an adjectival modification. In contrast to (+ animate) –or nouns, instrumental nouns have only one interpretation which refers to their function and therefore the adjective modifying these nouns can be interpreted as adverb.

All in all, not only agentive but also instrumental (- event) nouns modified by adjectives such as "good" or "rapid" imply a verbal head. Therefore, they involve a vP and the adjective exclusively behaves like an adverb.

In the next section I illustrate the derivation of adjectives with –or demonstrating that they involve a verbal layer like (- event) nominals without entailing event.

2.4   The derivation of –or adjectives

As I presented in the introduction, apart from the –or nominalization of (+ event) nouns and the derivation of (– event) instrumental and agentive nouns, the –or affix is also involved in the derivation of deverbal adjectives and adverbs[3] (see

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[3] In this paper I focus only on the morpho-syntactic behaviour of –or deverbal adjectives.

(3) repeated below):

(16) a.   un roman plictisitor
            a boring novel
      b.   m-a privit amenintator
            (pro drop) saw me in a menacing way.

I argue that these deverbal adjectives/adverbs are derived from a verbal root in the same manner like (- event) agentive nouns providing that they both have a characterizing function rather than an event entailment. The characterizing function of (- event) –or nominals is proposed by Krifka (1995) in the following example:

(17)   He is a pipe smoker. - **characterizing function**

The characterizing function of –or adjectives is indicated also by their exclusive postnominal position (16a) which is predicative (Kayne 1994). Importantly, both deverbal –or adjectives and agentive (- event) nominals can occur as predicates:

(18) a.   Romanul este plictisitor.
            The novel is boring.
      b.   El este fumator.
            He is smoker.

 Moreover, they resemble (- event) –or nouns in that they do not allow argument structure but entail the presence of an agent. I assume, therefore, -or adjectives entail the same morphological derivation like (- event) nominals containing a verbal root, an affix of the participle which triggers dispositional aspect specification (vs. the episodic aspect involved in (+ event) nominalization) and the derivational affix –or base-generated in A:

 (19) a.   Plictisitor – plictisi – plictisit – plictisitor
            Bored-or – to bore – bored – bored-or
            (- event) – or adjectives = verbal root $\sqrt{}$ + -t participle + or

Like in the case of (- event) nominals, I argue that –or adjectives are built on the basis of a participle stem which does not trigger argument projection and episodic aspect specification. These participles correspond to the target class of participles according to the classification in Parsons's (1990) and Alexiadou & Anagnostopoulou (2004, 2008). Unlike result participles on the basis of which I argued that the –or nominalization is built, target participles do not license argument and instrument PPs, consequently they do not contain a VoiceP. The proposal is that target participles are contained in the internal structure of

(- event) derivation (agents/instrumental nouns and deverbals adjectives):

(20)   plictisit – target participle
            Bored

                              AspP
                          ╱   ╲
              Asp disposit.   vP
              Plictisi$_i$ ╱   ╲
                              Spec   v'
                                           │
                                           v
                                           │
                                          t$_i$

        Note that both target participles and –or adjectives are dispositional and thereby occur as predicative postnominal adjectives[4] without entailing an event:

(21) a.   un copil plictisit de jucarii   b.   Un copil care e plictisit
            a child bored of toys   a child who is bored of toys

(22) a.   un copil plictisitor   b.   Un copil care e plictisitor
            a child boring   child that is boring.

        In order to sustain my argument according to which neither target participles nor –or (- event) derivants have argument structure, I make reference to Chomsky's (1970) and Ippolito's (1999) hypothesis that claims that the root is responsible for the voice and aspectual specification of the derivate[5]. Therefore I claim that the lack of event entailment in –or derivation (nouns & adjectives) is triggered by the root verb which does not subcategorize for arguments[6] and builds target participle specified with the dispositional aspect.
        The tree in (23) illustrates the internal structure of the –or adjective

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[4] Both target participles and –or deverbal adjectives can be modified by cel in Romanian, see Marchis &Alexiadou (2008).
[5] For instance, root verbs such as √dance imply an agent and others like √grow that do not.
[6] The distinction between subcategorized and non-subcategorized arguments (see Picallo (1991) is important to account for below-presented data:
    i. admirat de catre prietenii lui   ii. plictisit de jucariile lui
       admired by his friends   bored of his toys
Note that the verb *admira* "admire" in Romanian projects argument structure "by his friends" while the verb *plictisi* "bore" has an unlinked argument realized as an adjunct PP "de +N". I argue that the complex preposition "de catre" introduces the external argument in Romanian while the preposition "de" introduces also adjuncts:
    iii. Maria a fost admirata de catre prietenele ei. iv. * Maria a fost plictisita de catre jucariile ei.
       Maria was admired by her friends.   Maria was bored by her toys.

plictisitor derived from the target participle *plictisit:*

(23) plictisitor
      Bored-or
      Boring

Note that although the morphology of the –or agentive nominal (12) and that of the –or adjective (23) is the same, syntactically they are different. Their distinction is explained within the framework of Marantz (1999) according to which syntactic categories are not primitives and, therefore, their formation is negotiated in the syntax. To create a lexical category from a root means to merge the root with a functional head. In the case of –or adjectives, the root merges with a functional head v generating a verb, a participle due to –t (the suffix responsible for aspectual effects) and then v plus the participle affix moves to the head of aP where the derivational affix –or is base-generated, giving birth to an adjective.

In the spirit of Picallo (1991) and van Hout & Roeper (1998), I argue that –or involved in the derivation of –or (- event) nouns and adjectives is a derivational affix base-generated as the head of the phrase nP and aP provided that they have different interpretive effects (agentive and instrumental). Again the same aspectual distinction (episodic vs. dispositional) observed by Alexiadou & Schäfer (2007) is also visible with –or adjectives and adverbs[7]. –or adjectives usually describe a generic (dispositional) characteristic of the noun they modify while the –or adverbs present the manner in which an (episodic) event was performed at a certain time:

(24) a.   Are o tinuta provocatoare.   - **dispositional/ generic**
             has a wear provoking.
             She has a provoking wear/ a wear that provokes.

      b.   M-a privit provocatoare   - **episodic/ eventive**
             saw me in a provoking way
             He saw me provokingly

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[7] In this paper I do not deal with the internal structure of –or adverbs.

3.   Conclusion

In this paper I argued that the –or affix can embed different morphosyntactical contexts in Romanian, triggering distinct semantic effects. My proposal is that the affix –or is involved in two different processes: the (+event) nominalization and the (- event) derivation.

I showed that both (+ event) and (- event) nouns have an event variable, on the basis of the two arguments proposed by Alexiadou & Schäfer (2007): the morphology of –or nouns and adjectival modification. The morphology of –or nominals and adjectives illustrates that they have an event variable, as their morphology involves the verbal root√, the stem for the participle –t and the affix –or. A further evidence for the fact that also –or (- event) nouns contain an event variable comes from the adjectival modification of agentive and instrumental –or (- event) nouns. The variable position of dual adjectives and their different interpretive effects show that –or (- event) nouns involve a vP, as the adjective in the prenominal position exclusively behaves like an adverb when it modifies a (+ human) noun.

Therefore, following Alexiadou & Schäfer (2007), I proposed that in both the –or nominalization and the -or derivation a vP is present but is bound by different operators (episodic vs. dispositional). The distinction between the two different aspectual operators proposed by Alexiadou & Schäfer (2007) is visible also in the process of nominalization and derivation with –or in Romanian: event nominals are episodic while non-event nominals are dispositional.

In the spirit of Picallo's (1991) distinction between subcategorized and non-subcategorized arguments, I claim that (- event) nominals license only an unlinked argument realized as an adjunct PP and therefore, they lack voice specification. Syntactically speaking, they are then similar to target participles as they have neither event reading nor voice specification. Moreover, they are bound by the same dispositional aspectual operator provided that they do not entail event and have a characterizing function (see Krifka (1995)). In the light of this evidence I argued that target participles are contained in the internal structure of (- event) derivation while resultant participles are involved in the structure of (+ event) nominals as they entail event and have argument structure (subcategorized arguments).

To conclude, (+ event) agentive nouns involve an event and allow argument structure and therefore, like resultant participles, they contain not only a vP but also the functional projections which license argument structure, such as vP, AsP and VoiceP. In contrast to the (+ event) nominalization, (- event) nominal and adjectival derivations do not involve the same structure since neither (- event) nominals nor (- event) adjectives project argument structure and entail an event. I regarded the differences between the different kinds of –or formation as a result of different morphosyntactical processes: agentive (+ event) nominals involve a nominalization process since –or affix is base-generated as the Agent in the Specifier of VoiceP and moves then with the verb to an empty N head. In

contrast to the process of nominalization, the -or affix involved in the derivation of instrument/agentive (- event) nouns and adjectives is base-generated in the nominal/adjective head position where the verb moves up and cliticizes.

All in all, in this paper I showed that various Event properties are located in different nodes inside the structure of –or nominals and –or adjectives and their differences are reflected in the internal structure of two different processes: nominalization vs. derivation.

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Mihaela Marchis
Department of English Linguistics
University of Stuttgart
Heilbronner Str. 7
70174 Stuttgart

mihaela@ifla.uni-stuttgart.de

Bare and indefinite NPs in predicative position in French[*]

Alda Mari, Fabienne Martin

Jean Nicod Institute, University of Stuttgart

This paper proposes a new analysis of the use of bare nouns vs. indefinite NPs in predicative position in French. We distinguish between predicational sentences (with the bare noun version) and equative sentences (with the indefinite version). We argue that bare nouns ascribe permanent properties to *aspects* of entities. As for the indefinites, we claim that they exhibit their specific reading and introduce an individual *in a new situation*, which is identified with the referent of the subject.

1.   Introduction

It is well-known that determiners in Romance languages[1] are not mandatory for NPs in predicative position.

(1)   a.   Jean est un enfant
            Jean is a child
        b.   Jean est enfant
            Jean is ∅ child
        c.   Moi, je suis voiture/ salade/ mini-jupe …
            Me, I am ∅ car/ salad/ mini-skirt …
            'Me, I like/drive/sell… cars/ like/eat/buy… salads/ like/wear/sell… mini-skirts …'

Recent research on the subject has considered in particular what have been called 'capacity nouns' like *avocat* 'lawyer' (de Swart *et al.* 2007), that is to say, nouns which have the +[*sentient*] and +[*institutional*] features.

This paper looks beyond these restrictions, since, as the examples in (1) suggest, other nouns which do not have these two features behave in the same way[2]. These features seem unnecessary and we argue that any noun can be used.

[1] The paper focuses on French. The observations and theory extend to Italian. The corresponding translations of (1) are: (a) Giovanni è un bambino, (b) Giovanni è bambino (c) (Io,) sono insalata.
[2] van Peteghem 1993 and Roy 2006 already emphasize that 'enfant' (1b) is acceptable even if lacking the +[*institutional*] feature.

The paper is dedicated to spelling out the conditions of their use under the two variants.

One of our claims is that the two variants correspond to two types of sentences, predicational (with the bare variant) and equatives (with the indefinite). In the first case, the bare noun is of type <e,t> and ascribes a property to an *aspect* of an individual; in the second case, *un N*, of type <e>, singles out an individual *x* which bears the description *N* in a *new situation*. We argue that sentences of the type *Jean est N* are predicational (but ascribe properties to *tropes*), whereas sentences of the type *Jean est un N* are equatives. This will allow us to explain why the indefinite version is the marked one out of context (since equatives often require a special context to be uttered felicitously, cf. Zamparelli 2000, Mikkelsen 2002). It also explains why the indefinite version of (1c) provided in (1c') is pragmatically weird, since it would equate a person and a car, a salad or a mini-skirt .Only special contexts can make it felicitous and it is part of our endeavour to spell out which ones and the mechanisms of interpretation.

(1)   c'.   #Je suis une salade !
              I am a salad!

The paper is structured as follows. In section 2, we review the main pieces of data and available accounts. In section 3, we present our proposal. We dedicate section 3.1 to bare nouns, and section 3.2 to indefinite NPs. Section 4 concludes the paper.

2.   The first pieces of the problem: previous accounts and data

A first idea (Strohmeyer 1907, Kupferman 1979) on the difference between the bare and the indefinite version is that *un N* describes an individual bearing the property introduced by the noun, whereas the bare version is a case of property attribution.

This view has been elaborated recently by Beyssade and Dobrovie-Sorin 2005 in a modified claim which keeps the original distinction between two kinds of predication. Specifically, the relation between the bare and the indefinite one in predicative position has been analyzed as a relation between attributive predication (for the bare version) versus inclusion/classification (for the indefinite version).

More technically, the claim goes as follows. *Un enfant* and ∅ *enfant* are of type <e,t>. Although they both are one place predicates, they still differ in that ∅ *enfant* is considered a 'qua-property' predicate, whereas *un enfant* is defined as a 'qua-set' predicate. This difference has a consequence in their treatment of the subject NP. When combined with *un N*, the subject is assigned the type <e>. It

denotes an entity which belongs to the set <e,t> denoted by *un N* (the reduction is <e>*<e,t>=t). When combined with ∅ *enfant*, the subject is taken to be a generalized quantifier of the type <<e,t>,t> (the reduction is <<e,t>,t>*<e,t>). In this case, the authors claim that the bare noun introduces a property localized in the subject. In other words, the sentence says that the property introduced by the bare noun is one among those of the subject NP.

This view is summarized in (3a) and (3b) for (2a) and (2b), respectively, where *D* and *P* stand for properties, *x* is a variable with ranges over individuals, and *j* is an individual constant. (2a) is states that *lawyer* is one of the properties of John, while (2b) states that Jon is a member of the set of lawyers.

(2) a.   Jean est avocat
           Jean is ∅ lawyer
     b.   ?[3] Jean est un avocat
           Jean is a lawyer

(3) a.   ($D \in \lambda P.P(j)$) – The property of being a lawyer is one among the properties of John
     b. $j \in \lambda x \, D(x)$) – John is an individual in the set of lawyers

According to Dobrovie-Sorin and Beyssade, this explains the *ce/il* distribution. Assuming the view according to which *ce* cannot be shifted to denote properties and thus can only be of type <e>, the following contrast seems to be explained:

(4) a.   Pierre, il est médecin
           Pierre, he is ∅ doctor
     b.   Pierre, c'est un médecin
           Pierre, 'ce' is a doctor

This view poses both empirical and theoretical problems.

2.1.1 Empirical problems

The empirical adequacy of the distinction is far from clear. It has been noted since Strohmeyer 1907 that the indefinite article introduces a shift in the interpretation. Besides the classificatory use, which seems to be correctly analyzed and illustrated in (5), the indefinite is very commonly used in "metaphorical contexts", cf. (6), or when the speaker intends to emphasize the "quality" expressed by the noun, cf. (7). This use has been called 'evaluative' (van Peteghem 1993).

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[3] '?'is meant to indicate that this example is not always perfect out of the blue. We will come back to this issue in section 3.3.2.

(5)   L'autruche est un oiseau
        The ostrich is a bird
(6)   Le castor est un architecte
        The beaver is an architect
(7)   Jean est un avocat !
        John is a lawyer!

Since the above mentioned account takes for granted that *être un N* expresses set membership, four points remain unexplained.

1. Remarkably, the only use that is correctly grasped by the above mentioned analyses does not alternate with the bare version (van Peteghem 1993).

(8)   #L'autruche est oiseau
         The ostrich is ∅ bird

2. (7) is not properly captured and the reasons for 'emphasizing the quality' deserve further investigation.

3. Similarly, the above-mentioned account is also silent on the fact that the *un N* is much better accepted when it is modified.

(9)   ?Jean est un avocat
         Jean is a lawyer

(10)   Jean est un avocat qui travaille dans le troisième arrondissement
         Jean is a penal who works in the 13th urban district

4. What as been called the "metaphorical" use is far from rare. In that case, no adjective is required to have an acceptable sentence.

(11)   Jean est un manager
        Jean is a manager
(12)   Jean est manager
        Jean is ∅ manager

(11) can be used to metaphorically qualify the behaviour of John, whereas (12) entails that John is manager by profession (see de Swart *et al.* 2007).

2.1.2 Theoretical problems

On the theoretical side, there are also some issues that need further investigation.

Beyssade and Dobrovie-Sorin 2005 argue that the indefinite and the bare version predicate in two different ways: attributive predication (the bare version) and ascribing set membership (the indefinite one).

Two questions arise: Should we unify the two? And should we explicitly introduce type shifting for the use of *un*?

Recent work by de Swart *et al.* 2007 positively answers both these questions and adopts a unitary view of predication as expression of set membership/classification.

The authors claim that (2b) – which they accept as perfectly well-formed without any special context– expresses that 'John is a member of the lawyer kind', where the capacity noun *avocat* of type *e* is coerced into a kind (also of type *e*) and then into a set expression via application of REL (Carlson, 1977) inducing type shifting from kinds to entities, and which semantically corresponds to *un*.

For (2a), they adopt a (c)overt operator CAP, obtaining (j ∈ CAP(teacher)), i.e. 'John is in the set of entities which are lawyers by profession'. This is meant to capture sentence (13a). 'By profession' further turns 'lawyer' into the set of elements that are lawyers by profession, the sentence stating that John is one of them, cf. (13b).

(13) a.   John is a lawyer by profession
     b.   John is in the set of professional lawyers

This view introduces some new theoretical advances. In particular, it assumes that some hidden material plays a role, providing the 'domain' of application of the property. Nonetheless, some theoretical problems remain.

The first one concerns the identification of features characterizing the nouns that can appear in the bare position. These authors adopt the features [+*sentient*], [+*scalar*] (from Matushansky and Spector 2005) and add the feature [+*institutional*]. This wrongly excludes nouns expressing age, sex, and different kinds of qualities from the pattern (see Strohmeyer, 1907; van Peteghem, 1993; Roy 2006), as well as nouns like *voiture* 'car', cf. (1c).

(14) a.   Jean est enfant
           Jean is ∅ child
     b.   Jean est un enfant
           John is a child

(15) a.   Jeanne est garçon
           Jeanne is ∅ boy

    b.   Jeanne est un garçon !
              Jeanne is a boy!

The second one concerns the characterization of the kinds of descriptions being made, whether they have a more permanent/definitional or a temporary flavour. De Swart *et al.*'s account is silent on this issue, which is at the core of the problem.

Other authors (notably Matushansky and Spector 2005, following Roy 2001) have claimed that the indefinite version would express a definitory property, and the bare version a temporary one[4]. This is supposed to explain (16).

(16)   Jean est danseur la nuit et enseignant le jour
       John is $\varnothing$ dancer during the night and $\varnothing$ teacher during the day

Let us note from the outset that this characterization is questionable. If it can rule out (8), it does not explain how (6) can be obtained. Furthermore, it is not so clear that (16) expresses a non-permanent property (see below).

Let us summarize and take stock. Like Beyssade and Dobrovie-Sorin 2005, we assume that the bare noun is of type <e,t>, but claim that the indefinite NP is of type <e>. We are going to propose a different view (i) of the entity that is being described by the bare nouns, (ii) the constraints regulating the use of the indefinite, in particular (iii) provide a different account of the role of the copula and giving importance to a general requirement of the use of indefinites, namely, novelty and situational anchoring. Although proposing a different account from de Swart *et al.* 2007, we are going to build on an important insight of theirs, namely, that recovered material plays a role. Finally, like Matushansky and Spector 2005, we acknowledge the need of the scalar feature, but we do not assume as they do that it is compulsory and explain under which conditions the scalar interpretation of the noun is forced. Moreover, differently from these authors, we argue that *un N* introduces a temporary, situated property, whereas bare nouns a definitory property of aspects of individuals.

3.   A new proposal

3.1   Overview of the claim

The claim we argue for in the following sections is that the bare noun ascribes a property to an aspect of an individual, whereas the indefinite NP introduces an individual in a new situation.

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[4] In a similar vein, Beyssade 2008 suggests in a recent work that the bare noun expresses a temporary phase, see below.

The two variants correlate with two different types of sentences: predicative sentences and equative ones.

3.2. Analysis for the bare version

In this section, we develop the proposal that bare nouns express permanent properties of aspects of individuals and like any other individual-level predication, lead to a generic reading of sentences (see Chierchia 1995).

In section 3.2.1, we begin by providing some arguments for considering the presence of reconstructed material (following in part de Swart *et al. ibid*). We present in section 3.2.2 an informal view of aspects as tropes, followed by a more formal analysis of 'NP est N' and some predictions. We argue in section 3.2.3 in favour of treating bare nouns as expressing permanent properties of tropes, which leads to generic readings.

3.2.1 First steps

The first urgent question to be addressed is whether it is actually the case that 'some but not all' nouns can function as bare predicates. The discussion in the following sections shows that this view is incorrect. Any noun can be used bare iff (i) it provides information which is not previously given by the subject and (ii) if an argument introducing a domain of application of the property denoted by the bare noun can be recovered[5].

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[5] A related construction in Italian sheds some light on the phenomenon at hand. The same set of nouns that can occupy the predicative position bare are also possible in the construction *faire il N /* 'to do the' as firstly noted by Renzi and Venelli 1975.

(i)   a.   Giovanni fà il bambino
              Giovanni does the little boy
        b.   Giovanni fà il poliziotto
              Giovanni does the policeman
        c.   Giovanni fà la femmina / c' ? il maschio
              Giovanni does the girl / ? the boy
        d.   Marta fà la mamma
              Marta does the mummy

In all these cases, 'fà il' can be paraphrased as 'plays/has the role/profession/behaves like'. (ii) presents the paraphrases of (i).

(ii)   a.   Giovanni si comporta come un bambino
              Giovanni behaves like a child
        b.   Giovanni fà il mestiere di poliziotto
              Giovanni does the job of policeman
        c.   Giovanni si comporta come une femmina
              Giovanni behaves like a girl
        d.   Marta prende il ruolo della mamma

It has recently been proposed that only sortal nouns expressing (temporary) phases of an individual like *enfant* 'child' can function as a bare predicate (Beyssade 2008). This seems to explain the unacceptability of (17), since *garçon* 'boy' is generally true of an individual all his life long. However, *garçon* can indeed function as a bare predicate, as illustrated by the acceptability of the attested example (18a). Similarly, (18b) is perfect, still hermaphrodite expresses a non-temporary property.

(17)   #Jean est garçon
        Jean is ∅ boy

(18)   a.   Quand on est garçon, on aime bien les garçons. Pour discuter, faire copain (Internet)
               When one is ∅ boy, one likes boy. To discuss, make friends
        b.   Jean est hermaphrodite
               Jean is ∅ hermaphrodite

Below, we show that these examples as well as others empirically illustrate our two claims, namely, that the bare noun (i) must give a new information with regard to the subject to be acceptable and (ii) describe an aspect of an individual.

(i) Bringing in new information

The contrast between (17) and (18a)-(18b) straightforwardly derives from our first claim. In (17), the proper noun *Jean* already indicates that the referent is a boy, the bare noun is unacceptable because it only provides redundant information. By contrast, the pronoun *on* being underspecified with regard to sex, *garcon* conveys new and relevant information. Similarly, (18b) is acceptable because the property of being an hermaphrodite is not already provided by the proper noun *Jean.* Let us now consider the following cases (note that (19a) is interpreted as 'Jeanne behaves like a boy' and (19b) is interpreted as Jeanne behaves a lot like a woman).

(19)   a.   Jean/Jeanne est garçon (de caractère/comportement)
               Jean/Jeanne is ∅ boy
        b.   Jeanne est (très) femme
               Jeanne is (very) woman

Marta plays the role of the mother (she has become a mother)

For sake of precision, let us emphasize that the 'fa il + N' in Italian is not a paraphrase of the bare version in predicative position. But it sheds some light on the construction we are interested in here, since (a) there is an overlap between the nouns that can appear in the 'fa il' construction and bare in predicative positions; and (b) it also relies on reconstruction of hidden material.

    c.   Jean est policier
           Jean is ∅ policeman

When used to express the behavior of the individual, nouns like *garçon* again provide information which is not already conveyed by the subject, hence the acceptability of (19a). In (19b), *très* ('very'*; see Kennedy and McNally 2005) has the effect of shifting a non-gradable predicate into a gradable one, and expresses that the property is verified to a high degree. Stating that Jeanne is 'très femme' cannot amount to state that she is a woman (a non-gradable property); as a consequence, no redundancy occurs between the subject and the bare predicate. However, the bare noun does not always have to be interpreted as a gradable predicate for the bare predication to be relevant; for instance, *policier* is certainly not necessarily interpreted as gradable in (19c). We thus disagree with Matushansky and Spector 2005, which states that the construction makes the gradable feature compulsory.

The unacceptability of (8) is also easily derived the same way: the information of being a bird is already brought in by *ostrich*. The only way to save the example is to reinterpret *oiseau* as denoting the (accidental) behaviour, role, etc. of birds. On the other hand, the indefinite version of (6) (given in (20)) is fine, since being an architect characterizes the behaviour of the beaver (e.g. his skills):

(20)   Le castor est architecte.
       The beaver is ∅ architect

(ii) Aspects

What crucially counts for the use of the bare version is that there is an aspect of which the property is predicated. The information is thus 'partial' not because it only applies for a limited time, but because it concerns an aspect of the entity.

Like de Swart *et al.* 2007, we assume than that some hidden material plays a role and agree that sentences like (21) state that the *nationality* of the individual at hand is Italian. However, according to our proposal, the task of this hidden material is not to shift the type of the nouns (*à la* de Swart *et al.*), but to provide the aspect of which the property is predicated.

(21) Il est Italien
      He is ∅ Italian

Our claim is then that bare nouns are predicates of aspects of individuals (nationality being one example of them, see below). The generalization we propose is given in (22).

(22)   Generalization. When nouns are used bare in predicative position, a (possibly implicit) *par/de/dans NP2* provides the trope to which the property introduced by the bare noun applies. If NP2 denotes such a trope, the bare noun predication of the type 'NP1 est N par/de/dans NP2' semantically amounts to a predication of the type 'NP2 de NP1 est N'.

The generalization (22) extends that of de Swart *et al.* 2007 in that it does not restrict the set of nouns by the +[*institutional*] feature, but allows any noun expressing a property that can be restricted by a d*e/par/dans* modifier denoting a trope of the subject, that is virtually every noun. Some predictions derived from (22) are provided in the next section.

In the same vein, the account extends the coverage well beyond the +[*scalar*] and +[*sentient*] as proposed by Matushansky and Spector. Productive examples such as those cited in (1c) are captured as acceptable. Our analysis is given in the next section.

3.2.2 Aspects as tropes and tropes as accidents

Recent debate in the philosophical and linguistic literature has understood aspects in various ways. One of the views, which traces back to Aristotle, *Category I*, treats aspects of individuals as particulars, which ontologically depend on that individual. 'The character of John', the 'nationality of John' and so on are examples of them. There are some points of disagreement about which individuals count as tropes. Some theoreticians consider that tropes are abstract (e.g. Campbell, 1990), others define them as concrete individuals (e.g. Simons, 1994). All seem to agree on two issues:

(i) Tropes are *dependent* particulars, in the sense that they ontologically depend on another individual. So are accidents *à la* Aristotle.
(ii) Eventualities are tropes (eventualities cannot exist without their participants to exist).

Since eventualities have already a name in linguistics, we will restrict here the use of the term 'trope' to denote, within the class of dependent particulars, the complement set of the set of eventualities. In other words, 'tropes' will be used to denote dependent particulars which are not eventualities. We do not commit as to whether they are abstract or concrete.

We suggest that predication with bare nouns amounts to property ascription to tropes under this definition; the bare noun is of type <e,t> and ascribes a property to a trope. Following (22), sentences (23a-24a) paraphrase as (23b-24b).

(23) a.   John est avocat
          John is $\varnothing$ lawyer
    b.   La profession de John est avocat
          The profession of John is $\varnothing$ lawyer

(24) a.   Jean est italien
          Jean is $\varnothing$ Italian
    b.   La nationalité de Jean est italienne
          The nationality of John is Italian

In (23), *avocat* bears the type <e,t>, the copula has no effect, and being a particularized individual ,'the profession of John' bears the type <e>.

Differently from what is stated in Beyssade and Dobrovie-Sorin 2005, individuals are not analyzed here as properties of properties among which that expressed by the bare noun. The account we propose keeps the representation of individuals uniform, namely of type <e> (see section that follows for the analysis of the indefinite version). The cost of this claim is, of course, that we have to accommodate covert material, and coerce "Jean" into "a 'trope' of Jean". The bare noun characterizes this particular (also of type <e>). However, we agree with Beyssade and Dobrovie-Sorin that the bare version ascribes a property and does not express set membership.

Like de Swart *et al*. 2007, we assume that (23) implicates that John is among the lawyers by profession, but this is not the primary meaning of the sentence: it firstly qualifies its profession (not John). Moreover, although our analysis requires some hidden material like theirs, it does not involve type shifting, but only that hidden material be accommodated in subject position. Finally, it also has the advantage of covering a larger set of data, without a restriction to +[*institutional*] nouns. Before deriving its predictions, we present our analysis more formally.

As often emphasized by trope theorists, there is no closed set of particulars to be attributed to an individual.

Let *I* be the set of individuals, *X* the set of tropes and 'of' the abstract part of relation. (25) states that for every individual, the set of its tropes is not empty. (26) presents the semantics for the interpretation of predicative sentences with bare nouns.

(25) $\forall Y \in X \;\; \forall i \in I \;(\exists y \in (Y \text{ of } i))$
(26) The semantics of the bare version: *NP is N* iff $\lambda P.\, \lambda y \,(P(y))$

A first prediction of the analysis is that NPs like *la profession de Pierre* 'the profession of Pierre' which 'openly' denote tropes are acceptable with the bare noun version, but not with the indefinite one, cf. (23b) versus (23c). Note that (23c) funnily suggests that the trope of Pierre is a 'real' individual ("shall we invite the profession of Pierre for dinner today?"), which is explained if, as we propose below, the indefinite version introduces an individual and equates it with the referent of the subject:

(23) b.   OK La profession de Pierre est avocat.
              The profession of Pierre is ∅ lawyer
(23) c.   # La profession de Pierre est un avocat.
              The profession of Pierre is a lawyer

Note that contrary to what happens in "classical" cases of coercion (*John begins the book / John begins reading the book*), the version explicitly giving the output of the coercion process (that is, the paraphrase with a subject overtly denoting a trope) might sometimes sound somewhat unnatural. But we believe that if this is the case, it is due to the fact that we are not as used to talk overtly about tropes as we are about persons, things or events. A common strategy is to use nouns like *Jean* to describe a trope of Jean, as everybody understands the speaker's intention.

A second prediction is that the kind of paraphrase illustrated in (23a)-(23b) is *not* available when the *de/dans/par* modifier does not denote a trope of the subject. For instance, (27b) – which is unacceptable -- does not paraphrase (27a), because *la naissance de Pierre* 'the birth of Pierre' does not express a trope of Pierre, but rather an event involving him. Similarly, (28a) is not equivalent to (28b), because *la mère de Pierre* does not denote a trope of Jean, but rather an individual linked to him:

(27) a.   Pierre est italien de naissance.
              Pierre is Italian by birth
      b.   #La naissance de Pierre est italienne
              The birth of Pierre is Italian
(28) a.   Jean est aveugle par sa mère.
              Jean is blind because of his mother
      b.   La mère de Jean est aveugle.
              Jean's mother is blind

3.2.3 The bare noun ascribes generic properties

Authors agree on some facts about the phenomenology of generic properties: (i) they do not need to be instantiated, cf. (29a); (ii) they can be bound in time, cf.

(29b). Overall, definitory properties are taken to introduce a generic operator GEN and give rise to a generic interpretation of sentences.

(29) a.   This machine crushes oranges.
      b.   When he was a little boy, my son was very talkative

These two characteristics are met by bare noun predication. Contra Roy 2006, we assume that (30a) is perfectly acceptable (as well as its indefinite version). Note that (30b) is used to mean that my daughter used to wear mini-skirts when she was a teenager.

(30) a.   Pierre est avocat mais il n'a jamais pratiqué
          Pierre is $\varnothing$ lawyer, but he never practised.
      b.   Quand elle était adolescente, ma fille était mini-jupe
          When she was a teenager, my daughter was $\varnothing$ mini-skirt

(31) has been frequently used to argue that bare nouns introduce temporary properties. This interpretation of the data does not seem to be correct. If John smokes after dinner, he is not said to have a temporary property, but a property that occurs at particular occasions. In other words, as often argued, the generic reading is obtained in these cases and is driven by quantifying over situations (the days and the nights) and not over individuals (Krifka 1995, a.o.).

(31) Jean est danseur la nuit et enseignant le jour (= (16))
      John is $\varnothing$ dancer during the night and $\varnothing$ teacher during the day

Thirdly, bare nouns are not accepted in real episodic sentences. For instance, (32) is acceptable only on its inchoative reading under which it expresses the beginning of a permanent property.

(32) #This morning, Pierre est avocat.
     This morning, Pierre is $\varnothing$ lawyer

On the contrary, the indefinite version of (32) is acceptable under the metaphorical reading (Pierre is behaving this morning like a lawyer).

Summarizing. We have endorsed the claim that bare nouns lead to predicational sentences. We have shown that (1) some hidden material must be recovered, but that this does not introduce any type shifting, (2) the predication is 'partial' in that it concerns an aspect, (3) the predication is not temporary and leads to generic reading. Related to this third claim, we have shown that (3') any noun can be used, provided it brings in new information that is attached to an aspect of an individual.

In the next section we consider the conditions of use of the indefinite version, and also come back to a comparison with the use of the bare one.

3.3   The conditions of use of the indefinite version

3.3.1 The claim

We claim that in predicative position, *un N* denotes an individual (is of type <e>) and argue for two points.

(i) Situational dependence of *un N*. Firstly, we claim that to be appropriate, the indefinite *un N* receives its specific reading and singularizes an individual *x* under the guise *N* in a *new situation*.

(33)   **Situational dependence of *Un N*:** *un N* denotes an individual under the property *N* felicitously iff there is an element in the sentence anchoring the individual *x* and the property *N* in a new situation *s*.

Basically, in saying that *un N* denotes an individual *x* in a new situation *s*, (33) only reformulates the Condition of Novelty traditionally attached to indefinites since Heim 1982.

On the other hand, the claim that the attribution of the property *N* denoted by the noun is also anchored in a situation is maybe less traditional. It amounts to saying that the individual only has to verify the property *N* in *s* in order for the predication to be fulfilled. The predication provided by *un N* is in this sense "temporally weak". However, this of course does not impede one from using *un N* to make a stronger claim. The point is that it is not made compulsory by *un N* itself.

In claiming that *un* is also attached to the Condition of Novelty in the position under study, we offer a more unitary view of this indefinite. We are also in line with numerous studies having assumed that anchoring in a particular situation is a general requirement for the existential *un/des*. For instance, Dobrovie-Sorin 1997 claimed that *un/des* require "presentational predicates" to be acceptable in subject and object position.

(ii) Equative sentences. Secondly, while Beyssade and Dobrovie-Sorin assume like other authors that sentences of the type "NP est un N" are predicational, we suggest below that these sentences are true equatives, and as such assert the identity between the denotation of the subject and the denotation of the post-copular NP. *Mary is Dr Smith* is a paradigmatical example of equative sentences

making an identity statement.[6] Among authors recognizing the existence of true equative copular sentences, some of them (e.g. Heycock and Kroch, 1997) keep the semantics of the copula uniform and assign different types of small clauses to predicational and equative copular sentences. Others capture the difference in positing an ambiguous copula, the equative sentences being built with a 'BE of identity'. This is the option taken by Heller 1999, who provides empirical evidence in Hebrew for positing two different *be*. Here, we will also derive equation semantics by using a *be* of identity, but we believe that our account could also be translated in an account *à la* Heycock and Kroch, where the copula is taken to be unambiguous.

In sum, sentences like "NP est un N" are analysed here as asserting the identity between two individuals, the second one being anchored in a particular situation. (34) summarizes this view ($N_{in\ s}$ symbolises the property *N* relativised to the situation *s*). The specific reading of the indefinite is translated with the help of choice functions. Let us *f* be a choice function (among others):

(34) a.   Le boulanger est un manager !
            The baker is a manager!
     b.   [The baker]: $\iota\ x$ Baker(x)
     c.   [be]: '='
     d.   [a manager]: $f(\text{Manager}_{in\ s})$
     e.   [The baker is a manager]= $\iota\ x$ Baker(x) = $f(\text{Manager}_{in\ s})$

It is worth noting that in English, due to the lack of a/bare alternation in predicative position, sentences like *John is a teacher* (in English!) have been generally classified as predicational. Our (maybe somewhat provocative) claim is that in French, the two variants correspond to predicative sentences (variants selected with bare nouns) and equative ones, the latter being selected with the indefinite version.

Besides the number of predictions that this analysis derives despite its apparent unorthodox character, one of the arguments for adopting the equative analysis comes from the impossibility of having the pronouns *il/elle* 'he/she' in the subject position, a robust fact which has often been acknowledged in previous literature (Kupferman 1979; Laca and Tasmowski, 1994; Dobrovie-Sorin and Beyssade 2005 a.o.). Generally, this fact is explained with the generalization that *ce* is specialized for expressing set membership[7].

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[6] Following e.g. Higgins 1973, we discriminate between true equative sentences (or identity sentences) and specificational ones. One argument in favor of maintaining the difference is that the subject of the first is referential, which the one of the latter is non-referential (see e.g. Mikkelsen 2002). On the contrary, Heycock and Kroch consider that equative sentences are specificational.
[7] Recall that most of these theories consider that *un NP* leads to classificatory predication.

(35) #Il est un médecin
       He is a doctor

We suggest that the problem of (35) comes from a pragmatical constraint we propose to attach to equative sentences, namely that the discourse referents of the two identified NPs must roughly have the same "discursive weight". In the canonical true equative sentences (*Mary is Doctor Smith*), they are supposed to be both known to the hearer (Zamparelli 2000). In the sentences under study here, they both must introduce a new individual. Being an anaphorical pronoun, *il* is 'discursively too heavy' for its discourse referent to be equate with the one of the indefinite in an equative sentence. Remarkably, as we will see below, other pronouns like *je* 'I' and *tu* 'you' are perfectly acceptable in sentences like (35), which is unsurprising given our claim: since they are deictic pronouns, they can introduce new individuals in the discourse and have the same discursive weight as indefinites.

Before showing how the analysis accounts for the distribution of the indefinite in predicative position and the differences with the corresponding bare noun version (section 3.3.4), we review the main interpretations attributed to predicative sentences built with *un N* (section 3.3.2), and show that the contrast we assume between *N* and *un N* is independently displayed in other constructions (section 3.3.3).

3.3.2 Two different interpretations

A sentence like (36) has been said to make two different kinds of ascriptions.

(36) Pierre est un enseignant
       Pierre is a teacher

Under the first reading, (36) is said to make an 'identificational statement' (Van Peteghem 1993, Roy 2006): it identifies an individual, typically as an answer to a *wh*-question: *qui est Pierre*? (*Who is Peter?*). Identificational statements are felt as expressing definitory properties. If one presents Peter as a teacher, it means that Peter is a teacher. Note that equative sentences are precisely supposed to make 'identificational statements'.

Under the second reading, corresponding to the 'metaphorical reading' or to the 'evaluative' one, (36) attributes what is considered to be a temporary property (Strohmeyer 1907, Van Peteghem 1993). (36) can then be used in a context where Pierre is behaving *on one occasion* like a teacher but is not one by profession. This is also the kind of metaphorical reading that makes sentences like (1c') felicitous.

These two readings have either been treated apart or the second have been reduced to the first. Some authors (e.g. Beyssade and Dobrovie-Sorin 2005) have in fact argued that the first reading corresponds to (i) the expression of set membership and (ii) to the ascription of a definitory property. They have treated the second set of readings (metaphorical and evaluative) as marginal. Other authors have stated that the *un N* expresses set membership under no matter which of these two readings (e.g. de Swart *et al.* 2007). In what follows, we argue that the metaphorical and evaluative readings are to be taken seriously and propose a unitary view of the identificational and metaphorical/evaluative interpretations.

Before going to the theoretical side, it might be useful to come back to the empirical description of these two interpretations, which is to our view not entirely complete. Firstly, it has been left unnoticed that a sentence like (36) is the *marked* one compared to its bare version. In fact, native subjects are often reluctant to attribute themselves (36) out of the blue. This dispreference is left unexplained by previous accounts. On the contrary, it is expected if these sentences are equative ones, since equatives often require a special context to be uttered felicitously (cf. Zamparelli 2000, Mikkelsen 2002). Another important fact which deserves more attention is that it is not true that (36) is felt as acceptable in *any* description of a definitory property. What is crucial is precisely filled (although accidentally) by the *who*-test, namely that the (identificational) statement is a *presentational* one: the individual is introduced *for the first time* under the guise offered by the noun *in a specific situation*. This is very often this kind of presentational contexts that native speakers evoke to make a sentence like (36) perfectly natural. Another context often evoked is a "justificational" one, where, typically, the speaker feels obliged to reintroduce himself under the relevant guise to the addressee which acts as if he ignores it (*Dites! Je suis un enseignant moi chère amie!* 'What do you think?! I'm a teacher, dear friend!'). Crucially again, this context anchors the predication in a particular situation, and presents the individual as newly introduced under this guise (since the hearer feigns to ignore it).

We claim that the two acknowledged readings correspond to two different ways to satisfy the situation dependence of *un N* (cf. (33)): in the presentational reading, the presentational game provides the needed situation (*x* is equated with *y* in a particular situation, namely the presentation), and in the metaphorical or evaluative reading, it is provided by the behaviour witnessed by the speaker and underlying his metaphor or evaluation (*x* is equated with *y* in a particular situation, namely the one displayed by *x*).

3.3.3 *un/des N* versus *N* in other constructions

There are at least two other constructions where *un N* and its plural version *des N* alternate with *N* in French, namely averbal sentences and appositives. A first

relevant observation is that the indefinite is compulsory in *exclamative* averbal sentences, while it is generally optional in *assertive* ones:

(37) Oh! Une maison avec jardin!   Oh! Des caisses!
      Oh! A house with garden!   Oh! 'des' boxes!
(38) #Oh! Maison avec jardin!   #Oh! Caisses!
      Oh! House with garden!   Oh! Boxes!
(39) Nous prîmes la rue à gauche. Une maison avec jardin/ Des maisons partout
      We took the street to the left. A house with garden/'des' houses   everywhere
(40) Nous prîmes la rue à gauche. Maison avec jardin/ Maisons partout
      We took the street to the left. House with garden/Houses everywhere

Exclamative averbal sentences provide exactly the context required by *un N/des N*: they are used to introduce individuals (under a new guise *N*) anchored in a new situation. The acceptability of (37) is thus not surprising, since the job of *un N/des N* is to introduce individuals in such contexts. On the other hand, (38) is out because the bare noun only predicate a property of an individual and thus cannot be used by itself as an individual-introducer.[8]

Assertive averbal sentences can also be used to introduce individuals. This is what happens when they are understood as a perception report of an implicit observer describing what he has in front of him, as in (39). But as they do not have a deictic value as exclamatives, assertive averbal sentences can also be used to qualify individuals without introducing them, cf. (40). This pure descriptive use is not felicitous with *un/des N*, as illustrated by the contrast below:

(41) [written on a box] Lampe(s)
(42) [same context] #Une lampe/#Des lampes

     Describing the content of a box with *un N/des N* as in (42) triggers a weird discursive effect: what should be a pure description of the box content is oddly presented as a perception report of somebody describing is in front of him. *Appositives* display the same kind of contrast:

(43) [in a newspaper] Pierre Dargaud, un avocat fiscaliste, déclare avoir vu le suspect prendre l'ascenseur à minuit.
      Pierre Dargaud, a penal lawyer, declared having seen the suspect taking theelevator at midnight.

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[8] Note that this is in line with the hypothesis of Beyssade and Dobrovie-Sorin 2005, as well as the one of van Geenhoven 1998 and McNally & van Geenhoven 1997 according to which bare indefinites only predicate a property of an individual which is existentially quantified by the verb itself.

(44) [in a internal report of a company employing P. Dargaud for a long time]
#Pierre Dargaud, un avocat fiscaliste, prend en charge les prochains dossiers liés au projet A. 17.
Pierre Dargaud, a penal lawyer, takes care of the next dossiers linked to the project A. 17

Un N is fine in (43) because the indefinite is naturally used as an individual introducer. But this use is inappropriate in a context as (44) where the existence of the individual is already taken for granted by any reader of the report; only its qualification under a certain guise is relevant.

3.3.4 *un N* in predicative constructions

Let us see now what are the predictions of the analysis with regard to *être un N* constructions. The first one is that *un N* requires to be acceptable that the indefinite is anchored in a particular situation. Our predictions are the following.

(i) Anchoring the indefinite. They are at least five ways to anchor the indefinite, respectively illustrated by the following examples:

(45) Bonjour, je m'appelle Pierre Dargaud. Je suis un avocat fiscaliste
Hello, my name is Pierre Dargaud. I'm a penal lawyer
(46) Mais! Pierre un médecin!
But Pierre is a doctor!
(47) Dans cette scène, Pierre est un médecin.
In this scene, Pierre is a doctor
(48) Pierre est un assassin
Pierre is a murderer
(49) Jean est un avocat qui travaille dans le troisième arrondissement (= (10))
Jean is a lawyer who works in the 13th urban district

In (45), the situation is provided by the presentational context. In (46) where the construction has its metaphorical reading (it is typically uttered about an addressee which is not a status of doctor), the situation is provided by the doctor-like behaviour of Pierre. Note that in analyzing (46) as meaning *Pierre equates a doctor in a particular situation*, we can account for the fact that there is no entailment from (46) to the proposition Doctor(Pierre). Indeed, there is no entailment from (50a) (our logical form of (46)) to (50b), since there is no entailment between "be a doctor in a particular situation" and "be a doctor". For an individual x:

(50) a. $Pierre(x) = f(Doctor_{in\ s})$
b. $Pierre(x)$ & $Doctor(Pierre)$

In (47), the needed situation is provided by the frame-setting modifier (as defined by Maienborn 2001). In (48), the meaning of noun itself provides the required situation: necessarily, being a murderer is being a murderer in a particular situation. Indeed, the ascription of the property denoted by *assassin* is felicitous only in cases where a murder has effectively occurred, i.e. if there is a situation (of murder) that justifies the ascription of the relevant property.

Finally, in (49), the situational anchoring is ensured by the modifiers. If the *un N* version is better with such modifiers, it is because they precisely help to fulfil the situation dependence of the indefinite version[9].

(ii) Short-term/long-term properties. A second good prediction of the analysis is that *un N* will not be felicitous when an adverbial makes clear that the property denoted by N is a permanent one, and when no element allows to relativize this property to a situation. For instance, (51) is clearly unacceptable, except if a frame-setting modifier like *sur scène* 'on scene' is implicitly interpreted ((50) then means that I play the role of an computer specialist on scene since 50 years --- but no long-term property is then predicated of me anymore). This constraint is also at play in appositives, cf. (52) (compared to (43)):

(51)   #Je suis un informaticien depuis 50 ans.
       I'm a computer specialist since 50 years.
(52)   #Pierre Dargaud, un avocat pénaliste depuis 30 ans, a déclaré avoir vu le suspect prendre l'ascenseur.
       Pierre Dargaud, a penal lawyer since 30 years, declared having seen the suspect taking the elevator.

A related prediction is that *un* will be compulsory when N denotes a short-term property. For instance, (54) is unacceptable, except on the marked reading where being a lawyer passing through Paris is reinterpreted as a permanent property (see also example (32) above):

(53)   Pierre est un avocat de passage à Paris.
       Pierre is a lawyer visiting Paris

(54)   #Pierre est avocat de passage à Paris
       Pierre is ∅ lawyer visiting Paris

(iii) *Ce* constructions. *Ce* constructions have been largely discussed by Kupferman 1979, Cadiot 1988, Carlier 1996. They work particularly well with *un*

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[9] It can also be that the as what commonly happens elsewhere, the modifiers help the indefinite to get the specific reading, which is the reading needed for the sentence to equate two (specific) individuals. For instance, such modifiers also help the indefinite to get wide scope in an *if*-clause, cf. e.g. Geurts 2005.

N in predicative constructions (cf. (55)), and this preference should be accounted for.

(55)   Pierre, c'est un ange.
        Pierre, *ce* is an angel.

All quoted authors note that *ce* tends to "desindividualize" the individual. Carlier suggests that it "dereferentializes" it. Cadiot claims that it "does not exactly refers to its antecedent, but, exactly, to what the speaker does with it. It treats the object not as a 'real thing', individualized, autonomous, but like a support for his own experience" (pp. 177-178, our translation).

One way to capture this effect without giving up the traditional claim that *ce* is a referential expression is to assume that *ce* refers to individuals only as *ingredients of situation,* entities that we could call "thetic individuals". In other words, the individual referred to is reduced to a simple component of a larger situation.

Let us now see how *ce* distributes with *un N* through the following minimal pairs. Note that the acceptability of (56) incidentally argues against previous accounts like Beyssade and Dobrovie-Sorin 2005, which predict this example as unacceptable, assuming that *ce* perfectly correlates with the indefinite version:

(56)   Pierre, c'est une femme.
        Pierre, 'ce' is a woman
(57)   *Ces talons aiguilles, c'est une femme.
        These spike heels, 'ce' is a woman.
(58)   *Pierre, c'est femme.
        Pierre, 'ce' is ∅ woman
(59)   Ces talons aiguilles, c'est femme.
        These spike heels, 'ce' is ∅ woman

According to the proposed analysis, (56) asserts that an identity between two individuals, the first one being Pierre and referred to by *ce* in the context of utterance and the second one being introduced by *une femme*. As *ce* forces by itself to view the individual as a part of a situation (cf. above), it fulfils the situational requirement imposed by *un N*. The fact that (56) does not require special contexts as before to be acceptable (presentational contexts, justificational ones, metaphorical reading, modifiers etc.) is thus explained, as well as, more generally, the fact that *ce* constructions suit well *un N* in predicative position. The unacceptability of (57) is also easily accounted for, since there is no way to identify a pair of spike heels with a woman.
        On the contrary, (59) is accepted since it asserts a permanent property of an aspect of kneels (e.g. their appearance). Finally, (58) is impossible since it is very

difficult to recover the existence of a permanent property of Pierre only conceived as an ingredient of a particular situation.

(iv) Pronominal subjects. As already mentioned, *un N* in predicative position is especially bad when the pronouns *il/elle* 'he/she' are in subject position. This is true even in the particular contexts normally increasing the acceptability of *un N*. Quite intriguingly, the other personal pronouns *je* 'I' and *tu* 'you' do not raise this additional problem, and *il/elle* are fine with a post-copular definite description, cf. (62).

(60)　#Il est un avocat
　　　He is a lawyer
(61)　Je suis/ tu es un avocat
　　　I am/ you are a lawyer
(62)　Il est l'avocat
　　　He is the lawyer
(63)　Pierre est un avocat !
　　　Pierre is a lawyer

As already suggested in section 3.3.1, we propose to account for this distribution in positing that the two NPs of equative sentences must roughly have the same discursive weight. This is straightforwardly the case for paradigmatical equative sentences like *Hesperus is Phosphorus*. Being deictic expressions, *ce*, *je* and *tu* introduce new individuals like indefinites. The constraint is then respected. Being anaphorical expressions, *il/elle* present their referents as known by the hearer. As the indefinite introduces a new individual, the equation cannot go through while respecting the proposed pragmatical rule. But (62) is fine as an equative sentence because it identifies two referents which are known to the hearer. However, definite descriptions arguably *can* also be used to introduce a new individual. Indeed, some authors have independently suggested that the Condition of Familiarity normally attached to definite descriptions can be suspended (cf. e.g. Kleiber 1981:226, Poesio 1994). As they are also able to introduce a new individual, they are thus fine too in subject position with *un N* in post-copular position. Finally, if (63) is fine, it is because proper names can also be used to describe individuals not known to the hearer: it can be that the hearer of (63) only knows the name *Jean*, but not its referent, and proper names are often used in presentational contexts where the individual is introduced to the hearer for the first time (Corblin 2005).

(v) The distribution of 'personne' (nobody). As often noticed, 'personne' cannot be used with the indefinite variant (see Roy 2006). Out account straightforwardly explains this by the fact that 'personne' is not referential (see e.g. Tasmowski and Verluyten 1982), and thus cannot provide an entity for the equation to go through.

(64) a.   Personne n'est avocat
             Nobody is ∅ lawyer
      b.   *Personne n'est un avocat
             Nobody is a lawyer

4. Conclusions and remaining problems

In this paper, we have argued that the bare/indefinite alternation in predicative position corresponds to two different kind of sentences: the bare version induces a predicational interpretation, whereas the indefinite version triggers an equative one. In delineating more precisely the difference between bare nouns and indefinites *un N*, it contributes to a more fine-grained typology of weak indefinites (since bare nouns and NPs built with a weak determiner are often treated on a par).

Besides introducing equative sentences, our analysis of the indefinite version heavily relies on two requirements, the first being classically attached to indefinites: the Novelty Condition and the anchoring to a situation. The analysis of the bare version, on the other hand, reinterprets in a new light the role of hidden material, already used in de Swart *et al.* 2007.

Some problems remain though. The first one is that traditionally, equative sentences are supposed to allow the permutation of the two NPs (*Dr Smith is Mary* is as fine as *Mary is Dr Smith*). However, this is not the case with sentences of the type "NP est un N", cf. (65). The only way to recover the full acceptability is to introduce a modal verb like *pouvoir* 'can' or *devoir* 'must', cf. (66).

(65) #Un avocat du troisième arrondissement est Pierre.
      A lawyer of the third district is Pierre
(66) Un avocat du troisième arrondissement peut/doit être Pierre.
      A lawyer of the third district can/must be Pierre

However, we do not believe that the unacceptability of sentences like (65) completely undermines the equative analysis. It can well be that even if they have the same discursive weight, the two NPs still differ pragmatically in other respects, and that indefinite NPs cannot fulfill the pragmatic properties attached to the subject of equative sentences. These properties remain to be investigated though for the account to be complete.

Another intriguing set of data which could at first sight cast some doubt on the proposed analysis is illustrated by the contrast (67)-(69) below. Note that *avocate* is the feminine version of *avocat*. As shown in (67), it can be used when applied to women, although the masculine version is also commonly used in this case:

(67)   Jeanne est avocate (OK avocat)
       Jeanne is lawyer-FEM. (lawyer-MASC.)
(68)   La profession de Jeanne est avocat.
       The profession of Jeanne is lawyer-MASC.
(69)   #La profession de Pierre est avocate
       The profession of Jeanne is lawyer-FEM.

Why is the feminine version suddenly unavailable when the subject explicitly refers to the trope, if, as we suggest, (68) is a paraphrase of (67)? Interestingly, this contrast only displays with nouns of profession. For instance, with a noun like *adolescent*, the feminine is compulsory with a (feminine) subject overtly denoting a trope, as well as with a subject denoting an individual:

(70)   Jeanne est adolescente (*adolescent)
       Jeanne is teenager-FEM. (teenager-MASC.)
(71)   L'attitude de Jeanne est adolescente (*adolescent)
       The attitude of Jeanne is teenager-FEM. (teenager-MASC.)

Our explanation of these facts is the following. Firstly, we assume that the coercion mechanism intervenes *after* the attribution of morphological features. More concretely, *Jeanne* is reinterpreted as *La profession de Jeanne* in (67) only after the morphology feature [+FEM] has been attributed to the bare predicate. This explains why *avocate* is grammatical in (67) (although it is not in (69)). Secondly, we explain the agrammaticality of (69) as follows. The introduction of the feminine version of names of profession in the French lexicon is a relatively new fact. Not so long ago, the masculine version was indifferently applied to men and women. This usage is actually still ongoing, as (67) shows. The proposed idea is that the feminine version of names of professions is too recent to be productive enough to apply to other types of entities than the ones for which they were created, namely persons. In other words, the unacceptability of (69) is a sign that the feminine version of French profession names is not yet part of a fully productive French. On the other hand, the feminine version of names as *adolescent* existing since a very long time, it can apply to any type of entities without any difficulty.

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Alda Mari
Jean Nicod Institute/ CNRS / ENS / EHESS
ENS – Pavillon Jardin
29, rue d'Ulm
75005 Paris – France

alda.mari@ens.fr

Fabienne Martin
Department of Linguistics/Romance Languages
University of Stuttgart
Heilbronner Str. 7
70174 Stuttgart – Germany

fabienne.martin@ling.uni-stuttgart.de

The Semantics of Eventive Suffixes in French[*]

Fabienne Martin

University of Stuttgart

This paper examines the properties of three of the suffixes available to create eventive deverbal nouns in French, namely *-age*, *-ment* and *-ion.* The explored hypothesis is that these suffixes have an abstract semantical and aspectual value which contributes to explain why verbs select different suffixes in the operation of nominalisation, as well as the semantical differences between two nominalisations derived from the same verbal base with different suffixes.

1. Introduction

Eventive deverbal nouns (henceforth EDNs) can be formed with at least three suffixes in French, namely *-age*, *-ment* and *-ion*. The goal of this paper is to explain the distribution of these three suffixes among EDNs in contemporary French. Classically, it is generally taken for granted that there is nothing to be explained to begin with. Indeed, one often assumes that the distribution of these suffixes cannot be motivated in synchrony, since the nouns in which they enter have often been copied from the Latin ones. Therefore, the argument goes, if the distribution of the suffixes depends on the semantics of the verbal bases, it is on the Latin ones.

However, this "null" hypothesis is not completely satisfactory for several reasons.

The first counter-argument comes from *neologisms*. Very often, native speakers tend to choose the same suffix(es) to form new nouns from new verbs, and this reflects in corpora. For instance, the verb *doper* ('dope', born in 1903 according to *Le Petit Robert*) is nominalised more than 800 times in *-age*, 3 times in *-ment*, and never in *-ion* on Internet.[1] This regularity is left unexplained if one assumes that these suffixes do not have a syntax/semantics guiding the nominalising process. Besides, it is not rare that even when a noun formed with a verbal base *v* and a suffix S_1 already exists in French, subjects create another noun with the same base *v* and another suffix S_2. For instance, while *indignation*

already exists, one quite often finds *indignement* in corpora. One could argue that this kind of neologisms is simply the sign of a certain lexical incompetence, but then, one does not explain why *indignage* is never created.

The second counter-argument comes from *pseudo-nouns*. Pseudo-nouns are built on pseudo-verbs, that is invented, meaningless but morpho-phonologically well-formed French verbs. One observes that subjects tend to have intuitions on the semantical differences between pseudo-nouns built on the same base *v* with different suffixes S_1, S_2...(Dumay & Martin 2008). Let us take for instance the pseudo-verb *toliner*. To the question *"Imagine that the non-existing verb* toliner *describes an action. If you want to describe an action of this type which is not finished, would you rather use* tolinage *or* tolination?*"*, the subjects preferably choose the *-age* EDN. This kind of intuitions can certainly not be explained if the semantic value of these suffixes is empty.

A third counter-argument comes from the *semantical systematicity* taking place between EDNs derived from different suffixes. Often, the semantical relation taking place between nouns built with a suffix S_1 and nouns build with a suffix S_2 is similar from base to base. For instance, the semantical difference we document below between °*miaulage*[2] and *miaulement* (from *miauler* 'meouw') is the same as the one between *secouage* and *secouement* (from *secouer* 'shake'). Again, this cannot be explain if the semantics of these suffixes is supposed to be empty.

The alternative hypothesis explored here is that that these suffixes have an abstract semantical value, which contributes to explain

a) why verbs select different suffixes in the operation of nominalisation, given the additional premisse that the meaning of the verbal stem and the one of the suffix must match
b) the interpretation of existing EDNs, including the semantical differences of two EDNs derived from the same verbal base but with different suffixes
c) the acceptability of neologisms

For this study, two kinds of empirical data have been investigated, namely

a) existing EDNs listed in dictionaries (*Le Petit Robert, Le Littré* and *Le Trésor de la Langue française*),
b) existing EDNs which are present in corpora (e.g. on Internet) but not listed in dictionaries. These EDNs are prefixed with "°".

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[2] The meaning of the symbol ° will be explained below.

The paper is divided as follows. Firstly, I introduce a new indicator for the reading of DNs under study, namely the eventive one (section 2). Secondly, I present the results of an inquiry on the impact that the aspectual category of the verbal base might have on the choice of the suffixes. Basically, the results are pessimistic: no clear correlation emerges. However, the following sections present data suggesting that other aspectual values of the verbal base play a role here. I address successively the competition between (i) *-age* and *-ment* (section 4), (ii) *-ment* and *-ion* (section 5) and (iii) *-age* and *-ion* (section 6).

2.   Selecting the eventive reading of deverbal nouns

For this preliminary study, DNs built with different suffixes will only be compared on their *eventive* reading. I will not try to differentiate the suffixes by the range of readings they are supposed to yield as in Lüdtke (1978), Heinold (2005) or Uth (this volume). The distribution of the suffixes will not be investigated either on the stative or referential readings of DNs.

Many – if not all – of the tests which are supposed to diagnose the eventive reading of DNs raise serious problems once applied to French. For instance, Roodenburg (2006) shows that contrary to what is predicted by Grimshaw's (1990) analysis, DNs can pluralise on their eventive reading in French:

(1)   Le général a filmé les désamorçages de bombes lourdes par les recrues. (Roodenburg, *id.*)
       The general filmed the disantlements of heavy bombs by young soldiers

Secondly, modifiers like *fréquent* ('frequent') or *constant* ('constant') do not allow to differentiate stative and eventive readings, since they are compatible with nouns clearly denoting states, like *maladie* or *état*:

(2)   C'est une maladie constante du projet républicain: il se retourne contre lui-même. (Internet)
       It is a constant illness of the republican project: it turns against itself
(3)   Le bonheur est un état constant. (Internet)
       Happiness is a constant state

Progressif ('progressive') or *graduel* ('gradual') have also been used as diagnostics of eventivity (cf. e.g. Meinschaefer 2005). However, even if these adjectives are indeed possibly incompatible with stative DNs, they also reject DNs like *effarement* ('bemusement') which have an eventive reading, but denote an event which is so quick that it is not easy to emphasize its development, as it is arguably required by these two modifiers, cf. (3).

(3)   #L'effarement progressif de Pierre
       The progressive bemusement of Pierre

Given the confusion that might be caused by the use of these tests, I propose to introduce another construction as a diagnostic of eventivity, namely the predicate *assister à* ('to witness'/'to attend'). Contrary to the perception verb *voir* ('see') which imposes much less restrictions on its object, the verb *assister à* robustly rejects objects denoting individuals, states or facts and exclusively selects events:

(4)   *J'ai assisté au livre.
        I witnessed the book
(5)   ??J'ai assisté au fait qu'il était parti.
        I witnessed the fact that he was gone
(6)   ??J'ai assisté à son état.
        I witnessed his state

Besides, contrary to *progressif* or *graduel*, it accepts any kind of eventive DNs, including the ones like *effarement* denoting a very short event:

(7)   J'ai assisté à l'effarement de Pierre.
        I witnessed the bemusement of Pierre

In line with traditional analyses of perception reports (e.g. Vlach 1983), I will assume that the DN denotes the event which has to be witnessed for the sentence to be true, and only this event. For instance, according to this principle, *soins* ('treatment') only denotes the action of the doctor, cf. (8), while *guérison* ('curing') only denotes the change of state of the patient, cf. (9):

(8)   J'ai assisté aux soins.
        I witnessed the treatment
(9)   J'ai assisté à la guérison.
        I witnessed the curing

If we assume, besides, that modifiers are predicates of the event denoted by the DN, we generally point to the same conclusion with regard to the denotation of the DN. For instance, for (10) to be true, the action of the doctor only has to be quick (the curing itself can be slow), and for (11) to be true, the change of state of the Patient only has to verify this property (the treatment itself can be slow):

(10) Des soins rapides ont eu lieu.
        A quick treatment occurred
(11) Une guérison rapide a eu lieu.
        A quick curing occurred

In the next section, I show that there is no clear correlation between the distribution of the suffixes in EDNs and the (a)telicity of it verbal base.

3.   No impact of the (a)telicity of the verb on the choice of the suffix

A robust difference between eventive suffixes under study is that they do not manifest the same preferences for determiners. For instance, while mass DPs built with *du*, *de la* or *des* (French equivalents of bare nouns) are very frequent with *-age*, they are comparatively much less common with *-ment*:

(12)   C'est du déchiffr**age**.   (434 occurrences on Internet)
           It is 'du' deciphering
(13)   C'est du déchiffre**ment**.   (2 occurrences on Internet)
(14)   C'est 'du' gribouill**age**   (930 occurrences on Internet)
           It is du scribbling
(15)   ?C'est du gribouille**ment**.   (0 occurrence on Internet)
           It is 'du' scribbling

        This fact certainly underlies the intuition that *-age* EDNs are "more massive". Let us combine this observation with an old hypothesis of Mourelatos (1978), namely that count nouns are derived from telic verbs, while mass nouns are derived from atelic ones. The prediction which naturally follows from this combination is that the (a)telicity of the verbal base may partly play a role in the choice of the suffix. For instance, if Mourelatos is right, given that *-age* DNs are more frequent with mass nouns, we would expect that *-age* DNs will preferably be derived from atelic verbs.

        To check whether the (a)telicity of the verb can indeed partly drive the choice of the eventive suffix, I tested 300 causative psychological verbs with regard to this aspectual value. For this test, I always selected the same kind of object, namely a bounded one ([+SQA] in the terminology of Verkuyl 1972).[3] For instance, according to the traditional adverbial tests, *embêter* ('to tease') has the atelic reading only, cf. (16), while *séduire* ('to seduce') has an atelic or a telic reading, cf. (17):

(16)   J'ai embêté Pierre #en dix minutes/pendant dix minutes.
           I teased Pierre in ten minutes/for ten minutes
(17)   J'ai séduit Pierre en dix minutes/pendant dix minutes.
           I seduced Pierre in ten minutes/for ten minutes

To each of these verbs were associated

a)   The existent DN(s) (e.g. *emballement* 'enthusiasm' for the psych-verb *emballer*, 'to thrill')
b)   The available (telic and/or atelic) reading(s) (tested with a [+SQA] object)

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[3] With a non-bounded object, the yielded VP would invariably be atelic.

c) The other meaning(s) this verb might have (e.g. the physical verb *emballer* 'to wrap' was linked to the psych-verb *emballer*) and, again, the available telic/atelic reading for this new sense[4]

d) The available DN(s) for the other sense(s) (e.g. *emballage* 'wrapping' was linked to the physical verb *emballer*)

The results of the inquiry are summarised in Table 1 (a fourth suffix *–erie* was also taken into account for the inquiry). I gave the results for atelic *and* telic readings because for some verbs, none of the two is acceptable. The number of DNs containing a certain suffix is put in parenthesis. As the same verb may have different aspectual value on its different readings, the DN is counted twice if it nominalises two different readings.

	-ment (194)	*-ion* (146)	*-age* (49)	*-erie* (16)
Telic r. of the verb OK	48,2%(95)	56,8%(83)	59,1(29)	31,2(5)
Atelic r. of the verb OK	70,5%(139)	71,6%(104)	77,5%(39)	93,7%(15)
No telic r. for the verb	50,2%(99)	41%(60)	36,7%(18)	62,5%(10)
No atelic r. for the verb	23,8%(47)	21,9%(32)	18,3%(9)	6,2%(1)

Table 1

As one can see, no clear correlation emerges between the choice of the suffixes and the aspectual value of the verbal base. The results then indirectly falsify the Mourelatos hypothesis. The *-erie* suffix is the only one to exhibit a clearly different pattern, but the number of corresponding nominalisations is so low that some cautiousness seems in order here.[5] Note that according to A. Fabregas (p.c.), the (a)telicity of the verbal stem seems irrelevant for the choice of the suffix in Spanish too.

These negative results are not very surprising in view of the fact that quite a few verbs have inverse aspectual values under two different readings, but nominalise the same way:

(18) L'éponge a absorbé la flaque en/??pendant dix minutes. (>absorpt**ion**)
The sponge absorbed the puddle in/for ten minutes

(19) Pierre m'a absorbé ??en/pendant dix minutes. (>absorpt**ion**)
Pierre absorbed me in/for ten minutes

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[4] "Other" meanings should not be interpreted as "derived" or "secondary" meanings. In the case of psych-verbs, the physical reading is of course very often the first one (of which the psychological reading is derived).

[5] Note that a finer typology of atelic readings may change the results; for the test, no distinction was made between the case where the durative adverbial scopes over the event and the one where it scopes over the resultant state.

However, we will see in the following sections that other aspectual values of the verbal stem play a role in the distribution of suffixes.

4. *-age* versus *-ment*

4.1 Two previous claims

Two previous claims have been made about the rivalry between the suffixes *-age* and *-ment*. According to Dubois (1962) and Dubois & Dubois-Charlier (1999), *-age* is selected by transitive verbs, and *-ment* by intransitive ones. Verbs like *siffler* ('whistle', 'blow') or *froisser* ('crease') confirm this generalisation, since they nominalise with *-age* on their transitive reading and with *-ment* on their intransitive one:

(20) L'arbitre a sifflé le joueur.   >   Le siffl**age**/#le siffle**ment** du joueur par
       l'arbitre
     The referee blow the player   The blowing of the player by the referee
(21) Pierre siffle en travaillant.   >   Le siffle**ment**/#le siffl**age** de Pierre
     Pierre whistled while working   The whistling of Pierre
(22) J'ai froissé ma jupe.   >   Le froiss**age** de la jupe
     I creased my skirt   The creasing of my skirt

However, this rule also suffers counter-examples. Firstly, some transitive verbs can nominalise in *-ment*, cf. (23):

(23) J'ai froissé ma jupe   >   Le froiss**ement** de la jupe
     I creased my skirt   The creasing of my skirt

Sometimes, they even must do so. For instance, on its psychological transitive reading, *froisser* 'offend/bruise' cannot nominalise in *-age*, but only in *-ment*. Secondly, some intransitive verbs cannot nominalise in *-ment* (cf. *arriver*, 'to arrive' > *arrivage,* 'arrival/delivery'; ??*arrivement* does not exist anymore) or select both suffixes (cf. *miauler*, 'to meouw' > °*miaulage*, *miaulement* 'meouwing').

Kelling (2004) admits that *-ment* can be selected by transitive verbs. However, according to her, the two suffixes still differ then in that *-age* is supposed to be selected when the subject of the transitive verb is an Agent, while *-ment* is selected in other cases:

(24) *x* a gonflé *y*
     x inflated *y*
     If *x* is an Agent: >   le gonfl**age** de *y*
                                        The inflating of *y*

If *x* is not an Agent: >   le gonfle**ment** de *y*
                                   The inflating of *y*

But this generalisation also suffers counter-examples. As already noted by Heinold (2005), transitive verbs can nominalise in *-ment* even when the context indicates that the subject is clearly agentive. In fact, I would add that they even sometimes *prefer -ment* to *-age*, as in this example:

(25)   Le gonflement/?le gonflage des chiffres par certaines sociétés. (Heinold, *id.*)
       The inflating of figures by certain companies

4.2   A multi-feature analysis

Given these counter-examples to the two previous claims, I will here admit that in principle, *-ment* and *-age* can both nominalise transitive or intransitive verbs. But the preferences observed by the authors are certainly correct, and should be captured by the analysis as well as their exceptions. However, these exceptions also suggest that it is hopeless to try to capture the difference between two kinds of nominalisations by one feature only.

In what follows, I distinguish *-ment* and corresponding *-age* EDNs by four properties P_1, P_2, P_3 and P_4. In the *paradigmatical* case (arguably the one targeted by previous authors), the two competing nouns derived from the same base differ from each other by each of these four properties. However, in some cases, the verbal base itself "neutralises" some of these properties, because its semantics does not allow to exploit it (see below). In this case, the other properties still allow to differentiate the two competing EDNs.

This analysis presupposes a more fine-grained classification of verbal bases than in previous work, because one should be able to identify the "active" or "neutralised" properties in the nominalisation process. In sum, the relevant properties concern (i) the length of the denoted eventive chain (section 4.2.1), (ii) the degree of agentivity of the subject (section 4.2.2), (iii) the incremental relation between the event and the Theme (section 4.2.3), and (iv) the ontological domain to which the denoted eventive chain pertains (section 4.2.4).

4.2.1 Property P_1: length of the eventive chain

The first relevant property concerns the mereological relation between the two events e_{ment} and e_{age} respectively denoted by an *-ment* EDN and the corresponding *-age* EDN. This property is 'active' with verbal bases which present a certain type of semantical underspecification, namely bases which can denote longer or shorter eventive chains. Firstly, this is the case of verbal bases of which are derived verbs enduring the causative/inchoative alternation. At least, these bases are assumed to

be underspecified in the "Y-model" proposed by Piñón (2001a), where both the transitive and intransitive version of causative/inchoative verbs are derived from a same (underspecified) base, itself being derived from the adjective (see Figure 1 below). Piñón offers a lot of cross-linguistical empirical arguments showing that this model is to be preferred to the alternative ones, where the causative verb is supposed to be derived from the inchoative one (traditional model), or the inchoative one from the causative one (Levin & Rappaport 1994's model).

$$\text{Adj. } \text{-------->} V_{stem} \begin{cases} V_{caus\text{-}incho} \\ V_{incho} \end{cases}$$
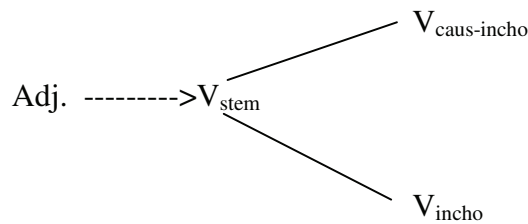
Figure 1: the Y-model

Secondly, it is also the case of bases from which are derived transitive (ex: *shake*) or intransitive (ex: *meouw*) verbs which can either denote a single event or an iteration of it.

I propose that with underspecified bases of this kind, *-age* selects the longer reading, while *-ment* selects the shorter one.[6] Basically, with these bases, e_{ment} is always a (proper) subpart of e_{age} ($e_{age} \supset e_{ment}$). Let us first examine the case of causative/inchoative bases.

Causative/inchoative verbal bases. With verbs enduring the causative/inchoative alternation, the witness test presented above allows to show that while *-age* EDNs denote the full causation, the corresponding *-ment* ones denote the change of state of the object only:

(26) Pierre a assisté au gonfl**age** des ballons.
Pierre witnessed the inflating of the balloons
>*Pierre witnessed the whole causation*

(27) Pierre a assisté au gonfle**ment** des ballons.
Pierre witnessed the inflation of the balloons
>*Pierre witnessed the change of state only*

e_{ment} is then clearly a subpart of the corresponding $e_{age.}$ Recall however that as already noted above (cf. (25)), *-ment* EDNs can be used with a *par*-phrase denoting the Agent. In this case, the whole causation must be denoted by the

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[6] Funnily, at least two of the informants to which I present some of the relevant *-ment/-age* pairs seem to justify "phonologically" their choice in saying that *"-aaaaaage* is longer". Maybe some iconic effect between semantics and phonology is at play here (either *–age* has a better phonology to denote longer events, or subjects perceive *–age* nominals as denoting longer events and try to justify their intuition phonologically).

Noun Phrase, exactly as with *-age* EDNs. This is confirmed by the *witness* test; while in (27), Pierre only witnessed the change of state, in (28), he has to attend the whole causation:

(28) Pierre a assisté au gonfle**ment** des ballons par X.
Pierre witnessed the inflation of the balloons by X
>*Pierre witnessed the whole causation*

However, even if (26) and (28) have the same truth conditions, they can still differ compositionally. While in (26), the deverbal noun itself is responsible for the denotation of the causing event, in (28), the interpretation of this event results from the composition of the deverbal noun denoting a change of state with the *by*-phrase denoting an Agent of an event causing this change of state. As the *by*-phrase is responsible for the interpretation of the causing event, this event does not have to be interpreted in absence of this adjunct PP.[7]

The fact that with these verbal bases, *-age* EDNs target the causative reading of the base while *-ment* EDNs select the inchoative one accounts for the previously noticed preference of *-age* EDNs (vs *-ment* ones) for transitive verbs (vs intransitive ones).

Verbal bases with an iterative/non-iterative reading. With intransitive verbs like *miauler* ('meouw') and transitive ones like *secouer* ('shake'), the verbal stem can also denote a longer or shorter event in the sense they can denote a single event or an iteration of it. And again, with these bases, *-age* EDNs select the longer reading (the iterative one), while *-ment* ones select the shorter one (the single-event one). For instance, while *miaulement* and *secouement* denote only one production of sound/ one movement, °*miaulage* or *secouage* entail an iteration of them.[8] So again, the relation $e_{age} \cdot e_{ment}$ is verified, although in a

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[7] An interesting parallel can be made with the combination of *durch*-phrases with causative and non-causative changes of state predicates studied by Solstad 2007:

(i) Ein Polizist wurde *durch einen Schuss* aus der eigenen Dienstwaffe getötet. (Solstad, *id.*)
A policeman was killed *by a shot* from his own service weapon
(ii) Ohnesorg starb *durch einen gezielten Schuss*. (*ibid.*)
Ohnesorg died *through an accurate shot*

As Solstad argues, even if we have a causative predicate in (i) and an inchoative one in (ii), it seems that the semantic representation assigned in (i) and (ii) after composition with *durch* would be similar, in the sense that both sentences include a causing event *e* and a specification of this causing event. However, while it is the causative predicate which is responsible for the introduction of the cause component in (i), it is the *durch* phrase which performs this job in (ii).
Of course, the *durch*-phrase differs from our *par*-phrase in that the latter denotes the Agent of the (implicit) cause component, while the latter directly denotes the cause component itself.
[8] According to A. Fabregas (p.c.), Spanish suffixes also differ from each other on this point: *sacudimiento* denotes an iteration of shaking (for example, if the house shakes for a while as an

different way. In favour of this analysis, note that when headed by a noun like *session* which selects the iterative reading, the *-ment* EDNs must bear the plural morphology, which is not the case of the *-age* ones:

(29) Une session de °miaulage/secou**age**
      A shaking/meouwing session
(30) *Une session de miaule**ment**/secoue**ment**
      A shaking/meouwing session

(31) Une session de miaule**ments**/secoue**ments**
      A shaking/meouwing session

      Besides, subjects tend to find (32) more natural than (33):

(32) Plusieurs miaule**ments** (secoue**ments**) font ensemble un °miaulage
      (secou**age**).
      Several meow-**ments** (shake-**ment**) make together a meow-**age**
      (shake-**age**)
(33) ?Plusieurs °miaulage**s** (secou**ages**) font ensemble un miaule**ment**
      (secoue**ment**).
      Several meow-**ages** (shake-**ages**) make together a meow-**ment**
      (shake-**ment**).

      The idea that *-age* has an iterative value with some verbs is not entirely new. It was already proposed by Bally (1965). For Old French, Uth (2007) argues that non-eventive *-age* nouns (more precisely nouns denoting a non-eventive entity) systematically denote *groups* or *kinds* (which are necessarily instantiated by non-singular entity, cf. Chierchia 1998). This suggests that *-age* has this iterative value in eventive *and* non-eventive nouns.

Verbal bases neutralising P_1. As already mentioned, a property differing two competing EDNs can be neutralised with some verbal bases. We will show here that P_1 is neutralised with verbs having a transitive and an intransitive reading (henceforth TIVs), but without enduring the causative/inchoative or iterative/non-iterative alternations. This is for instance the case of *pousser*.

      Recall that among TIVs, *most* of them, like *gonfler* ('inflate') display the causative/inchoative alternation, ie entail a causation on their transitive use, cf. (34), and a change of state on their intransitive one. However, verbs like *pousser* 'push' or *tirer* 'pull' are *not* causative on their transitive use. They only entail an

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effect of an earthquake), and *sacudida* denotes a single instance of shaking (for example, if a bull hits a car only once, that is a *sacudida*). As this example already shows, there is no correspondence between the French *-ment* and the Spanish *-miento*. See Fabregas (2007) for an analysis of affix rivalry in Spanish.

event performed by the subject, but no change of state, cf. (35) (cf. Jackendoff 1990 on *push*, Stein 2007 on *pousser*):

(34) J'ai gonflé le ballon, #mais il n'a pas gonflé
      I inflated the balloon, but it didn't inflate
(35) J'ai poussé la voiture, OK mais elle n'a pas bougé (Stein 2007)
      I pushed the car, but it didn't move

It would be weird to assume that on one of its reading, the verbal stem of these verbs denotes a change of state *e'*, since the verb itself does not entail it. In fact, it is more natural to assume that contrary to *gonfl*-stems, *pouss*-stems univocally denote the event *e* performed by the subject *x*, and never the change of state *e'* (possibly) endured by *y*. Then, once combined with *-ment,* the resulting EDN corresponds naturally to the event *e'* involving *x*. *Poussement* is indeed defined as the "action of pousser" in the dictionary *Le Littré.* As we just saw, this interpretation is available with *gonfler*-verbs when a *par*-phrase is implicited only:

(36) J'ai assisté au pousse**ment**
      >*the event involving* x ***must** be seen*
(37) J'ai assisté au gonfle**ment**
      >*the event involving* x ***can** be seen*

Given the fact that with *pousser*-verbs, bases do not exhibit the relevant underspecification (they do not have a "shorter" or "longer" reading), the *-age* DNs do not denote a longer event as the corresponding *-ment* ones as in the previous case. The property P_1 is then "neutralised". *-ment* EDNs denote the same kind of eventive chain than corresponding *-age* ones.[9]

4.2.2 Property P_2: agentivity

In the previous section, I show that *-age* and *-ment* EDNs can differ by the length of the denoted eventive chain. I will now address one of the other features differentiating the two suffixes, including when the first one is neutralised, as for *pousser*-verbs.

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[9] One could wonder what exactly denote *pousser*-bases and how many of them we have to assume. In fact, it is very likely that *pousser*-bases invariably denote the performance of *x*, *x* corresponding to the subject of the transitive or the intransitive verb. In both readings, this performance can be defined the action of exerting a force in a direction that goes away from *x*. For instance, the event denoted in (38a) can be described as a pressure performed by Pierre away from Pierre, and the one denoted in (38b) as the pressure exerted by the tooth and away from the tooth:

(38) a.   Pierre pousse la table.
            Pierre is pushing the table
      b.   La dent pousse.
            The tooth is growing

The first of them concerns the thematic role of the subject. As already suggested by Kelling (2004), *-age* EDNs are more agentive than *-ment* ones. My claim goes in the same direction, but differs from hers on three points. Firstly, instead of stating that *-ment* EDNs cannot be agentive while *-age* EDN must (which cannot explain the acceptability of (25)), I will assume that while *-age* EDNs must be agentive, *-ment* ones tolerate this reading without imposing it. This first claim is illustrated by the contrast above:

(39) Le décolle**ment** des tuiles par le vent/ par l'ouvrier
The unsticking/removal of the tiles by the wind/by the worker

(40) Le décolla**ge** des tuiles par #le vent/ par l'ouvrier
The unsticking/removing of the tiles by the wind/by the worker

For instance, native speakers accept the *-age* version in (40) only in a context where a fictive intention is attributed to the wind.

Secondly, I will not assume with Kelling that for an EDN to be agentive, it has to attribute the role Agent to the subject, nor that EDNs derived from intransitive verbs cannot be agentive. This would impede us to explain why some unaccusative or unergative verbs like *arriver* or *miauler* nominalise in *-age*. Instead, I will assume that *-age* EDNs are "agentive" in the following way: *the eventive chain **denoted** by an -age EDN must begin with an action, or must have been triggered by an action (**not denoted** by the noun itself)*. So in two words, *-age* says "look for an intention", either inside the denoted eventive chain, or outside it. With verbs like *décoller* (cf. (40)) or *miauler*, this constraint is very simply translated in identifying the event denoted by the EDN itself with the required action. For instance, it explains why (41) is only accepted by native speakers in a magical context where doors intentionally make noise:

(41) Le miaule**ment**/#°miaul**age** d'une porte qui grince
The meouw-ing of a squealing door

In the same way, *poussage* differs from *poussement* in that it suggests that *x* is a real Agent. This explains why *poussage* is often used to describe a (shipping) technique, as this technique 'intrinsically' implies an Agent endowed with intention, while *poussement* is preferred to nominalise the normally non-intentional process denoted by the intransitive reading translated with *grow* in English:

(42) La dent pousse   >   le pousse**ment**/#pouss**age** de la dent
The tooth is growing   >   the growing of the tooth.

But sometimes, the intransitive *pousser* can also be used agentively in the relevant sense:

(43)   Pouss**age** de poils [title of the mail in a forum]. Svp, comment faire pour que les poils poussent sur le torse? (Internet)
Growing of hair. Please, how to proceed for hair to grow on the chest?

Crucially, (43) does not require a personification of the hair to be acceptable. Rather, the choice of *-age* is here justified by the (non default) context where the hair growing process (denoted by the noun) is intentionally triggered upstream through an action. This action is *not* denoted by the noun; as is confirmed by the witness test, cf. (44), but also by the fact that these EDNs nominalising the intransitive reading do not accept a *par*-phrase, cf. (45). This incompatibility is unexpected if the noun itself denotes the action performed by the referent of the *par*-phrase.

(44)   J'ai assisté au pouss**age** de ses poils.
I witnessed the growing of his hair
I do not necessarily witnessed the action causing the growing event
(45)   *Le pouss**age** des poils par X
The growing of the hair by X.

The same way, (41) could also be appropriate in a context where somebody plays with the door in order to provoke its meouwing squealing. And again, the witness test and the distribution of the *by*-phrase suggests that this action cannot be denoted by the noun itself.

The *-age* EDN derived from the intrantive verb *arriver* must also be agentive in our sense. Indeed, contrary to *arrivée*, *arrivage* is "agentive" in that it implies that the change of state e' denoted by *arriver* is caused by an action e (not denoted by the noun). This is the reason why (47) is weird on the *-age* version: contrary to normal assumptions, it suggests that the arrival of meteorites was caused by an action.

(46)   L'arrivée/l'arriv**age** de légumes
The arrival of vegetables
(47)   L'arrivée/#l'arriv**age** de météorites

However, according to the witness test, *arrivage* only denotes a change of state e', just as *gonflement*:

(48)   J'ai assisté à l'arriv**age** des légumes.
I witnessed the arrival of vegetables
>*I witnessed the change of state only*

Besides, data show that the Agent of the action *e* who must have caused *e'* cannot be expressed by a *par*-phrase:

(49) *L'arriv**age** des légumes par les ouvriers
      The arrival of vegetables by the workers

In conclusion, *-age* EDNs are more agentive than *-ment* EDNs not because they impose the role Agent to the subject, but because they systematically signal the existence of an (intentional) action, either at the beginning of the denoted eventive chain, or upstream.

4.2.3 Property P_3: incrementality

An interesting fact which cannot be accounted for by P_1 and P_2 is illustrated by the contrast below, where two different senses of the same verb are used:

(50) Marie a intentionnellement plissé sa jupe   >   Le plisse**ment**/pliss**age** de la jupe

      Marie intentionally pleated her skirt   The pleating of the skirt

(51) Marie a intentionnellement plissé les yeux   >   Le plisse**ment**/ #pliss**age** des yeux

      Marie intentionally squinted her eyes   The squinting of the eyes

If only P_1 and P_2 are taken into account, *plissage* is expected to nominalise (51) as well as (50) (in both cases, the causative reading is selected, and the adverb *intentionally* signals the presence of an intentional action). The contrast (50)–(51) is due to the third relevant property P_3, which has to do with the relation taking place between the denoted event and its Theme. More precisely, the hypothesis is that for *-age* to be acceptable, a (loose) incremental relation has to be conceivable between the event *e* and the Theme *x*: for every (relevant) proper part *y* of the Theme *x*, *y* stands in the relation θ denoted by the verb to some proper part *e'* of *e* (cf. the property (46) of Krifka 1998, called *mapping to subevents*). This relation can easily be satisfied in (50) (every (relevant) part of the skirt can be the Theme of a pleating subevent), but not in (51) (it does not make sense to say that every (relevant) part of the eyes is the Theme of a squinting subevent).[10]

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[10] The relation we need is looser than the Krifkean one (cf. Krifka 1998) because it allows the same part *y* of the Theme *x* to be the Theme of different subevents *e', e''*...of *e*. For instance, VPs like *iron the skirt* satisfy our incremental relation, even if for some parts *e'* and *e''* of the whole ironing *e*, *e'* and *e''* can have the same subpart of the skirt as a Theme (e.g., the same part of the

Note that P_3 is neutralised with Themeless verbs like unergative ones, since these cannot be concerned by the Theme-event relation.

P_3 also accounts for the contrast between (53) (perfectly normal) and (54) (which is very scabrous, even when the intention to injure is taken for granted):

(52) Pierre a écrasé la banane/ le piéton
      Pierre crushed the banana/ ran over the pedestrian
(53) L'écras**age** de la banane
      The crushing of the banana
(54) #L'écras**age** du piéton
      The running over of the pedestrian
(55) OK L'écrase**ment** du piéton
      The running over of the pedestrian

If (54) is scabrous, it is because in order to fulfill P_3, the interpreter has to evoke a scene where to different parts of the subject's action corresponds different parts of the pedestrian, ending up with a bloody scenario.

P_3 also accounts for the fact that sometimes, *-age* EDNs are better with a plural Theme. Indeed, a Theme made of a plurality of entities is an alternative way to satisfy the incremental relation when it cannot be fulfilled with one entity only:[11]

(56) Le °tu**age** des mouches
      The kill-age of the flies
(57) #Le °tu**age** de la mouche
      The kill-age of the fly
(58) L'arriv**age** des légumes/#d'un légume
      The arriv-age of the vegetables/of one vegetable
(59) OK L'arrivée d'un légume
      The arrival of one vegetable

4.2.4 Property P_4: ontological domains

The last property driving the competition between *-ment* and *-age* concerns the ontological domain to which pertains the denoted eventive chain. The proposed

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skirt can be ironed twice).In other words, we admit here that an incremental relation takes place between the event and the Theme even if the property (47) of Krifka 1998 (*uniqueness of events*) is not satisfied.

[11] There are some exceptions to this picture though. For instance, *poussage* used to denote a shipping technique does not seem to require a plural Theme to be acceptable. I do not have an explanation for this.

hypothesis is that *-age* is marked for a specific domain, namely the physical one, while *-ment* is ontologically unmarked.

A first prediction of this hypothesis is that *-age* will not be selected by verbs which do not have a physical reading. This is the case of a subset of psych-verbs, like *penser* 'think', *préoccuper* 'preoccupy', *effrayer* 'to frighten', or *imaginer* 'imagine'. And indeed, the *-age* EDNs of these verbs appear odd to native speakers (cf. *??pensage, ??préoccupage, ??effrayage, ??imaginage*). However, one finds from time to time occurrences of them, but they seem to involve a metaphor: the psychological interaction is depicted as a physical one. For instance, *effrayage* is slightly present in corpora, but it denotes the (physical) event by which one triggers fear on the Experiencer (and, as expected given P_2, this causing event is conceived as an intentional action).

Another prediction of the hypothesis is that when the base is underspecified wrt to the ontological domain of the denoted event (like *gonfler* 'inflate', which can denote a physical event or an abstract one depending on the nature of the Theme), *-age* will select the physical reading, and *-ment* the other ones. This is indeed the case, cf. (60). And again, when an abstract event is denoted with the help of an *-age* EDNs as in (61), a metaphor seems to be involved in the interpretation:

(60) Le gonfle**ment** des prix / le gonfl**age** du ballon
      The inflating of the prices [abstract Theme]/ the inflating of the balloon
      [physical Theme]
(61) Le gonfl**age** des prix (metaphorical)
      The inflating of the prices

P_4 is less coercitive than properties P_1-P_3, since it often seems possible to accommodate it with a metaphorical reading.

5.   *-ment* versus *-ion*

This section is dedicated to the differences between the suffixes *-ment* and *-ion*. The competition between these two suffixes represents a much more difficult area than the previous one, maybe because *-ion* and *-ment* are supposed to be quite unproductive in modern French -- although not totally, while *-age* is very productive, cf. Heinold (2007)[12]. Indeed, the relative difficulty to create

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[12] For instance, in a corpus of the newspaper *Le Monde* extending on several years, Heinold found 65 neologisms in *-age,* 10 in *-ment* and 20 in *-ion.* It should be noted, however, that in less formal corpora, one finds quite often neologisms in *-ment* and *-ion.* Of course, these productions can be analysed as results of lexical incompetence. But then, as already said in the introduction, the question remains of why some neologisms *never* show up in any corpora.

neologisms in -*ion* and -*ment* obliges to play with verbs who actually have the two nominalisations.

Dubois 1962 assumes that -*ment* and -*ion* are synonymous and come from the same syntactical structures. He only notes that two competing nominalisations select different readings of the same verb, the -*ion* ones being "more technical or more recent" (*id*., p.28). In what follows, I will show that there are more systematical differences between -*ion* and -*ment* than suggested in previous literature.

5.1 Property P_1: length of the eventive chain

Roughly, as far as P_1 is concerned, there seem to exist some similarities between -*age* and -*tion* in the way they compete with -*ment*.[13]

Firstly, with bases of causative/inchoative verbs, -*ion* EDNs tend to be underspecified: they can target either the 'longer' or the 'shorter' reading (while, as we saw before, -*ment* selects the shorter one). More precisely, -*ion* can either denote the whole causation, or the change of state only, while -*ment* denotes the change of state, but not the whole causation.[14] This is illustrated here:

(62) L'isole**ment** de la maison
    The house's isolation
        i. the isolated (change of) state of the house
        ii. #the action of isolating the house
(63) L'isolat**ion** de la maison
    The house's isolation
        i. the isolated (change of) state of the house
        ii. the action of isolating the house
(64) Le dénature**ment** de la presse
    The denaturation of the press
        i. the press alters by itself
        ii. #an external event triggers the alteration[15]

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[13] I should add that some of the native speakers I consulted do not have intuitions about the distinctions made in this sub-section, which seems to suggest, as Dubois (*id*.) proposes, that -*ion* and -*ment* tend to be used as synonyms in modern French. However, some other speakers *do* recognise them, and we will see that they also receive some diachronical and syntactical support.

[14] It is interesting to see that this hypothesis is confirmed by some dictionaries, but not all. For instance, *Le Littré* defines *dénivellement* (*deleveling*) as the result of the process denoted by *dénivellation* (*deleveling*). But *Le Trésor de la Langue française* defines *dénivellement* as denoting an action.

[15] Of course, this reading is acceptable for (64) as soon as a *par*-phrase is added (cf. the discussion above about (27)-(28). But the point here is that it is not available in absence of such a PP.

(65) La dénatura**tion** de la presse
    The denaturation of the press
            i. the press alters by itself
            ii. an external event triggers the alteration

With some alternating bases, *-ion* EDNs only access the long reading. This confirms that *-ion* is more 'causation' oriented while *-ment* is more 'result'-oriented. For instance, *finition* 'finishing' cannot denote the change of state only, and must denote an event triggering it upstream. This explains the unacceptability in (67b), since the ending of the autumn cannot be caused by an event of which it would be the Theme.

(66) Le finisse**ment** de l'automne
    The ending of the autumn.
(67) a.   La fini**tion** du poème
            The finishing of the poem
     b.   #la finition de l'automne
            The finishing of the autumn
(68) La voiture s'est déportée sur la gauche. (inchoative reading)
    The car swerved to the left
(69) Le déporte**ment/**#la déporta**tion** de la voiture
    The swerving of the car
(70) Les Nazis ont déporté des millions de Juifs. (causative reading)
    Nazis sent millions of Jews in concentration camps
(71) Le #déporte**ment/**la déporta**tion** des Juifs
    The deportation of the Jews

As with causative/inchoative bases, *-ment* EDNs tend to denote the change of state only, it is harder to adjunct them a *par*-object than with *-ion* EDNs:

(72) L'oppress**ion/**l'excita**tion** des enfants par Paul
    The oppression/excitation of the children by Paul
(73) L'oppresse**ment/**l'excite**ment** des enfants #par Paul
    The oppressment/excitement of the children by Paul

Causative bases without inchoative readings (ie, obliged to denote the entire causation on all their uses) also confirm that *-ion* denotes longer eventive chains than *-ment*. Indeed, such bases have more difficulty to combine with *-ment* than with *-ion*. On the other hand, *-ment* neologisms are not rare with causative verbal bases having an inchoative reading (if the *-ment* noun does not already exist in the lexicon). This can be illustrated through a difference between two types of causative psych-verbs, namely *indigner*-verbs (which have an inchoative reading, cf. (75)–(76) below), and *séduire*-ones (which do not exhibit the inchoative reading, cf. (77)–(78)). With *séduire*-verbs, the pronoun *se* is always interpreted

as a reflexive pronoun (while the interpretation of *se* with the inchoative reading is of course not reflexive):

(75) a. Paul s'est indigné.
      i. Paul got indignant (inchoative reading)[16]
      ii. Paul did something which made him indignant (causative reading)
   b. Indigna**tion** (listed in dictionaries), °indigne**ment** (184 occ. in corpora)

(76) a. Paul s'est irrité de ma réponse. (inchoat. r.)/ Paul s'est irrité lui-même. (causative r.)
      Paul got angry about my answer / Paul irritated himself
   b. Irrita**tion** (listed in dictionaries), °irrite**ment** (133 occ. in corpora)

(77) a. Paul s'est séduit.
      i. Paul seduced himself (causative reading)
      ii. no inchoative reading
   b. Séduc**tion**, *séduise**ment** (0 occ. in corpora)[17]

(78) a. Paul s'est humilié.
      i. Paul humiliated himself (causative reading)
      ii. no inchoative reading
   b. Humilia**tion**, *humilie**ment** (2 occ. in corpora)[18]

     Note that the Latin suffix *-tio* was already more 'causative' than the Latin suffix *-men(tum)*. The following pairs taken from Gaffiot (1934) shows that *-io* nominalisations tend to denote the causation or the result of it, while *-men(tum)* corresponding ones denote either the result of the action or one of its reifications:[19]

(79) a. *motio, -onis*: action of moving, movement, impulsion
   b. *momentum (movimentum)*: movement, impulsion
(80) a. *fractio, -onis*: action of breaking
   b. *fragmen*: fragment, broken pieces
(81) a. *argutio*, *-onis*: action of blaming
   b. *argumentum*: argument, evidence

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[16] Under this reading, the verb often takes a *de*-object indicating the Theme of the denoted emotion (*Il s'est indigné de son arrivée*, 'He got indignant about his arrival'), cf. also the inchoative reading in (76a). This *de*-object is not acceptable with *séduire*-verbs in presence of the pronoun *se*.

[17] In fact, I found one occurrence of it, but it was clearly a typo for the present participle *séduisant*.

[18] In one case, *humiliement* is irrelevantly used as an adverb. The second occurrence is from the dictionary *Le Littré*, who notes that *humiliement* existed in the past.

[19] Note that some precaution is in order with this kind of etymological arguments, since, as underlined by Merk (1970), the correspondence between French and Latin suffixes is far from perfect. For instance, *-tio* nouns have given *-ion* but also *-ance* and *-ment* nouns.

As for intransitive verbs denoting a single event or an iteration of it, P_1 does not seem to play any role in the competition between *-ment* and *-ion*. Sometimes, *-ion* seems to target either the short or the long reading, while *-ment* selects only the short one (for instance, it is more natural to conceive a *suffocation* as an iteration of *suffoquements* than the reverse). But this does not seem to be a general tendency, and it does not clearly reflect in the plural/singular morphology. Besides, P_1 does not make any prediction about intransitive verbs which do not have an iterative and a non-iterative reading, nor about causative verbs who systematically denote the whole causation (ie without a inchoative reading) and for which the nominalisation in *-ment* and in *-ion* are both available in the lexicon. Indeed, as with such verbs, any nominalisation denotes the whole causation, one cannot say anymore that *-ion* ones only target the long reading.

5.2   Property P_4: ontological domains

However, other features allow to differentiate the two suffixes with all these classes of verbs. Very often, when comparing semantically their *-ment* EDN and the corresponding *-ion* one, one finds that the latter one roughly corresponds to the first one, but augmented with adjuncts specifying further some properties of the process:

(82) a.   agenouille**ment**: action of kneeling or its result (*TLF*)
      b.   génuflex**ion**: action of kneeling *in sign of respect or submission* (*id.*)
(83) a.   crucifie**ment**: action of crucifying[20] (*Le Petit Robert*)
      b.   crucifix**ion**: "crucifiement *de Jésus-Christ*" (*id.*), ie "crucifixion of Jesus-Christ"

The same way, a 'renoncia**tion**' could be defined as a 'renonce**ment**' *made public* (which explains why one can sign a *renonciation*, but not a *renoncement*, or why *déclaration de renonciation* is fine, while *déclaration de renoncement* is strange).

Very often, the specification carried out by *-ion* triggers a change in the ontological domain to which pertains the denoted event: while an *agenouillement* can be a simple physical event, *génuflexion* compulsorily denotes a social, ethical event. Of course, the target domain can vary from nouns to nouns, but in many cases, *-ion* transfers the event denoted by the corresponding *-ment* noun in an abstract domain.

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[20] Note that *crucifier* 'crucify' does not endure that causative/inchoative alternation. In that case, *-ment* EDNs do no denote the change of state only, since the verbal base is not underspecified in the relevant way.

Note that there is a common point behind the properties P_1 and P_4 in the way they differentiate the two suffixes, namely that in both cases, *-ion* has a richer, more complex meaning than the corresponding *-ment* one.

5.3 P_5: discontinuity

Another intuition about the difference between *-ment* and *-ion* is that *-ion* is more 'prototypically telic' than *-ment*. Firstly, note in table 1 above that even if *-ment* take bases of verbs having a telic reading, it is less often the case than *-ion* (46% versus 57%). Secondly, the bases selected by *-ion* resemble more the prototypical *eat a sandwich* VPs than the ones selected by *-ment*. Indeed, with verbs denoting an event e_1 and a change of state e_2, *-ion* EDNs seem to require that the event e_1 can be conceived as performed in several discontinuous steps e_1', e_1'', e_1'''...(subevent/subresult, pause, subevent/subresult, pause...). I will assume that the verb satisfies this requirement when it can be modified by *en plusieurs étapes* 'in several steps'. On the contrary, *-ment* seems to preferably select bases denoting an event conceived by default as taking place "in one shot". This difference is illustrated below:

(84) a. J'ai éclaté le ballon #en plusieurs étapes.
         I exploded the balloon in several steps
      b. éclate**ment**/*éclata**ion**
(85) a. Samira a alphabétisé Pierre en plusieurs étapes.
         Samira alphabetised Pierre in several steps
      b. alphabétisat**ion**/*alphabétise**ment**
(86) a. Il m'a étonné/affolé #en plusieurs étapes.
         He astonished/threw me into panic in several steps
      b. étonne**men**t, affole**ment**/*étonnat**ion**, *affolat**ion**
(87) a. Il m'a séduit/humilié en plusieurs étapes.
         He seduced/humiliated me in several steps
      b. séduct**ion**, humiliat**ion**/ *séduise**ment**, *humilie**ment**

There are counter-examples to this correlation (for instance, *gonfler* is acceptable with *en plusieurs étapes* but cannot nominalise in *-ion*), but until now, I found more nouns confirming it than the reverse. Dumay & Martin (2008) try to test it through experiments on pseudo-verbs.

6. *-age* versus *-ion*

Several predictions about the differences between *-age* and *-ion* derive from what has been proposed in the sections 4 and 5. Firstly, we expect *-age* and *-ion* to preferably denote events from different ontological domains when attached to the same bases. This is confirmed by the following data:

(88) a.   un cass**age** de doigt, #une cassat**ion** de doigt (physical event)
          a breaking of a finger

     b.   la cassat**ion** d'une décision juridique, #le cass**age** d'une décision juridique (jur. event)
          the canceling of a juridical decision

(89) a.   le fix**age** d'un tableau (non metaphorical)
          The fastening of a painting

     b.   le fix**age** des prix (metaphorical) *vs* la fixat**ion** des prix (non metaphorical)
          The setting of the prices

Note however that *-ion* can sporadically denote physical events too. For instance, *fixation* would be acceptable in (89a) without involving any metaphor (whereas it is not possible in (88a)). But this does not undermine the claim that *-age* and *-ion* differ in their preference for specific domains.

Another expected difference is that contrary to *-age* which always implies the presence of an action (cf. P_2), making it difficult to use to denote pure change of state (ie not caused by the action of an entity upstream), *-ion* can denote such pure changes of state. Take again the verb *fixer* when it translate the intransitive *settle* (as said above, this inchoative reading often requires the use of the pronoun *se*)

(90) a.   La tribu s'est fixée dans cette région.
          The tribe settled in this region

     b.   La fixat**ion** de la tribu/#le fix**age** de la tribu
          The settling of the tribe

On this use of *fixer*, *-age* cannot be used, except if the speaker wants to signal the existence of an action upstream of which the settling is the result.[21] *Dessaler* also only nominalises in *-ion* in its inchoative reading (examples taken from Dubois 1972, p.28):[22]

(91) a.   On dessale l'eau de mer.   Le dessalage de l'eau de mer
          We remove the salt from seawater The removing of the salt from seawater

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[21] Note that because of the incrementality constraint imposed by *-age* (cf. P_3), (90b) in the *-age* version would also require in this agentive context that the Agent acted on different parts of the tribe to get it settled in the region.

[22] Dubois only states that *-age* and *-ion* select different readings of the verb. For the same syntactical frame, the only difference he seems to make between *-age* and *-ion* is that *-ion* selects the more technical reading of the verb. This criteria does not apply to (91), where the two meanings are equally technical.

b. L'équipage du canoé a dessalé. La dessal**aison**[23]/#le dessal**age** de l'équipage

The crew of the canoe capsized The capsizing of the crew

The same way, (92), but not (93), automatically suggests the existence of an action upstream triggering the Theme's change of state (which makes e.g. the *earth* version of (92b) odd, except if we admit that the Earth's glaciation was triggered by a divine action).

(92) a. Le dispers**age** des cendres (no 'by themselves' reading)
The dispersion of the ashes
b. Le glaç**age** du gâteau/ #le glaç**age** de la terre
The glazing of the cake/the glaciation of the Earth (intended reading)
c. Le perfor**age** du mur/#le perfor**age** de l'intestin
The perforation of the wall/the perforation of the intestine.
(93) a. La dispers**ion** des cendres ('by themselves' reading OK)
The dispersion of the ashes
b. La glacia**tion** de la terre ('by itself' reading OK)
The glaciation of the Earth
c. La perfora**tion** de l'intestin ('by itself' reading OK)
The perforation of the intestin

Another related prediction from previous claims is that with underspecified causative/inchoative verbal bases, the *-age* EDNs systematically denote the whole causation, while *-ion* ones can also denote the change of state only. (92) and (93) can be seen as evidence for this claim too. But it also accounts for the following contrast in (95)–(98), once we assume that the object of *aboutir à* 'result in' can denote the last part of the eventive chain described by the subject.[24]

(95) Le °dispers**age** des cendres a abouti à leur dispers**ion**.
The 'dispers-age' of the ashes resulted in their dispersion
(96) #La dispers**ion** des cendres a abouti à leur °dispers**age**.
The dispersion of the ashes resulted in their 'dispers-age'
(97) Le °désinfect**age** de la plaie a abouti à sa désinfec**tion**.
The 'disinfect-age' of the wound resulted in its disinfection
(98) #La désinfec**tion** de la plaie a abouti à son °désinfect**age**.
The 'disinfect-age' of the wound resulted in its disinfection

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[23] Some verbs like *dessaler* nominalise in *–aison* and not in *–(at)ion*, but this suffix *-aison* is the same as the *–ion* one under study here.
[24] This is for instance corroborated by the acceptability of a sentence like *La vente d'un objet aboutit au transfert de sa propriété* 'the selling of an object results in the transfer of its property' (since the property transfer corresponds to the last part of the eventive chain denoted by *the selling*).

As expected, (96) and (98) are unappropriate because *-age* necessarily denotes the whole causation. This forces to end up either with an interpretation where a whole causation *C* results in itself (if the *–ion* EDN denotes the whole causation *C* too), or with an interpretation where the result of a causation *C* results in the causation *C* (if the *–ion* EDN denotes the result only).

A last prediction is that *-ion* will be *ceteris paribus* preferred to *-age* when the incremental relation between the event and the Theme imposed by *-age* cannot be satisfied (cf. P_3). This is supported by the following contrasts:

(99)   Le codifi**age** d'un texte/?d'un nombre
        The codifying of a text/of a number
(100) La codifica**tion** d'un texte/d'un nombre
        The codification of a text/a number
(101) Le numérot**age** d'une rue/?d'une voiture
        The numbering of a street/of a car
(102) La numérota**tion** d'une rue/d'une voiture
        The numbering of a street/ of a car
(103) Le modifi**age** d'une image/?d'un chiffre
        The modifying of an image/ of a figure
(104) La modifica**tion** d'une image/d'un chiffre
        The modification of an image/ of a figure

7.   Conclusions

Table 2 below summarises the differences made in sections 4-6 between the three suffixes under study on their eventive reading.

	-age	*-ment*	*-ion*
P_1	long reading with underspecified verbal bases	short reading with underspecified verbal bases	long or short readings with underspecified verbal bases
P_2	[+AGENTIVE]	[±AGENTIVE]	[±AGENTIVE]
P_3	incrementality between event and Theme	unmarked	unmarked
P_4	physical domain	all domains	preference for the abstract domain
P_5		[-DISCONTINUITY]	[+DISCONTINUITY]

Table 2: semantical/aspectual differences between
the three eventive suffixes under study

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In sum, I hope to have made clear that these three suffixes are semantically rich and seem to function as aspectual markers similar to verbal ones. However, contrary to verbal markers, nominalising suffixes often give rise to specific lexicalisations and are not equally productive. Hence, the competition between them is harder to modelise, and diachronical factors arguably play a bigger role than suggested here. But clearly, the choice of the suffix in the nominalising process does not only depend on historical accidents, as it is traditionally often assumed.

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Fabienne Martin
Department of Linguistics/Romance languages
University of Stuttgart
Heilbronner Str. 7
70174 Stuttgart

fabienne.martin@ling.uni-stuttgart.de

Event Denoting *-er* Nominalizations in German[*]

Florian Schäfer

Universität Stuttgart

As in other Germanic or Romance languages, *-er* nominalizations in German typically denote the external argument of the verb they are derived from irrespectively of its specific thematic role. This type of *-er* nominalizations is totally productive across languages. As observed in the literature, *-er* nominalizations across languages sometimes denote what looks like the internal argument of the verb they are derived from and one can even find *-er* nominalizations derived from adjectives, prepositions or nouns. The latter types of *-er* nominalizations are, however, not fully productive but (to some extent) idiosyncratic. I will show that German has one further type of *-er* nominalizations which does not denote an entity but an event. It turns out that these event denoting *-er* nominalizations are restricted to one specific type of predicates, namely semelfactives. Within this class of semelfactives, the derivation of event denoting *-er* nominalizations turns out to be totally productive. I suggest that the restriction that event denoting *-er* nominalizations can only be derived from verbs expressing semelfactive events tells us something about the meaning or the selectional restrictions of the derivational morpheme *-er*.

1.   Introduction: Entity denoting *-er* nominalizations

The literature on *-er* nominalizations has established the so called *external argument generalization*; *-er* nominals typically denote the external argument of the underlying predicate, irrespectively of the specific theta role which this argument has (Rappaport Hovav & Levin 1992, Fabb 1984, Keyser & Roeper 1984, van Hout & Roeper 1998 among others). That is, we find agent and instrument *-er* nominalizations but also *-er* nominalizations denoting other types of external arguments such as causer, holder or experiencer (cf. (1)).[1]

(1) a.   He is a *teacher*   (agent)
     b.   He is a *fire-fighter*
     c.   This is a *grinder*   (instrument)
     d.   This is a *can-opener*
     e.   Anger is a great *defuser* of pent-up emotions   (causer)
     f.   Education is a *leveller* of class differences
     g.   He is a *holder* of a Visa or Master card   (holder)
     h.   He is a *bearer* of heavy burden

[1] I do not discuss the difference between [+eventive] and [-eventive] *-er* nominalizations and its relation to the presence of complement structure that was established by Rappaport Hovav & Levin (1992). See Alexiadou & Schäfer (2007) for further discussion.

    i.   He is an *admirer* of the Greek poets   (experiencer)

    j.   He is a *lover* of French cuisine

The formation of external argument denoting *-er* nominalizations is a totally productive derivational process.

It was observed, however, that not all *-er* nominalizations obey the external argument generalizations. The examples in (2) seem to denote the theme, i.e. the internal argument of the underlying predicate.

(2)   a.   baker   (a baked potato)

         b.   broiler   (a broiled chicken)

         c.   scratcher   (a lottery ticket that is scratched)

         d.   bestseller   (something that sells well)

         e.   reader   (a combilation of literature which reads easily)

Nominals such as in (2) have an interpretation that is close to the interpretation that the base verb receives in the middle construction. Thus, it was proposed that these nominals are in fact derived from the middle version of underlying verbs where the theme (the argument denoted by the *-er* nominals in (2)) is the (either base generated or derived) external argument of the verb (Rappaport Hovav & Levin 1992, Booij 1986, Heyvaert 1998, 2003).

Besides object denoting *-er* nominals, we also find *-er* nominals denoting the complement of a preposition modifying the verb (where the preposition is often locational). For these types of *-er* nominals, it was also proposed that they can be subsumed under a middle-kind of analysis (at least in Dutch, Haeyvaert 1998, 2003).

(3)   a.   diner   (a place to dine in)

         b.   sleeper   (a train where one can sleep in),

         c.   toploader (a washing machine which one loads from the top)

While examples as in (2) and (3) can be found in English and Dutch, they seem to be hardly present in German.[2] A reason for this difference could be that English and Dutch form morphologically unmarked middles while German marks its middles with the reflexive pronoun '*sich*' (cf. Schäfer 2006, 2007 for a proposal which correlates this difference in morphological marking with a difference concerning the syntactic position of the theme in middles; in Dutch and English middles, the theme is a derived external argument, while in German middles, it remains in its VP-internal base position).

It should, however, be noted that even in languages that allow the kind of *-er* nominalizations in (2) and (3), their formation is certainly not fully productive but such a nominal has to be accepted in the language community in order to be

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[2] With the exception of the type in (3c) and loanwords like 'bestseller'.

understood in the right way.[3] A speaker cannot arbitrarily form a *-er* nominal with the intention that this nominal denotes the object of the underlying verb (or object of a verbal preposition) while this is always possible if the *-er* nominal is ought to denote the subject of a verb. That is, while virtually every verb projecting an external argument allows a *-er* nominal denoting the external argument, only a small subset of verbs allows *-er* nominals to denote the internal argument. This suggests that object-denoting *-er* nominals are (in fact need to be) lexicalized.

Finally, we can also find *-er* nominals with adjectival stems (foreigner, loaner), prepositional stems (upper, downer, insider), denominal stems (porker, Londoner, villager, Scotland Yarder, teenager) or derived from measure words (fiver) (see Ryder 1999 for a collection of such examples).[4] Once again, it should be noted that such derivations are not fully productive in that we cannot use any adjective, preposition or noun to form a corresponding *-er* nominal. This does not mean that there are no interesting generalizations to be made about what kind of non-verb derived *-er* nominals are possible or not. On the contrary, for example noun-derived *-er* nominals are clearly restricted by the semantics of the noun; while some noun classes do not allow *-er* formation at all (e.g. animals: *doger, *cater, *birder), other noun classes are persistently compatible with *-er* formation and then, the reading these nouns receive is clearly determined by a stereotypical pattern. For example, *-er* nominals from nouns denoting civilizing places (cities, villages, countries, …) denote people who live at this place (but not people who

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[3] Many of the object denoting *-er* nominals in English are built from specific verbal subclasses (cooking verbs or clothing verbs).

[4] The literature sometimes gives examples of *-er* nominals derived from alleged unaccusative verbs. But these examples involve verbs that can be reanalyzed as unergatives in the right contexts. Such contexts typically assign control to the only argument of the verb. In the examples below (from Ryder 1999), the *-er* nominals are either paired with professional nouns (*vanisher* -> professional + lawyer, dyer -> actor) or it is described as controller in a different way.

(i)   a.   I swear, the moment I need to talk to Max, he's suddenly gone. I'm beginning to think he is a <u>professional</u> *vanisher*, not a <u>lawyer</u>

        b.   So many old melodramas end in deathbed scenes that the <u>actors</u> who played in them had to be good *dyers*.

        c.   One guy jumped right into the fight, but his friend immediately vanished. The police came and hauled off the fighter, after which the *vanisher* <u>promptly reappeared laughing</u>.

The German examples below suggest the same analysis:

(ii)   a.   'Umfaller' (fall down-er) is not someone who is fainting but someone who agentively gives up his old opinion.

        b.   'Abfaller' (fall away-er) is not something which physically falls apart, but again someone who agentively changes his affiliation with a group/party/idea.

        c.   'Durchfaller' (fall through-er) is not something that physically falls through some physical object, but someone who misses his goals in school.

just work there, or have any other relation to the place)[5]. Further, in German, *-er* nominals derived from company-names denote employees of this company but not people who, for example, buy the products of this company (e.g. Postler, Banker, BMW-ler, …).

To conclude, while the class of *-er* nominalizations which do not denote the external argument of a verb is certainly interesting and amenable to specific generalizations, it seems fair to say that only the formation of external argument denoting *-er* nominalizations is really a productive derivational process within and across languages.[6]

In the next section, I will turn to a further type of verb derived *-er* nominals in German. While this type is restricted in productivity in that it is possible only with verbs from a very specific class, it turns out that, within this class of verbs, its formation is totally productive.

2. Event denoting *-er* nominals

In this section, I discuss a further type of *-er* nominalizations which I call "*event denoting -er nominalizations*". Event denoting *-er* nominalizations are - as far as I know - restricted to German. While the existence of this type of nominalizations has been acknowledged sometimes in the literature in passing (e.g. Fanselow 1985), it has (once again, to my knowledge) never been discussed in detail. Especially, the restrictions on the formation of event denoting *-er* nominalizations have not been discussed.

As an illustration, look at the two examples in (4) and (5). These examples are ambiguous between a reading where the nominal denotes the external argument of the underlying verb (a) and a reading where the nominal denotes the event of the underlying verb (b). Importantly, the event reading expresses something like a "minimal event": (4b) describes one single jumping cycle which starts when a person's feet leave the ground and stops as soon as the feet touch the ground again. Similarly, (5b) expresses one short beeping sound. Note that English *-er* nominalizations only have the external argument denoting reading, while the event denoting reading surfaces with zero-morphology.

(4)   ein Hüpfer
   a.   a jumper (a person who jumps)
   b.   a jump (a/one jumping event)

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[5] Again, languages differ in productivity; English allows this only with nouns denoting cities or villages (London-er, New York-er), German allows it also with many nouns denoting countries (Engländ-er, Italien-er, …)

[6] Therefore, Alexiadou & Schäfer (2007) propose to relate the difference between external argument denoting *-er* nominalizations and the other *-er* nominalizations to the difference between root and non-root derived nominals in the framework of Distributed Morphology.

(5)   ein Piepser
    a.   a beeper (an agent who beeps)
    b.   a beep (a/one beeping event)

The formation of event denoting *-er* nominals is not an idiosyncratic phenomenon restricted to a small number of verbs.[7] Instead, it turns out that it is totally productive within a specific, well defined class of verbs. As a first approximation, we find them within the following semantic verb classes (using the terminology of Levin 1993).

(6)   a.   Verbs of contact by impact
    b.   Verbs of (light/sound/substance) emission
    c.   Verbs of manner of motion and body internal motion

However, being a member of these classes is not sufficient. A closer inspection of the verbs within these verb classes reveals that a verb must have a *semelfactive* use in order to be able to form an event denoting *-er* nominal. Before I show this, I shortly introduce one proposal in the literature to characterize semelfactives.

2.1   Semelfactives

According to Rothstein (2007a, b), semelfactives are verbs denoting 'single occurrence' events; in addition, these verbs are homonymous with activities denoting verbs which involve iterations of the single event. For example, the verb '*knock (on the door)*' can either have a semelfactive reading where an object is brought in contact sharply with a door once, or it can have an activity reading which expresses an iteration of the single event, i.e. an object is brought in contact sharply with a door a number of times. More specifically, Rothstein proposes that activities are derived from semelfactives by the operation of s(ingular)-summing below:

(7)   <u>S-summing (Rothstein 2007a)</u>: (singular summing) sums activity events with no temporal gap between them and forms a new singular event out of this sum.

S-summing is the operation forming activities. All semelfactive predicates have in addition an activity reading but not all activity predicates have a semelfactive reading. Rothstein (2007b:4) explains the differences and similarities between semelfactives and activities on the basis of a comparison of the two predicates *skip* and *walk* (the highlighting is mine):

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[7] I identified more than 100 verbs that form event-denoting *-er* nominals.

"Events in the denotation of the activity predicates *skip* and *walk* are formed by S-summing from minimal events of *skipping* and *walking*. These predicates denote, respectively, the set of skipping and walking events closed under S-summing. The difference between them is that minimal events of skipping are **naturally individuable** or **naturally atomic**, while minimal events of walking are not." … "When the minimal events in the denotation of an activity predicate P are naturally atomic, or naturally individuable, then they are lexically accessible." … "A predicate P is naturally atomic if what counts as one instance of P is given as part of the meaning of P and is thus not context dependent." … "A naturally atomic entity is one whose unit structure is perceptually salient and given by the world".

As mentioned, all semelfactive predicates have in addition an activity use but not all activities also have a semelfactive use. The property of predicates with a semelfactive use to be naturally atomic allows us to identify systematic differences between the two types of predicates (cf. Rothstein 2007a):
Semelfactives can be counted in two ways: counting adverbials can count either the single event (the semelfactive version) or the iterations of the predicate (the activity version). With pure activities only extended events can be counted because the single event is not naturally atomic, i.e. it is not lexically accessible.

(8) a.   John knocked twice   (ambiguous)
     b.   John jumped three times   (ambiguous)
     c.   She walked three times   (not ambiguous)

Semelfactives can be iterated in two ways: *Again and again* can modify either the single event or the activity predicate (Rothstein 2007a). In the case of activities, only the extended event can be iterated. This leads to different implications about the time course of the iterated events. Naturally atomic events can be iterated without a break between the individual events. (9a) can, therefore, be understood as process which is ongoing for some time. With activities which do not involve naturally atomic events, the iteration implies that there must be a gap between the individual activity phases. (9b) therefore cannot be understood as a process ongoing for some time.

(9) a   She jumped again and again ->   She jumped for several minutes
     b. He ran again and again   -/-> He ran for several minutes

In the next section, I apply such tests to the verbal classes identified in (6). As it turns out, only semelfactive verbs within these verb classes allow the formation of event denoting -*er* nominalizations.

2.2 Event denoting *-er* nominalizations denote semelfactive events

TABLE I lists a number of *-er* nominalizations derived from 'verbs of contact by impact'. All the examples in the left column have two interpretations; they either denote the external argument of the underlying verb or the (minimal) event expressed by the verb (only the latter reading is indicated in the table). The examples in the right column, on the other hand, are not ambiguous. They only allow for the external argument interpretation. They do not allow for the event denoting reading (indicated by the * in front of the examples in the table).

Semelfactives		*Activities*	
Klopfer	(a knock)	*Hämmerer	(hammering-event)
Aufpraller	(a bounce)	*Schlager	(a hit)
Piekser	(a prick)	??Stampfer	(stamping event)
Schubser	(a jostle)	*Drücker	(pressing-event)
Stupser	(a nudge)	??Beisser	(a biting event)
Rempler	(a jostle)	*Schieber	(pushing-event)
Anrempler	(a jostle)	*Quetscher	(a squeezing event)

TABLE I: Verbs of contact by impact

A closer inspection of TABLE I reveals that the verbs underlying the nominals in the left column are semelfactives while the verbs underlying the nominals in the right column are activities. This is illustrated with two verbs, '*klopfen*' (to knock) and '*hämmern*' (to hammer) which clearly differ with respect to the tests introduced above.

If we count the event as in (10), we get an ambiguous result with '*klopfen*' (either an atomic event or an extended event is counted) but not with '*hämmern*' (only an extended event can be counted).

(10) a.   Er klopfte dreimal   (ambiguous)[8]
           He knocked three times
      b.   Er hämmerte dreimal   (not ambiguous)
           He hämmered three times

If we add the iterative adjunct '*wieder und wieder*' (again and again), '*klopfen*' is again ambiguous (11a); either the atomic event is iterated or the extended activity is iterated. The verb '*hämmern*' in (12a) does not show this ambiguity; only the extended event can be iterated. This difference between '*klopfen*' and '*hämmern*' is stressed by the fact that only the iterated semelfactive event in (11a) is logically compatible with (11b) which involves an atelic temporal modifier. The iterated activity event in (12a) is logically not compatible with (12b) which again involves

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[8] The verb '*anklopfen*' (at-knock), in contrast, is an activity and, in turn, the *-er* nominalization does not allow for the event denoting interpretation.
(i)   *Anklopfer   (a knocking-at (the door) event)

an atelic temporal modifier. The reason is that the atelic modifier suggests that the agent acts without a break but only a naturally atomic event can be iterated without an interruption. If we want to iterate an extended event, we have to assume that there is a break between the individual extended events, as otherwise we could not identify the beginning or end of the individual extended events; but this interrupted scenario cannot be described with a 'for some time' adverbial. The c-examples show the same (in)compatibility between iterated events and modifiers which suggest that the agent acted without a break; again, the semelfactive verb in (11c) gives much better results than the pure activity verb in (12c).

(11) a.   Er klopfte   wieder und wieder   (ambiguous)
          He knocked again   and again   (->)
     b.   Er klopfte   eine Zeit lang   (am Stück/ohne Pause)
          He knocked some time long (at a stretch/without respite)
     c.   Er klopfte   wieder und wieder ohne Unterbrechung
          He knocked again and again   without respite

(12) a.   Er hämmerte wieder und wieder   (not ambiguous)
          He hammered again and again   (-/->)
     b.   He hämmerte eine Zeit lang   (am Stück/ohne Pause)
          He hammered some time long (at a stretch/without respite)
     c.   #Er hämmerte wieder und wieder ohne Unterbrechung
            He hammered again and again   without respite

TABLE II lists a number of -er nominalizations derived from (different types of) 'verbs of emission'. Again, the examples in the left column are ambiguous, denoting either the external argument of the underlying verb or the event expressed by the underlying verb, while the examples in the right column only allow for the external argument denoting reading but do not allow for the event denoting reading (as indicated by the * in front of the examples).

Semelfactives		Activities	
?Aufblitzer	(flashing-event)	*Blinker	(a blinking event)
Piepser	(a beep)	*Funkeler	(a sparkling event)
Klopfer	(a knock)	*Leuchterer	(a glowing event)
Rülpser	(a belch)	*Pieper	(a puling event)
Seufzer	(a sigh)	*Weiner	(crying event)
Quietscher	(a jar)	*Schreier	(a shouting event)
Krächzer	(a caw)	*Rauscher	(a showsh)
Juchzer	(a crow)	*Summer	(a buzzing)
Träufler/Tropfer	(a drop)	*Rassler	(a rattling)
Spritzer	(a splash)	*Bluter	(a blooding event),

Table II: Verbs of emission

Once again, the verbs underlying the nominalizations in the left column but not the verbs underlying the nominalizations in the right column are semelfactives. This is illustrated exemplarily below. The examples in (13)-(15) show that '*piepsen*' (to beep) is a semelfactive verb while '*summen*' (buzz) is an activity verb.

(13)   Er piepste dreimal   (ambiguous)
     He peeped three times
     Er summte dreimal   (not ambiguous)
     He buzzed three times

(14) a. Er piepste wieder und wieder   (ambiguous)
     He peeped again and again   (->)
  b. Er piepste eine Zeit lang   (am Stück/ohne Pause)
     He peeped some time long (at a stretch/without respite)
  c. Er piepste ohne Unterbrechung wieder und wieder
     He peeped without respite   again and again

(15) a. Er summte wieder und wieder   (not ambiguous)
     He buzzed   again and again   (-/->)
  b. Er summte eine Zeit lang   (am Stück/ohne Pause)
     He buzzed   some time long (at a stretch/without respite)
  c. #Er summte ohne Unterbrechung wieder und wieder
      He buzzed without respite   again and again

The same contrast can be found with the light-emission verbs in (16)-(18). '(*Auf-)blitzen*' (to flash) which allows for the formation of an event denoting *-er* nominalization is a semelfactive while '*blinken*' (to blink) which does not allow for an event denoting *-er* nominalization is an activity.

(16) a. weil die Lampe dreimal (auf-)blitzte   (ambiguous)
     because the lamp three times flashed
  b. weil die Lampe dreimal blinkte   (not ambiguous)
     because the lamp three times blinked

(17) a. weil die Lampe wieder und wieder (auf-)blitzte (ambiguous)
     because the lamp again and again flashed   (->)
  b. weil die Lampe eine Zeit lang (am Stück/ohne Pause) (auf-)blitzte
     because the lamp some time long (at a stretch/without respite) flashed
  c. weil die Lampe ohne Unterbrechung wieder und wieder (auf-)blitzte
     because the lamp without respite   again and again   flashed

(18) a. weil die Lampe wieder und wieder blinkte   (not ambiguous)
     because the lamp again and again   blinked   (-/->)

b. weil die Lampe eine Zeit lang (am Stück/ohne Pause) blinkte
because the lamp some time long (at a stretch/without respite) blinked

c. #weil die Lampe ohne Unterbrechung wieder und wieder blinkte
because the lamp without respite again and again blinked

Finally, TABLE III lists -er nominalizations from 'verbs of manner of motion' and 'verbs of body internal motion'. Again, the examples in the left column are ambiguous, denoting either the external argument of the underlying verb or the event expressed by the underlying verb, while the examples in the right column only allow for the external argument denoting reading but do not allow for the event denoting reading (as indicated by the * in front of the examples).

Semelfactives		*Activities*	
Wackeler	(a wiggling event)	*Schütteler	(shaking event)
?Stakser	(a stalker)	*Torkler	(a tottering event)
Hüpfer	(a hopper)	*Rutscher	(a slip)
Hopser	(a hopper)	*Schlitterer	(a sliding event)
?Stolperer	(a stumble)	*Gleiter	(a sliding event)
?Schlenkerer	(a swing)	*Roller	(a rolling event)
?Schwenker	(a swing)	??Wirbler	(a spinning event)
Dreher	(a turn)	??Schaukeler	(a swinging event)

TABLE III: Verbs of manner of motion and body internal motion

Again, what is relevant for the event denoting reading is the semelfactive nature of the underlying verb. '*Hüpfen*' (to jump) occurs in the left column and shows a semelfactive behaviour while '*rollen*' (to roll) occurs in the right column and shows an activity behaviour.

(19) a. Er hüpfte dreimal (ambiguous)
He hopped three times

b. Er rollte dreimal (not ambiguous)
He rolled three times

(20) a. Er hüpfte wieder und wieder (ambiguous)
He hopped again and again (->)

b. Er hüpfte eine Zeit lang (am Stück/ohne Pause)
He hopped some time long (at a stretch/without respite)

c. Er hüpfte ohne Unterbrechung wieder und wieder
He hopped without respite again and again

(21) a. Er rollte wieder und wieder (not ambiguous)
He rolled again and again (-/->)

b. Er rollte eine Zeit lang (am Stück/ohne Pause)
He rolled some time long (at a stretch/without respite)

    c.   #Er rollte ohne Unterbrechung wieder und wieder
             He rolled without respite   again and again

To conclude, *-er* nominalizations in German can denote events if their source predicate is a semelfactive, i.e. if its event is **atomic/individuable**.[9]

3.   The syntax of (event denoting) *-er* nominalizations

Following van Hout & Roeper (1998) and Alexiadou & Schäfer (2007), I propose the structure in (22) for external argument denoting *-er* nominalizations. The verbal event <e> is introduced by the v-head. Voice introduces the external argument of the verbal event (Kratzer 1996). I assume that an aspect head on top of VoiceP is present in *-er* nominalizations (see Alexiadou & Schäfer 2007 for motivation). Finally, a nominalising n-head takes the verbal structure as its complement. The nominal head which is realized by *-er* introduces an <R> operator which binds the external argument variable <x> which was introduced in SpecVoice (Note that <R> thereby binds the closest argument position). Therefore, the *-er* nominalisation denotes the external argument of the verbal event.

(22)

```
                    nP
                   /  \
                -er    AspP
                <R>    /  \
                    Asp    VoiceP
                          /   \
                       <x>    Voice'
                              /   \
                          Voice    vP
                                  /  \
                                 v    RootP
                                <e>   /  \
                                  √Root  (ObjectP)
```
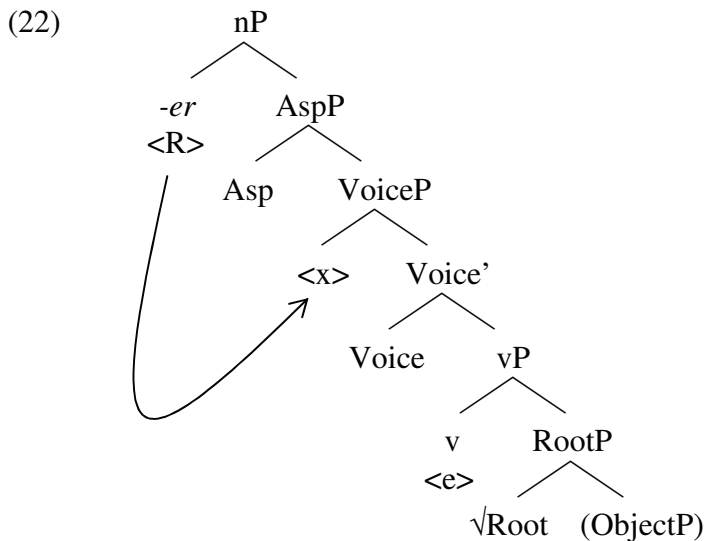
Turning to event denoting *-er* nominalizations, I propose the structure in (23). Voice is missing and the <R> operator introduced by *-er* binds the verbal event

---

[9] Antje Rossdeutscher suggests that besides being semelfactive, the events in event denoting *-er* nominals must be *non-intentional*. While some event-denoting *-er* nominals do not obviously fit this description ('Jodler', yodeler) this further restriction would explain why the VoiceP level can be missing in the structures of event-denoting *-er*s. Further, *-er* nominals such as '*Jodler*' (yodeler) and '*Kratzer*' (scratcher) might be better analyzed as objects of results instead of events.

variable <e> introduced in v. Note that in the absence of Voice, <e> is the closest position which <R> can bind.[10]

(23)

```
                    nP
                   /  \
               -er     AspP
               <R>    /    \
                    Asp     vP
                           /  \
                          v    RootP
                         <e>     |
                               √Root
```
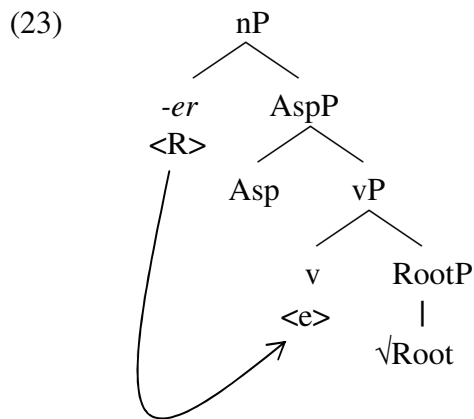
The structures in (22) and (23) suggest that there exists only one *-er* affix which is present in all *-er* nominalizations. *-er* is the realization of a little n head which introduces a referential argument <R> for the nominal it produces. This <R> is an operator which needs to bind a variable.

The central claim put forth here is that this operator introduced by *-er* does not necessarily select for an entity but can, in principle, also bind an event. However, it seems that this event must be of a specific type, i.e. semelfactive. Binding is restricted by minimality (closest c-commanded element of the right type). Depending on whether Voice is projected or not, <R> can bind either <x> in Spec,Voice or <e> in v.

Note that the existence of a derivational morpheme such as *-er* under the above characterization is not expected under Lieber's approach, as in her system "we should not expect to find an affix which creates nouns some of which are concrete and others of which are abstract (that is, some of which bear the feature [+material] and others [-material])" (Lieber 2004:41). In Lieber's system, *-er* builds only concrete nouns, i.e. has the skeleton [+material, dynamic]. But the above event-denoting nouns are [-material, dynamic] (where the type of dynamic event is highly restricted, i.e. semelfactive). Lieber would therefore be forced to assume that there are two *-er*s, one forming [+material] and one forming [-material] nouns.

The claim that the operator introduced by *-er* does not differentiate between entities and events does not mean that it comes without selectional restrictions. On the contrary, I propose that the fact that event denoting *-er* nominalizations are possible only with semelfactive predicates results from a selectional restriction.

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[10] Some semelfactives are transitive. The corresponding event nominals do not license complements. Note that these German event denoting *-er*s behave thereby as their English zero derived counterparts. I leave this for further research.

(i)   Er schubste den Peter (ii) Der Schubser (*des Peters) (iii) Er gab   Peter einen Schubser
       He pushed the Peter   The hustle   (*of Peter)   He gave Peter a   push

Specifically, I hypothesize that the property of semelfactive events to be naturally atomic saturates the central selectional restriction of the *-er* morpheme; that is, the operator on the n-head realized by *-er* needs to bind variables of the type [+atomic]. Atomicity in turn is a property which cuts across the class of events and entities.[11]

A number of questions remain to be answered:

What about the binding of events which are not naturally atomic? I assume that such events can be bound in the syntax by <R>,[12] but that at LF, such nominalizations are filtered out as not comprehensible: <R> wants to bind an atomic event but <e> introduced by verbs such as '*run*' is not atomic and therefore the two do not fit in their interpretations.

What about *-er* nominals derived from anticausatives? Why don't the examples in (24) denote the change-of-state events? This is especially striking as change-of-state/telic events are typically assumed to be atomic.

(24) a.   *brecher (break+er)   b.   *schmelzer (melt+er)

As suggested above, I propose that the event in v is in fact bound in the syntax by the n head. However, these constructions fail to receive a sensible interpretation at LF, because change-of-state verbs are only interpreted as atomic via a combination of an eventive v-head <e> and a resultant state <s>. <R> binds only the <e> in the v-head; this event is not atomic by itself. It is impossible to interpret the process part of a breaking event as atomic. Again, the structure is filtered out as incomprehensible at the CI-Interface.

What about English (and Dutch) which do not have event-denoting *-er* nominals? Recall that while English does not have event-denoting *-er* nominals, it nevertheless has event denoting nouns that correspond to the semelfactive *-er* nominals in German.

(25) a bounce, a knock, a beep, a jump, …

I propose that these nouns have exactly the same syntactic structure as the corresponding event-denoting *-er* nominals in German, i.e. the structure in (23). However, I propose that in English the n-head is spelt out in a different way in such a constellation. The framework of Distributed Morphology allows us to formulate that the Spell Out of the n-head forming atomic nouns can differ depending on the syntactic context. Following Embick (2003), insertion of Vocabulary items is sensitive to Locality. In other words, the Spell-Out rules for n make reference to its c-command domain as suggested by the two rules below.

---

[11] This leaves the question why we find *-er* nominals denoting mass nouns (nail polish remover, purifier, cleanser, …). I leave this question and the exact nature of the selectional restriction imposed by *-er* for future research.

[12] Therefore we do not expect to find object denoting *-er*s as there cannot be an object without a verb introducing an event and intervening between the operator in n and the object

(26) a.   Spell-out of n: Voice Cycle

n   ↔   *-er*/   {√BEEP, √JUMP,...}

   b.   Spell-out of n: v Cycle

n   ↔   -∅ /   {√BEEP, √JUMP, ...}

4.   Conclusions

The central aim of this paper was to present a rarely discussed type of *-er* nominalizations in German, event denoting *-er* nominalizations. This type of *-er* nominalizations is restricted to semelfactive verbs, but within this class of verbs, it is fully productive in that it can be formed with any semelfactive verb that exists. The existence of this type of nominalizations poses a number of theoretical questions. What is the structure of event denoting *-er* nominalizations and how do they differ from external argument denoting *-er* nominalizations? I argued above that the two differ in the presence vs. absence of Voice. If Voice is present, then the <R> operator located in n binds the external argument position, if Voice is absent, <R> binds the event in v. How many *-er* morphemes do we have to assume? Why are event denoting *-er* nominalizations restricted to semelfactive events? I proposed that there is actually only one *-er* morpheme which has selectional restrictions that cut across the verbal and nominal domain. Specifically, I suggested that the property of semelfactive events to be naturally atomic fits with the selectional restrictions of this *-er* morpheme. Finally, why do we find event denoting *-er* nominalizations only in German and not in other languages (e.g. English or Dutch)? I proposed that this is the result of different Spell Out rules in these languages; Spell Out rules are sensitive to the syntactic context in which a head occurs and, in the case of event denoting nominals, the Spell Out rule of English (and Dutch) chooses a zero exponent for the n-head that is spelt out as '*er*' in the context of Voice. It should be noted that while the answers to these questions proposed above are couched within the framework of Distributed Morphology and are to some extent of only preliminary nature, the questions posed by the existence of event denoting *-er* nominalizations mentioned above are really independent of the framework of word formation chosen.

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Florian Schäfer
Department of Linguistics/Anglistic
University of Stuttgart
Heilbronner Str. 7
70174 Stuttgart

florian@ifla.uni-stuttgart.de

Towards a Uniform Approach to Postnominal PPs and Genitives in German[*]

Torgrim Solstad

Department of Natural Language Processing, University of Stuttgart

In Distributed Morphology analyses of German, genitives occurring postnominally to deverbal event nominals such as in *die Beschreibung der Bürgermeisterin* ('the description of the mayoress') are argued to occur in different syntactic positions depending on their interpretation. Whenever they are interpreted in a parallel fashion to the internal argument of the underlying verb, they are assumed to occupy some complement position internal to the nominalisation. However, if they are interpreted as more loosely associated with the event, such as in an interpretation of *die Beschreibung der Bürgermeisterin* as a particular event of a description of something which the mayoress attended, they are assumed to be adjoined to the noun phrase. I argue that for lack of hard syntactic evidence with regard to these positions, we should seek a surface-oriented uniform analysis of the two interpretations. The varying interpretation of genitives is accounted for by assuming them to be introduced via an underspecified semantic relation ρ. The analysis is held in the framework of Underspecified Discourse Representation Theory.

1. Introduction

Genitives and prepositional phrases (PPs) as modifiers of noun phrases have a wide range of interpretations. For instance, they may be interpreted as arguments of an event nominalisation or a relational noun, or they may express possession or some general associative relation, cf. the German Determiner Phrases (DPs) in (1):

(1) a. die Zerstörung der   Stadt
         the destruction the-gen city
         'the destruction of the city'
     b. die Schwester des   Angeklagten
         the sister   the-gen defendant
         'the sister of the defendant'
     c. der Rechner   meines Kollegen
         the computer my-gen colleague
         'my colleague's computer'

In (1a), the genitive *der Stadt* ('the city') has a preferred interpretation as the object of destruction, whereas in (1b), the genitive *des Angeklagten* ('the defendant') is most likely to be interpreted as the sibling of the individual referred to by *Schwester* ('sister'). In (1c) the colleague is preferably interpreted as the possessor of the computer, or otherwise associated with it, e.g. as someone using it or similar.

There is broad consensus in the literature on adnominal genitives that their interpretation in e.g. (1a) and (1b) is restrained by the head noun of the complex DP, the event noun *Zerstörung* ('destruction') and the relational noun *Schwester* ('sister'), respectively. This can be accounted for by analysing event nouns and relational nouns as introducing argument variables. Similarly, there is widespread agreement that the relatively free relation between the genitive *meines Kollegen* ('my colleague') and the head noun *Rechner* ('computer') may be due to the lack of an argument relation in non-eventive and non-relational nouns such as *Rechner*.

In a number of analyses, the difference between the interpretation of the genitive as corresponding to the internal argument of the underlying verb of a deverbal nominalisation — henceforth referred to as the theme argument of the nominalisation — and the interpretation of a genitive as a possessor or as more broadly associated with the noun in question, is also assumed to have a syntactic correspondence: The semantic behaviour is accounted for not only by referring to the fact that nominalisations such as *destruction* involve a theme argument semantically, but also by assuming different syntactic positions in the two cases. For genitive theme arguments, a syntactic position parallel to that of the direct object of verbal projections is assumed. For possessives or other associative genitives a different position is assumed, possibly adjoined to the noun phrase. This view is most prominently defended in work in Distributed Morphology (cf. e.g. Alexiadou, 2001), but similar dichotomies may be found in other approaches as well, cf. e.g. Hartmann & Zimmermann (2002), who use the terms *syntactic and semantic genitive*.[1]

While I do not dispute the basic semantic insights concerning the above data, I take a different view of the syntax-semantics interface. I argue that in the case of German the postnominal genitives should all be treated the same way syntactically. More concretely, I assume that there is no syntactic argument position for postnominal genitives. Instead, I explore an approach in which all postnominal genitives show the syntactic behaviour of the modifier case but may still be interpreted as arguments semantically, being introduced by the same underspecified semantic relation in all cases. The interpretational variation is due to the fact that the underspecified semantic representation of the genitive and the semantic representation of the noun or nominalisation may relate differently to one another. I will also show how this analysis may account for the postnominal PP realisation of arguments.

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[1] Barker (1995) makes a parallel distinction between *lexical* and *extrinsic possession*.

Although the present paper deals with the syntax-semantics interface, the main emphasis will be on the semantics of the genitives. Thus, I will ignore a range of syntactic intricacies and often only refer to relevant issues very briefly. My main goal is to show that a reasonably straightforward semantic analysis is possible for the phenomena under discussion without the complex syntactic machinery which is often assumed. Although I will only focus on German data, I believe that some of the results of this paper may be of relevance for other languages.[2]

The paper is organised as follows. In Section 2 I introduce the data which I will focus on along with the basic features of the proposed analysis. In Section 3, the syntactic and semantic analysis is presented. Section 4 concludes the paper with some general remarks on the syntax-semantics interface.

2. Data and Main Claims

In German, genitives may be post- or prenominal. I will restrict myself to post-nominal genitives as the prenominal genitives have a different distribution and may be argued to be restricted to involving personal names in Modern German (for a different view see Sternefeld, 2007, p. 212). However, I will also include such postnominal PPs which may be associated with the arguments of a nominalisation, namely *von* ('by') and *durch* ('through') phrases. I will only analyse event nomi-nalisations which are derived by means of the suffix *-ung*. This means that will not discuss relational nouns such as *sister*, but it seems plausible to me that they can be analysed in the spirit of this approach.

I will present a small case study of the event nominalisation *Beschreibung* ('description').[3] In particular, I will examine the following examples:

(2)   a.   die Beschreibung der/von der Bürgermeisterin
              the description   the/of the   mayoress
              'the description of the mayoress' or 'the mayoress's description'
      b.   die Beschreibung durch   die Bürgermeisterin
              the description   through the mayoress
              'the mayoress' description' (agentive only)

---

[2] Let me point to one of the differences between e.g. German and English which would have to be taken into account: In English, postnominal arguments and non-arguments are not realised the same way. Arguments are introduced in an *of* phrase, while non-arguments are introduced by means of a 'double genitive' such as in *the stick of John's* (cf. *the stick of John).

[3] Like the English nominalisation *description*, *Beschreibung* has at least two more readings: First, it may refer to the content of description. Second, it may also receive a coerced interpretation which may be paraphrased as 'object carrying information which serves as a description' (e.g. a piece of paper containing a description). I will not discuss the exact reasoning behind the assumption that the information reading is more basic than the concrete object reading.

    c.   die Landschaftsbeschreibung der Bürgermeisterin
           the scenery.description   the mayoress
           'the description of the scenery by the mayoress'

In (2a), the genitive *der Bürgermeisterin* ('the mayoress') may be interpreted both as the described entity as well as the describing individual. As indicated in the example, I will treat postnominal *von* phrases and genitives as equivalent in German. This is motivated by that fact that since in general no case marking is allowed on bare nouns in German, *von* sometimes has to be used instead of the genitive, as e.g. in some occurrences of mass nouns. This view is certainly somewhat too simplified, but I will not go into this issue in any detail. See the remarks on PP attachment below and footnote 4 on page 194. With a *durch* phrase as in (2b), only one interpretation is available, namely that the mayoress is the agent of the describing event. Finally, I will also look at cases where the genitive cannot be interpreted as the theme argument, as in the case of (2c), where *Landschaft* ('scenery') is the described entity and *Bürgermeisterin* is most naturally interpreted as the describing individual, i.e. as the agent of the event of describing.

As opposed to analyses assuming two different syntactic positions for the argument and non-argument interpretations, I will make the following assumptions:

- All postnominal PPs and genitives occupy the same syntactic position, i.e. they are adjoined to the level of nP, assuming DP as the highest functional projection dominating a noun phrase.

- All postnominal PPs and genitives are represented semantically by the underspecified two-place relation ρ. This relation may be differently realised though, which is what gives us the different interpretations of postnominal genitives and PPs.

Concerning the syntactic position, it may be noted that in Distributed Morphology analyses, assignment of genitive case to theme arguments is assumed to be structural, often linked to the presence of D (although the case feature itself may be located within other projections dominated by the DP, cf. Alexiadou, 2001, p. 177 ff.). As for non-arguments such as possessives, other case assigning mechanisms will have to be applied to, since they are not assumed to occupy an argument position. Contrary to this, I assume that the DP is assigned genitive case in a uniform way, i.e. there is no differentiation between structural and non-structural case assignment for arguments and non-arguments, respectively. Admittedly, I will not provide a detailed syntactic analysis here, but it may be remarked that at least for a uniform approach to German postnominal genitives an identical case assignment mechanism should be available, since we need to be able to assign genitive case to non-argument noun phrases anyway.

A Uniform Approach to Postnominal PPs and Genitives in German

As to the semantic representation of the postnominal modifier, the semantics of genitives and postnominal PPs is related to the nominalisation via a ρ operator. The operator ρ, which is underspecified, may either be identified with the specific semantic role of theme argument or it may be specified as for instance an agent, a possessor or some kind of broad associative relation. To a large degree the specification is dependent on the selectional restrictions of the nominalisations in question.

Let me make some remarks on the motivation for the uniform approach I have chosen to pursue: It seems that one of the most prominent arguments for a split approach is related to the argument or non-argument status of the genitive. While I believe that it is indisputable that we have to differentiate between these semantically, I still think we lack hard syntactic evidence for a different distribution of the two cases in German. Intuitions concerning the argument status of genitives cannot be considered such evidence alone (cf. Partee & Borschev, 2003, p. 72).

Relevant data to look into could for instance involve binding, extraction or quantification phenomena. To my knowledge, no such evidence has been provided for German. Admittedly, I will not be able to clarify this issue in the present paper, but I would like to make some remarks on the relevance of extraction data for German. It has often been argued that the possible extraction out of a DP is determined by the status of the extracted element in some thematic hierarchy (cf. e.g. Godard, 1992). According to this line of explanation, a theme argument should only be extractable as long as an agent or possessor phrase is not present. This is linked to the assumption that theme arguments are more deeply embedded in an NP than for instance agents. If this would hold for German, it could be argued that this constitutes evidence for an approach where genitives interpreted as theme arguments of event nouns are assigned a different syntactic position than genitives which are interpreted as possessors. At first sight, the German data actually seem to confirm the thematic hierarchy approach:

(3)   a.   Die Soldaten, deren Zerstörung der Stadt die Welt schockiert hat,
                the soldiers, whose destruction the city   the world shocked   has
                wurden gestern   festgenommen.
                where   yesterday arrested
                'The soldiers, whose destruction of the city has shocked the world, were arrested yesterday'.
    b.   *Die Stadt, deren Zerstörung der Soldaten die Welt schockiert hat, ist
                the city,   whose destruction the soldiers the world shocked   has, is
                nur   50 km entfernt.
                only 50 km away.
                'The city, whose destruction by the soldiers has shocked the world, is only 50 km away.'

c.   Die Stadt, deren Zerstörung die Welt   schockiert hat …
       the city,   whose destruction the world shocked   has
       'The city, whose destruction has shocked the world …'

According to the thematic hierarchy approach, the different acceptability rating of (3a) and (3b) is due to the fact that in the acceptable (3a) the higher-ranked agent *die Soldaten* ('the soldiers') has been extracted, whereas in the ungrammatical (3b), the lower-ranked patient *die Stadt* ('the city') has been extracted. Example (3c) confirms that patients can be extracted in principle.

Now, there are two ways to save the uniform approach. The first argument stems from Kolliakou (1999), who discusses *de*-phrases in French. Kolliakou argues convincingly that the possible extraction from a noun phrase may very well be determined by other properties than positions in thematic hierarchies. She shows that there exist counter-examples to distributions similar to the one in (3) and argues that the data are more adequately accounted for when taking the distinction between individual and property denotations into account.

More importantly, though, it may be doubted whether the examples in (3) constitute true cases of extraction parallel to the French *de* data provided by Godard (1992) and Kolliakou (1999). As the *de*-phrases are PPs, the diagnostics cannot be directly applied to the German data. For instance, there seems to be a strict adjacency constraint on the interpretation of adnominal genitives in German (see also Section 3.2): A genitive may only relate to the immediately preceding noun. Contrary to *de* phrases in French, no two postnominal genitives may modify the same noun. Thus, in a DP such as

(4)   die Zerstörung der Stadt der Soldaten
       the destruction the city   the soldiers
       'the destruction of the city of soldiers'

the second genitive, *der Soldaten* ('the soldiers'), does not modify the head noun *Zerstörung*, e.g. being interpreted as one of its arguments. Rather, it is related to the immediately preceding noun, *Stadt* ('city'), expressing a broader associative relation, e.g. as the city which the soldiers control or live in. Consequently, the constructions in (3a) and (3b) cannot be derived from (4).[4] I will not discuss further details concerning syntactic facts supporting one analysis over the other.

---

[4] It may be noted that in German a PP can be related to a noun although other material intervenes:
(i) das Haus der Müllers von Le Corbusier
     the house the Müllers by   Le Corbusier
     'the Le Corbusier house of the Müllers'
The *von* phrase in (i) may refer to a house which was constructed by Le Corbusier.

Let me sum up the motivation for exploring the particular analysis which is presented in this paper: As long as there is no syntactic evidence to suggest that there are two separate positions for genitives in German, we should pursue a uniform analysis. The varying semantic interpretation does not as such justify postulating two different syntactic analyses. Thus, my goal in the remainder of the paper is to show how a semantic analysis could be conceived of that takes a surface oriented perspective on syntactic structure, where both kinds of genitives are assumed to occupy the same syntactic position. Accordingly, the semantics of the genitive has to be either one which is characterised by extensive homonymy or underspecification. I contend that the latter alternative should be chosen.

It should be added that attempts at a uniform analysis of the different kinds of genitives have been undertaken before (see for instance the discussion in Partee & Borschev, 2003). What is new about what I am going to present — to my knowledge — is on the one hand that I include PPs corresponding to external arguments and that the analysis is intended to be compatible with a semantic decomposition of nominalisations as it is assumed in both lexicalist and non-lexicalist approaches.

3. The Analysis

As just mentioned, my analysis is intended to be compatible with both lexicalist and non-lexicalist decomposition of nominalisations. Although I will argue against an adnominal syntactic argument insertion site for genitives as assumed in Distributed Morphology, I will follow the analysis of Roßdeutscher (2007), which leans heavily on Distributed Morphology with respect to the morphology of *-ung* nominalisations. Nothing much hinges on this, however.

With Roßdeutscher I assume that word derivational elements are paired with a Discourse Representation Theory semantic format involving a store mechanism (van der Sandt, 1992; Kamp, 2001). As I will refer to a level of representation where many of the details concerning the exact generation of the *-ung* nominalisations is of no great importance, I will present a strongly simplified version of the analysis of Roßdeutscher. I will turn to the details of the semantic analysis in Section 3.2 after presenting the morpho-syntactic structure of *Beschreibung* in Section 3.1.

3.1 Word-syntactic Structure of *-ung* Nominalisations

In Roßdeutscher's Distributed Morphology analysis, a simplified word-structure as in Figure 1 (p. 196) is assigned to *Beschreibung*. The items in boxes indicate which semantic entities are introduced at a particular level of representation. The root SCHREIB is merged with a v head, supplying an event. The v head takes a small clause as its complement, in which the verbal prefix of *be-schreiben* ('describe')
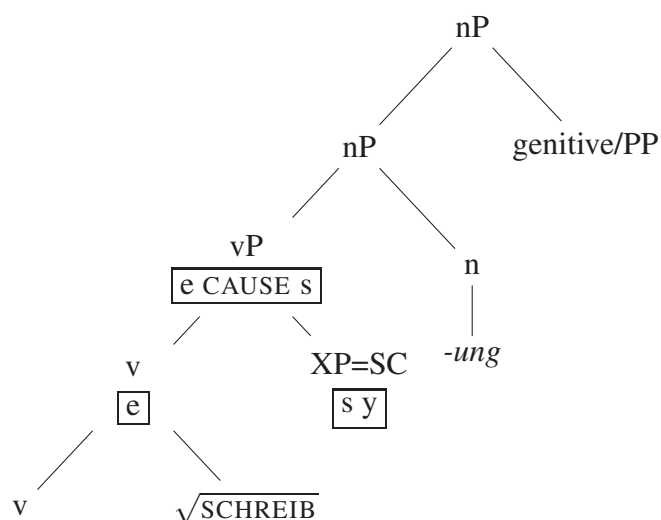
Figure 1: Simplified DM-style structure of *Beschreibung*

is contained. The prefix *be-* is assumed to introduce a two-place relation, but the exact details of the semantic and syntactic construction at this point will not be discussed here. What is important is that the small clause structure introduces an entity *y* (corresponding to the content of the description) which is predicted to be in a state *s*. Finally, at the level of vP, the bi-eventive structure consisting of the combination of an event *e* (corresponding to the event of describing) with the state *s* motivates the introduction of a CAUSE predicate, which relates the two (*e* and *s*). It is further assumed that the n head operates on vP, n being the head of the nominalisation and taking vP as its complement. It is this resulting nP to which the genitives and PPs are adjoined. In addition to the simplification of the small clause complement of v, the substructure of both vP and nP is also more complex than illustrated here. For instance, head-to-head movement is assumed to account for the correct phonological realisation of the structure, but this will not concern me here.

As I already mentioned, most of the details concerning the structure of the vP will be ignored. However, the following assumptions will be of importance for the analysis to be presented. I will not discuss all of them in detail:

1. I assume the Voice hypothesis, i.e. external arguments are introduced by Voice and not contained in vP.

2. The suffix *-ung* operates on the level of vP, but has no semantic effect apart from providing us with a noun. Importantly, though, the transformation to a noun makes the modification through the ρ-relation possible, as I will argue.

3. As *-ung* is applied to the level of VP, the *-ung* nominalisation does not include a Voice projection.

4. The variable *y* corresponding to the theme argument is not bound before the level at which nominalisation occurs.

5. The vP level includes semantic information on the relation between the *y* argument and the event in which it is included, i.e. information as to the semantic role associated with *y*.

3.2 Semantic Construction

The semantic analysis I present is framed in UDRT Reyle (1993), applying the DRT formalisation outlined in Kamp (2001). It is intended to be compatible with a range of syntactic approaches, all of which should share the common assumption that some genitives may relate to an argument of the noun whereas others are merely modifiers of the noun phrase they are attached to.

For the level of vP of predicates like *beschreiben* we assume the following simplified representation which can either be expanded to a verb or a noun phrase:

(5)
$$
\left\langle e,y \;\middle|\;
\begin{array}{|c|}
\hline
s \\
\hline
\text{STATE(s)} \\
\text{BESCHREIBEN(e)} \\
\text{INT-SEM-ROLE(y,e)} \\
e \text{ CAUSE } s \\
\hline
\end{array}
\;\right\rangle
$$
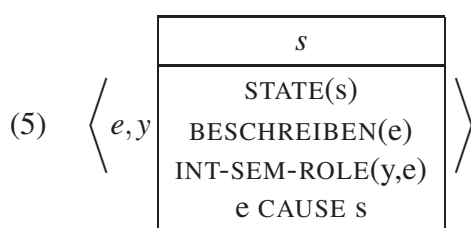
The left part of the representation, i.e. the variables *e* and *y* occurring before the DRS box in (5) is referred to as the store, whereas the left part, i.e. the DRS box itself is termed the content part of the representation. I will not go into details concerning this particular formalisation in DRT (for details, cf. Kamp, 2001). The only important aspect for the present analysis concerns the fact that variables in the store still await binding after the application of the *-ung* suffix.

As can be seen from (5), the only variable which is bound at the level of vP or nP is the state variable *s* which originates in the small clause structure. I will not describe this state any further here, at it is not relevant for my present purposes, but it is clear that it must include the representational function of a description and the entities involved in it. The representation also includes information on the semantic role of the internal argument in the event which emerges from the combination of *e* with *s*. I have given it a general name, simply INT-SEM-ROLE, here, but it is clear that it should be differently specified (e.g. PATIENT ...) for various kinds of predicates.

Contrary to the variable *s*, the variables *e* and *y* still need to be bound at the level of nP or later. It is of great importance that *y* is not yet bound. This is the crucial point where I differ from Distributed Morphology analyses such as the one of Roßdeutscher (2007): In my analysis, internal arguments have not been yet inserted at the level of vP.[5]

As mentioned, the representation at the level of vP does not change after the application of the *-ung* suffix. However, taking the vP as its complement, the resulting nP may be modified by the ρ relation. It is assumed that any noun may be modified by the ρ relation. This is clearly an assumption which has to be qualified further, but here I will only remark that it mirrors the empirical situation where a genitive may be attached to any noun. The relation ρ has a uniform semantics as specified in (6):

(6) $\left\langle \rho, x, z \boxed{\begin{array}{|c|} \hline \\ \hline \rho(x,z) \\ \hline \end{array}} \right\rangle$

The variables *x* and *z* are sortally underspecified. Mostly, *x* will be an individual, whereas *z* may be a state, an event or an individual. ρ may be seen as presuppositional and thus subject to other binding mechanisms than those of *x* and *z*, but for the sake of simplicity they are all treated equally in the present paper. The representation of ρ is unified with the one for the nP when a postnominal genitive or PP is adjoined to it.

I will first discuss genitives and *von* phrases. As stated earlier, I assume that genitives and *von* phrases are semantically equivalent. In the first example, (2a), repeated below for convenience, the genitive *der Bürgermeisterin* may be associated both with the described entity as well as the describing individual. I will first look at the case where the genitive is associated with the theme argument.

(2a) die Beschreibung der   Bürgermeisterin
    the description   GEN mayor
    'the description of the mayor' or 'the mayor's description'

The representation for *von der Bürgermeisterin* or *der Bürgermeisterin* ('of the mayoress') emerges as follows:

---

[5] The discourse referents *e*, representing the event of description, and *y*, corresponding to the content of the description, are the only possible referential arguments of a noun phrase which is headed by *Beschreibung*. I will not go into any details with respect to this distribution. See Roßdeutscher (2007) for further motivation for this assumption.

(7)
$$\left\langle \rho, z \begin{array}{|c|} \hline x \\ \hline \rho(x,z) \\ \hline \text{BUERGERMEISTERIN}(x) \\ \hline \end{array} \right\rangle$$

Here, the variable *x* has been bound by applying the genitive to the noun *Bürger-meisterin*, which is the specification of the variable *x*. In the next step, the representation of the nP *Beschreibung* and the representation of the genitive *der Bürger-meisterin* are unified:

(8)
$$\left\langle e, y \begin{array}{|c|} \hline s \\ \hline \text{STATE}(s) \\ \text{BESCHREIBEN}(e) \\ \text{INT-SEM-ROLE}(y,e) \\ e \text{ CAUSE } s \\ \hline \end{array} \right\rangle \uplus \left\langle \rho, z \begin{array}{|c|} \hline x \\ \hline \rho(x,z) \\ \text{BUERGERMEISTERIN}(x) \\ \hline \end{array} \right\rangle$$

What we need to achieve in the case of the noun *Bürgermeisterin* contained in a genitive or a *von* phrase to be interpreted as the internal argument of the nominalisation, is an identification of the relation INT-SEM-ROLE with ρ, *x* with *y* and *z* with *e*. It is assumed that ρ is bound by INT-SEM-ROLE, and that thus, *y* is identified with *x* and *z* with *e*. *z* has to be identified with the referential argument of the nominalisation in all cases. As we are dealing with an event nominalisation, *z* must be identified with an event. Obviously, we need some general constraints on what relations may be unified with ρ. I will not attempt to give an exhaustive list of what they may be, but it seems clear that internal argument roles such as for instance PATIENT should be among them.

The result of the unification is given in (9), where the equations specify which variables are unified:

(9)
$$\left\langle e \begin{array}{|c|} \hline s,x,z,y,\rho \\ \hline \text{STATE}(s) \\ \text{BESCHREIBEN}(e) \\ \text{INT-SEM-ROLE}(y,e) \\ e \text{ CAUSE } s \\ \rho(x,z) \\ \text{BUERGERMEISTERIN}(x) \\ \rho=\text{INT-SEM-ROLE} \\ x=y \\ z=e \\ \hline \end{array} \right\rangle$$

In (9), the variable *e* is still unbound. With Roßdeutscher (2007), I assume that it is bound at the level of DP. ρ has been identified with INT-SEM-ROLE, *x* with *y* and *z* with *e*.

Importantly, I assume a general principle for interpretation to achieve the correct binding relations: variables should preferably enter binding relations as opposed to being bound merely existentially. The preference for an object reading of a genitive in many cases stems from this general interpretational principle. If the ρ of the genitive or *von* phrase is not identified with the INT-SEM-ROLE relation and the variable *y* is thus not identified with the variable *x* of the ρ relation, a binding possibility has been overlooked. What is more, the genitive has to be specified or accommodated as some relation different from the INT-SEM-ROLE one.

Before discussing the case of the agentive interpretation of the genitive, I want to show how the unambiguous case of agentive *durch* phrase modification is treated, cf. (2b), repeated below for convenience:

(2b) die Beschreibung durch   die Bürgermeisterin
      the description   through the mayoress
      'the mayoress' description' (only agentive)

As *durch* is the default preposition introducing external arguments in nominalisations, I propose to let *durch* introduce a binding condition or unification constraint which may be formulated as in (10):

(10) ρ=AGENT

To be precise, we need a more general reference to an external argument role or similar as the external arguments introduced by the *durch* phrase may be for instance both agents and experiencers. However, the AGENT specification is sufficient for our current needs.[6] The representation of the *durch* phrase is as follows:

$$
(11) \quad \left\langle z \left| \begin{array}{c} x, \rho \\ \hline \rho(x,z) \\ \rho = \text{AGENT} \\ \text{BUERGERMEISTERIN}(x) \end{array} \right. \right\rangle
$$

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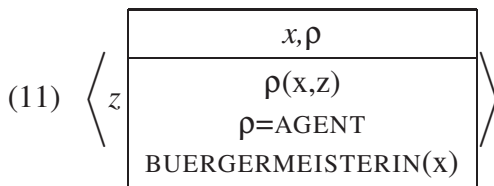
[6] There is an interesting difference in distribution between *von* and *durch* in verbal passives and nominalisations with respect to agentivity. Whereas *durch* is the preferred agentive preposition in nominalisations, in verbal passives *von* is clearly the preferred preposition for introducing agents. In verbal passives *durch* is restricted to special cases of agentivity, such as the agent being controlled by someone else. Unfortunately, I cannot treat this difference in any detail here, cf. the discussion in Solstad (2007, pp. 299–307).

The agent specification of *durch* binds ρ, introducing the restriction that it should only apply to agents. Otherwise, the representation is similar to the one for the case of the genitive.

Again, the representation of the nP adjunct is unified with the representation of the *-ung* nominalisation. Before unification we have the representation in (12), while (13) shows the result of unification:

$$
(12) \quad \left\langle e, y \; \begin{array}{|c|} \hline s \\ \hline STATE(s) \\ BESCHREIBEN(e) \\ INT\text{-}SEM\text{-}ROLE(y,e) \\ e\ CAUSE\ s \\ \hline \end{array} \right\rangle \; \uplus \; \left\langle z \; \begin{array}{|c|} \hline x,\rho \\ \hline \rho(x,z) \\ \rho = AGENT \\ BUERGERMEISTERIN(x) \\ \hline \end{array} \right\rangle
$$

$$
(13) \quad \left\langle e, y \; \begin{array}{|c|} \hline s,x,z,\rho \\ \hline STATE(s) \\ BESCHREIBEN(e) \\ INT\text{-}SEM\text{-}ROLE(y,e) \\ e\ CAUSE\ s \\ BUERGERMEISTERIN(x) \\ AGENT(x,z) \\ z = e \\ \hline \end{array} \right\rangle
$$
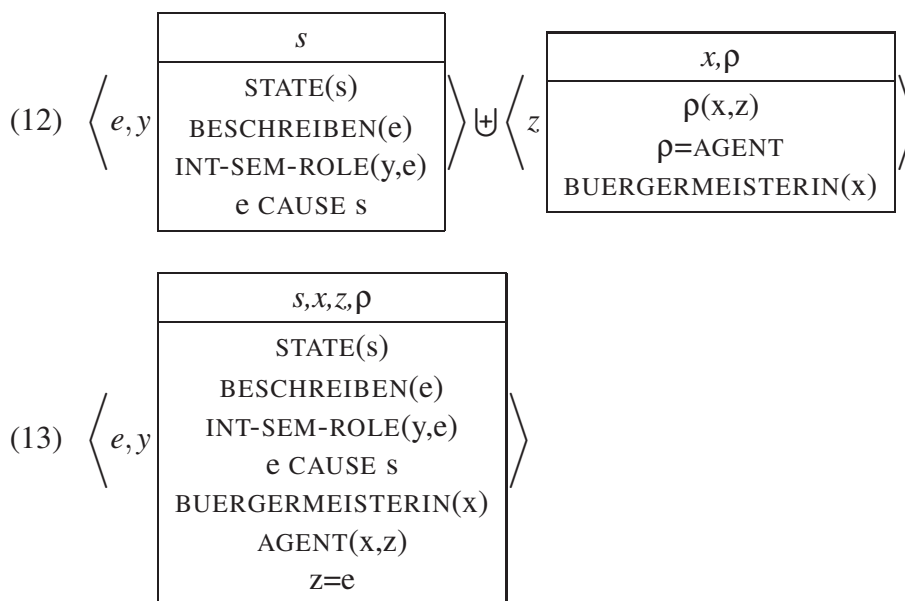
INT-SEM-ROLE is not identified with AGENT. In fact, it is assumed that they cannot match because the AGENT specification of the ρ relation cannot be identified with the semantic role of the internal argument, INT-SEM-ROLE. Thus, the *durch* phrase introduces an additional semantic relation. In this case, *y* has to be existentially bound and *z* has to be identified with *e*. *z* must be identified with *e* because the AGENT relation is one between an individual and an event. The variable *y* can be specified in context.

Turning now to the case of genitives not being identified with the internal argument of the nominalisation, I will discuss the example in (2c) where the *-ung* noun is part of a noun-noun compound, cf. example (2c), repeated below for convenience. Many of the remarks made here concerning the interpretation of the genitive itself would also apply to the simple case not involving a compound, but the compound makes clear that the genitive cannot be interpreted as the internal argument:

(2c)   die Landschaftsbeschreibung der Bürgermeisterin
         the scenery.description   the mayoress
         'the description of the scenery by the mayoress'

In (2c) it is not possible to associate the genitive with the internal argument, i.e. the noun phrase cannot refer to an event of someone describing the mayoress. It could seem like a reasonable first hypothesis to assume that the first part of the compound, *Landschaft* ('landscape') binds the *y* variable, making it inaccessible for entering a binding relation with *Bürgermeisterin*. This, however, does not seem right. There are cases where both the first part of the noun-noun compound and the postnominal genitive seem to specify the variable *y*:

(14) a.   die Personenbeschreibung der Täter
              the person.description   the delinquent
              'the personal description of the delinquent'
      b.   die Strukturbeschreibung des einfachen Arraymodells
              the structure.description the simple array model
              'the structural description of the simple array model' or
              'the description of the structure of the simple array model'

In the case of *Personenbeschreibung der Täter* ('the personal description of the delinquent'), the first part of the compound merely specifies the particular sort of *description* we are dealing with. It is an open question whether *Personen* and *Täter* are identified or whether *Personen* sortally restricts *Beschreibung*. Essentially, (14b) is parallel to (14a), with the first part of the compound restricting the type of description sortally. In this case however, the genitive may also be seen as modifying the first part of the compound, constituting a so-called bracketing paradox.

I will not go into the syntactic structure of the noun-noun compounds, which is a notoriously difficult matter, but in light of the above data, it seems reasonable to conclude that semantically, no binding in the strict sense is going on between *y* and any variable introduced by the first part of the compound. Otherwise, the genitive should not be interpretable as the internal argument in (14a). Rather, the first part of the compound introduces restrictions on the binding possibilities of the variable *y*. In cases such as *Landschaftsbeschreibung* in (2c), the ρ relation cannot be identified with INT-SEM-ROLE and the variable *y* thus has to be bound existentially. It may be noted that this goes against the view put forward in Grimshaw (1990, p. 68 ff.) that the first part of the compound is theta-marked by the head of the compound.

There is an important difference to the above binding of ρ which I did not discuss yet. In the case of *durch*, I argued that the preposition introduces a binding condition on ρ which does double work. It provides a specification of the ρ relation and simultaneously makes the binding of ρ by INT-SEM-ROLE impossible. But how is the ρ relation specified as AGENT if there is no agent contained in the representation of nP? What ensures that we get an AGENT interpretation and not just a random relation?

It is clear that we need to restrict the ρ relation in general. I hinted at relations such as possession and association, both of which admittedly are vague notions. It may very well be that ρ is only specified as some kind of associative relation in the case of *Lagebeschreibung der Bürgermeisterin* and that conceptual knowledge alone is responsible for providing the AGENT specification.[7] It may also be seen as an argument in support of such a view that the associative relation may also be specified otherwise. The phrase *Landschaftsbeschreibung der Bürgermeisterin* may refer to a description of a scenery which we somehow associate with the mayoress, as for instance in a case where it was the description of a scenery which was told to the mayoress. Thus, the mayoress is not necessarily an agent in *Landschafts- beschreibung der Bürgermeisterin*. I have no good answer to how such a process should look like, but I contend that any theory of adnominal modification has to deal with argument conceptualisation one way or the other; see also the discussion in Barker (1995, p. 73 f.).

I did not yet comment on the other interpretations of the ρ relation. As an indication of possible strategies, I shall only provide a hint at how one could imagine the emergence of the possessive interpretation. It may be assumed that a possessive reading may be instantiated whenever the semantic entity which enters a binding relation with z is itself also an individual. Two entities, or rather: an individual and an entity, may enter a possessive relation, whereas individuals and events do not enter possessive relations.

Let me finally briefly mention the case where both a genitive and a *durch* phrase modify the *-ung* nominalisation. In this case there is only one syntactic order which is acceptable since a genitive may only modify semantically a noun which it is adjacent to.

(15) a.   die Beschreibung der Landschaft durch   die Bürgermeisterin
            the description   the scenery   through the mayoress
            'the description of the scenery by the mayoress'
    b.   *die Beschreibung durch   die Bürgermeisterin der Landschaft
            the description   through the mayoress   the scenery
            intended: 'the description of the scenery by the mayoress'

The structure assigned to such cases would thus be as in Figure 2 (p. 204. An adjacency constraint would have to be added to the genitives to be able to achieve the correct distribution in these cases (see the remarks on adjacency in Section 2). The semantic analysis would be a combination of the two derivations presented above. First, the genitive is unified with the representation at nP as illustrated in (9), then the *durch* phrase is unified with the result of this combination as in (13).

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[7] As mentioned in Section 3.1, I assume that the nP does not include a Voice projection.
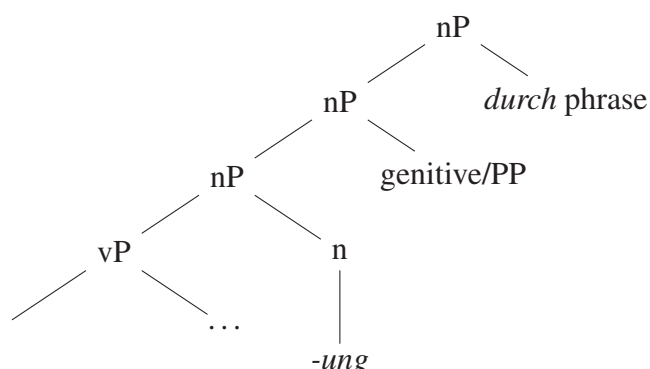
Figure 2: An nP modified by a genitive and a *durch* phrase

To conclude this section, I want to point at a principled issue which the above analysis raises: One may ask at which level semantic entities are available for modification. In this case, what is the latest level where the theme argument variable *y* may be bound? In most Distributed Morphology analyses, it is natural to assume that it is bound within the small clause as in the case of *Beschreibung* or within the root phrase for other *-ung* nominalisations, since the internal argument is inserted there. In my analysis, it is crucial that the variable is not bound within the vP.[8] Another possibility would be to assume that the modifying *-ung* suffix somehow makes bound variables available again. In such a case, it would be possible to existentially bind *y* within the small clause. After *-ung* has applied, *y* would become available once more for modification. Ultimately, the settling of this issue is a question of one's view of compositionality. I have to leave this issue for future research.

3.3 Apparent Counter-examples to the Freedom of ρ

Finally, I want to discuss briefly a generalisation which was proposed by Ehrich & Rapp (2000). In their paper on *-ung* nominalisations, they discuss different kinds of genitives and argue that in the case of certain *-ung* nominalisations, no other reading than the theme argument one is available for the genitive. They discuss a phrase like (16), in which the chancellor may only be interpreted as the internal argument (Ehrich & Rapp, 2000, p 274 ff.):

(16) die Absetzung des Kanzlers
      the unseating the chancellor
      'The unseating of the chancellor'

---

[8] It may further be assumed that as long as the variable is not bound, all structures and substructures in which the variable is embedded may be subject to modification. I will not discuss the consequences of this assumption.

This is at first hand somewhat surprising from the point of view of the analysis which I have presented here, given the underspecification of ρ and the flexible mode of composition. Unless some additional structural constraint may be found, there is no obvious reason why in the case of (16) no agentive interpretation is possible. Ehrich & Rapp claim that this is similar for all *-ung* nominalisation embedding a change of state predicate, like *absetzen* ('unseat'). This is certainly not a predication which my analysis could make. I think, however, that there are some data which weaken their claim considerably. Consider the examples in (17):

(17) a. die Kanzlerabsetzung   des Bundestages
         the chancellor.unseating the Bundestag
         'the Bundestag's unseating of the chancellor'
     b. Die Gruppe "Revolutionärer Kampf" protestierte gegen   die
         the group   revolutionary   struggle protested   against the
         todbringende Umweltzerstörung   des kapitalistischen System.
         deadly   environment.destruction the capitalistic   system
         'The group "revolutionary struggle" protested against the deadly de-
         struction of the environment by the capitalistic system'
     c. Eine Woche nach der Leitzinserhöhung   der Deutschen
         one   week   after the key.interest.rate.raising the German
         Bundesbank ...
         Bundesbank
         'One week after the raising of the key interest rate by the German Bun-
         desbank ...'

In the case of (17a), we may observe that the first part of the noun-noun-compound makes available an agentive reading of the postnominal genitive *des Bundestages* ('of the Bundestags'), assuming that chancellors cannot unseat parliaments. This is an effect similar to the case of *Landschaftsbeschreibung* (2c). What is more, in the case of the authentic examples (17b) and (17c) both *Zerstörung* ('destruction') and *Erhöhung* ('increase') involve changes of states. Still, the genitives in these cases may be interpreted as agents of the events described by the *-ung* noun. I thus conclude from the above that alternative explanations have to be sought for the Ehrich & Rapp data and that they do not constitute counter-evidence to my analysis.

4. Conclusion

I have presented a uniform analysis of postnominal genitives and PPs as modifiers of *-ung* nominalisations in German, in which I defended the following claims:

• All postnominal genitives and PPs occupy the same syntactic position. They are adjuncts of nP.

- All postnominal genitives and PPs are related to the head noun via an underspecified semantic relation which may be specified as being agentive in the case of a *durch* phrase, whereas in the case of genitives or *von* phrases it may either be unified with the semantic role of the theme argument or be specified otherwise according to the selectional and sortal restrictions of the nominalisation.

Although the analysis was limited to a specific phenomenon in German, I think there is a general point concerning the syntax-semantics interface to be made from the story which was told in this paper.

Within Distributed Morphology, a rather rigid view of the syntax-semantics interface seems to be predominant, according to which every semantic variation is also necessarily reflected in syntax. While one cannot object against this as such, it may be noted that it is a view which has a rather unattractive consequence: Due to the lack of evidence for some of the word-internal structures, much of the evidence for variation in syntax often turns out to be purely semantic in nature.

In this paper, I contended that as long as there is no clear syntactic evidence that postnominal genitives and PPs should be differentiated syntactically in the case of German, we should not let semantic considerations alone lead us to the postulation of structural differences. As was shown, this puts more workload on the semantic side of the interface. One cannot achieve a simplified surface-oriented syntax without making more complex semantic assumptions. In the case of the present analysis, I have to apply more elaborate binding mechanisms than Roßdeutscher (2007), for instance.

I would like to emphasise that I do not claim that the syntactic, Distributed Morphology way of analysis is incorrect and that the simplified syntactic view is the only plausible one. Two analyses may first and foremost be compared with respect to the predictions they make with respect to grammaticality and issues of interpretation. The above comments relate to the question of which part of the syntax-semantics interface one wants to do be the driving force of interpretation. In the Distributed Morphology approach, syntax seems to be taking over ever more elements which have traditionally been considered semantic in nature. Contrary to that, I have provided a simplistic syntactic analysis which exploits semantics mechanisms of underspecification and unification as a mode of composition. Whether in this case the syntax is too simplistic and the semantics is too powerful is a question which I will have to leave open for future research. Still, I hope to have shown that it is a path which is worth exploring.

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Torgrim Solstad
Department of Natural Language Processing
University of Stuttgart
Azenbergstr. 12
D-70174 Stuttgart

torgrim@ims.uni-stuttgart.de

The division of the causative eventive chain by means of -ment and -age[*]

Melanie Uth

University of Stuttgart

In this paper I will investigate process and result nominals in -age and –ment, which are derived from verbs participating in the causative/anti-causative-alternation (henceforth labelled "alternating verbs"). First of all, it will be empirically shown that –ment-nominals have both the anti-causative reading and the resultant state reading, whereas process nominals in –age focus on the causing process and result nominals in –age only appear in applicative constructions. Ehrich & Rapp (2000) assume that the causative eventive chain consists of a causing process and a change-of-state event that takes the resultant state as its situational argument. Following that, I will conclude from the empirical evidence that –ment nominalizes the change-of-state event, while –age nominalizes the causing process. Furthermore, I will model the relevant –age- and –ment-nominals in terms of Lieber's (2004) conceptual structures and discuss the question whether we may assume that –ment and –age introduce different aspectual operators.

1. Introduction

In this paper, I will analyze the properties of process and result nominals in -age and -ment that are derived from bases denoting parts of what I will call the causative eventive chain. As regards the relationship between the different parts, I adopt the view advanced by Ehrich & Rapp (2000) according to which this eventive chain consists of two sub-events, a causing process *r* and a change-of-state event *e,* which takes the resultant state it culminates in as its situational argument. The specific alignment of *r* and *e* is interpreted as a causative event *e* by means of a lexical redundancy rule (cf. ibid.: 258):

$$
\begin{array}{c}
\text{CAUSE (e)} \\
\diagup \quad \diagdown \\
\text{DO (r)} \qquad \text{BECOME (e)} \\
| \\
\text{BE (s)}
\end{array}
$$
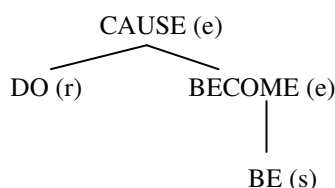
Fig. 1: The causative eventive chain according to Ehrich & Rapp (2000)

I assume that alternating verbs are underspecified regarding the denotation of the several parts of the causative eventive chain (cf. Piñon (2001)), and that

their denotation is specified by means of further contextual influences as e.g. inflectional morphology (1a), or the number, the thematic roles and the quantificational constitution of their arguments (1b,c):

(1)   a.   Le ballon **est gonflé**.   resultative
               'The balloon is inflated.'
      b.   Le ballon **gonfle**.   anti-causative
               'The balloon becomes inflated.'
      c.   Pierre **gonfle** le ballon.   causative
               'Pierre pumps up the balloon.'

Concerning event nominalizations, the formal segregation of expressions denoting the resultant state from expressions denoting the dynamic parts of the causative eventive chain (cf. 1) is largely cancelled, as evidenced by the many cases of event nominalizations that are ambiguous between the process reading and the resultant state reading (cf. e.g. Dubois (1962:13f)). In this paper, it will be shown that –ment-nominals occur in both the BECOME-reading (process nominals) and the BE-reading (result nominals), whereas process nominals in –age focus on the causing process, while result nominals in –age only appear in applicative constructions. From this evidence I will conclude that the nominalization procedure initialized by –age does not extend to the second sub-event of the causative eventive chain, contrary to the one represented by –ment that is restricted to precisely this sub-event:
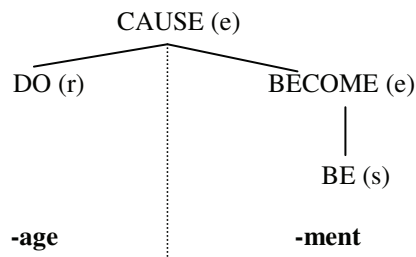
Fig. 2: Division of the causative eventive chain by means of –ment and -age

The structure of the paper is as follows. Sections 2 and 3 present previous analyses as well as new data concerning the restriction of the denotational range of –ment and –age to the respective sub-events. Section 4 provides some suggestions as to how this difference might be modelled in terms of the morphosemantic formalism proposed by Lieber (2004). In Section 5, –ment and –age are analyzed as introducing aspectual operators, in a way such that the differences observed in the realm of alternating base verbs might possibly be attributed to more general aspectual differences that have been ascribed to the suffixes for independent reasons by e.g. Bally (1965), Martin (this volume), or Uth (2008).

2.   The semantics of –ment-nominals derived from alternating verbs

Concerning event nominalizations in -ment derived from alternating verbs, it is already noted by Dubois & Dubois-Charlier (1999) that they generally denote the change-of-state-event if they occur in the process reading:

(2)   la température **s'adoucit**   -> **l'adoucissement** de la température
       'the weather becomes mild'   'the becoming mild of the weather'

The hypothesis that the denotation of process nominals in -ment is generally restricted to the change-of-state component was first explicitly put forward by Martin (2007). Martin states that if we compare „agent-less" sentences with -age-nominalizations to sentences with -ment-nominalizations, both being derived from alternating verbs (as in (3a and b)), only the denotation of the -age-nominals extends to the causing process. This is shown by the fact that only in (3a) the causing process is to be necessarily witnessed for the sentence to be true. The -ment-suffix does not refer to any part of the causing process, as is evidenced by the non-entailment in (3b). Reference to the causing process may however be introduced by additional constituents, as e.g. a *par*-phrase denoting the agent of the action (3c):

(3)   a.   Pierre a assisté au **gonflage** des ballons.
             'Pierre witnessed the inflating of the balloons.'

             -> Pierre witnessed the causing event.

       b.   Pierre a assisté au **gonflement** des ballons.
             'Pierre witnessed the inflating of the balloons.'

             -/-> Pierre witnessed the causing event.

       c.   Pierre a assisté au **gonflement** des ballons **par Paul.**
             'Pierre witnessed the inflating of the balloons by Paul.'

             -> Pierre witnessed the causing event.

In order to evaluate this generalization, I extracted 100 types of -ment-nominals from a New French text corpus.[1] This data sample contains 56 types (328 tokens) of -ment-nominals derived from alternating verbs. The share of nominalizations occuring in the process reading amounts to 123 tokens (vs. 205 result nominals). In line with Martin's (2007) line of argumentation, Table 1 shows that the relevant process nominals in -ment mostly denote pure change-of-state-events (i.e. in 103 out of 123 cases). 14 tokens are ambiguous concerning the implication of the causing process, i.e. whether or not these occurrences of -ment-nominals imply the causing process can not be determined. Finally, there are six

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[1] The corpus sample is extracted from the categorized version of the FRANTEXT database (http://www.frantext.fr/categ.htm). It consists of 3 Million words and ranges from 1987 to 1997.

cases that disprove the above hypothesis at first sight, as the denotation of the -ment-nominals seems to extend to the causing process:

reading	*freq_ tokens*
1. change-of-state	
Acteur « professionnel », j'avais connu (...) l' **aplanissement** progressif **des bruits** quand la lumière baisse (...). (Le pas silent de l'amour, p. 254) 'As a professional protagonist I had known (...) the progressive slow-down of the noise when the light was slowly switched off (...). '	103
2. ambiguous (change +cause?)	
(...) la Libération, **l'achèvement de la guerre** semblaient marquer la fin d'une époque, (...). (Le bonheur à San Miniato, p. 251) 'The Liberation, the ending of the war, seemed to mark the end of an era.'	14
3. causation (change + cause)	
Un livre, cela se fait comme un meuble, par **ajustement** patient **de pièces et de morceaux**. (Le medianoche amoureux, p. 183) 'A book is made like a piece of furniture, by patiently adjusting pieces and components.'	6
total	**123**

Table 1: Share of different denotational ranges of process nominals in –ment

However, there are further pieces of evidence clearly confirming Martin's hypothesis. For example, I found various -ment-tokens co-occurring with PPs or verbal predicates that denote a causing process, thereby explicitly reducing the denotation of the -ment-nominal to the change-of-state-part:

(4)   a.   Réveillée par l'**amusement** que lui cause cette découverte, elle se
              lève enfin et se regarde dans la glace. (Les oeufs de Paques (p. 60f)
              'Aroused by the amusement caused by this discovery, she finally gets
              up and looks at herself in the mirror. '

       b.   Mais ce n'était pas l'argent qui donnait à M.. de Chamilly tant d'
              apaisement et de calme. C'était son éducation, sa famille, son passé.
              (La douane de mer, p. 375f)
              'It wasn't the money which gave so much appeasement and calmness
              to M. de Chamilly, but it was his education, his family and his past.'

c. Ce paysage de rizières n'appelait pas le coup de foudre, mais le lent **attachement** qu'éveille, avec le temps**,** la précaution des femmes intelligentes. (Les Samourais, p.68)
'This scenery of paddy fields didn't excite love at first sight, but the slow adherence which the precaution of intelligent women provokes over the years.'

Another piece of evidence in favour of Martin's (2007) hypothesis comes from lexicographic definitions that explicitly contrast -ment-nominalizations derived from alternating verbs with their doublets in -age. In such definitions, the denotation of the -ment-nominalization is clearly restricted to the BECOME-part of the event denoted by the verbal base, whereas the -age-nominal denotes the DO-component:

(5) a. **L'échouage** est volontaire, par exemple pour caréner la coque d'un navire; alors que **l'échouement** est subi, par exemple lors (...) d'une maneuvre manquée. (http://fr.wikipedia.org/wiki/%C3%89chouage)
'The "échouage" is voluntary, for example in order to careen the hulk of a ship, whereas "l'échouement" is being sustained, for example during a (...) failed manoeuvre.'

b. **L'arrosement** est accompli par un phénomène naturel; **l'arrosage** est dû à des moyens artificiels mis en action par l'homme.
(Colignon & Berthier (1996: 44))
'"L'arrosement" is accomplished by a natural phenomenon whereas "l'arrosage" is due to artificial means introduced by humans.'[2]

In view of this evidence, it seems reasonable to suppose that in the apparent counterexamples cited above, the causative component is introduced by other means than the -ment-nominalization itself. A further example supporting this analysis is (6), in which the –ment-nominal clearly denotes the change of state (the loss of weight), while the cause of this loss of weight is adjoined by means of the *par*-phrase:

(6) (...) grâce à l'absorption d'ampoules de Trophisan à base de glucides j'avais récupéré mon poids d'avant l' **amaigrissement par le zona**, c'est-à-dire soixante-dix kilos. (A l'amie qui ne m'a pas souvé la vie, p. 20)
'(...) thanks to the absorption of ampullae of carbohydrate-based Trophisan, I had regained my weight which I had before the excessive losing of weight caused by the zoster and that is 70 kilos.'

---

[2] These examples demonstrate a further distinctive characteristic between –ment and –age that is also discussed by Martin (2008), referring to Kelling (2004), namely the fact that –age, contrary to –ment, is excluded in purely non-agentive contexts. In this paper, this difference is largely disregarded for several reasons, but see section 5.

All in all, I take the evidence above to support the hypothesis that the denotation of process nominals in -ment does not extend to the causing process. This characteristic may best be accounted for by assuming that -ment nominalizes the BECOME(BE)-component of the underspecified base verbs, and that –ment-nominals occurring in the process reading denote the first subpart of this component, i.e. the change-of-state-event:

BECOME ((BE ((y) s)) **e**)

denotation of process nominals in -ment
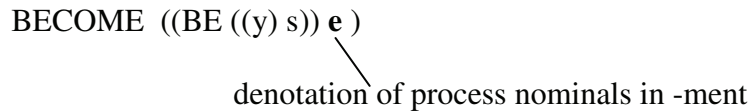
Fig. 3: Denotation of process nominals in –ment from alternating verbs

As regards result readings in -ment, it is first of all striking that compared to -age, -ment is generally taken to be rather resultative (cf. Huot (2005: 75)). The examples commonly given to illustrate this peculiarity of -ment-derivatives are resultative constructions, in which "le sens résultatif de "état" ou de "résultat" prévaut sur le sense de "action" "('the resultative meaning outweighs the "action" meaning', Dubois & Dubois-Charlier (1999:22)):

(7)   Paul **est entêté**, cela lui nuit.   =>   **l'entêtement** de Paul lui nuit.
       ('P is stubborn, this fact harms him.')   ('P's stubbornness harms him.')

These (lexicalized) occurrences of –ment-derivatives indicate towards the assumption that result nominals in -ment denote the state resulting from the change of state that is denoted by the very same -ment-derivative when it occurs in the process reading. In order to examine this generalization closer, I investigated the result-related definitions given by the Petit Robert (1993) (henceforth PR 1993) for the -ment- nominals derived from alternating verbs that we extracted out of our FRANTEXT corpus sample. The PR 1993 attests resultant state readings for 44 out of these 56 types of -ment-nominalizations. As will become evident in Section 3, these Figures are in clear contrast with the ones obtained for -age, for which the PR 1993 does not attest resultant state readings at all. Table 2 gives a categorization of the different definitions:

	definition PR	*example*	*freq_ type*
Type A "état de" ('state of')	**état de** ce qui est descendu ('state of what is fallen')	Que quelques hommes aient pu s'amouracher de cette latrine, c'est bien la preuve de **l' abaissement** des hommes de siècle**.** (La douane de mer, p. 574) 'The fact that some people became infatuated with this latrine shows the decay of the people of this century.'	26
Type B "fait de" ('fact of')	**fait d'être** ajusté ('fact of being adjusted')	Tout, de cet arbre - y compris **l'ajustement** précieux des lamelles d'écorce entre leurs crevasses - semble encourager l'artiste à la seule fidélité maniaque dans la reproduction. (Carnet du grand chemin, p. 117) 'Everything of this tree – including the precious adjustment of the lamellas of bark between their crevices – seems to encourage the artist to the unique and manic fidelity in the way of reproducing.'	4
Type C synonym	„fin" ('end')	La vie m'avait tant donné, avec tant de surprises et de générosité, que je ne redoutais pas la mort qui **en** était **l' achèvement.** (La douane de mer, p. 17) 'Life has given me so much with so many surprises and generosity that I don't fear death which is the completion of life.'	14
total			**44**

Table 2: Categories of result-related definitions of –ment-nominals in the PR 1993

As expected, result nominals in -ment generally denote the state that results from the change denoted by the same nominalization occurring in the process reading. Crucially, the same argument that undergoes the change-of-state *e* is in the resulting state *s* after experiencing *e*:

(8) a.   <u>la vie</u> s'achève   =>   <u>la vie</u> s'est achevée
             'life is running out'   **'**life has ended'
  b.   l'achèvement de <u>la vie</u>   =>   l'achèvement de <u>la vie</u>
             'the ending of life'   'the end of life'

Based on Ehrich & Rapp's (2000) event semantics, according to which the BE-component is to be conceived of as an argument of the BECOME-component, we may argue that process nominals in -ment and result nominals in -ment actually denote different subparts of one and the same change-of-state event:

$$\text{BECOME} \quad ((\text{BE} \; ((\text{y}) \; \mathbf{s})) \; \mathbf{e} \;)$$

-ment - result nominals   -ment - process nominals
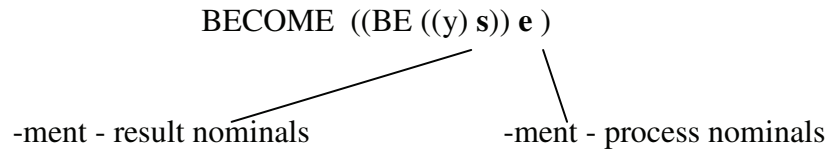
Fig. 4: Denotational range of–ment-nominals derived from alternating verbs

Evidently, the overall denotational range of the derivatives extends to both subparts of the BECOME(BE)-component. Since context-free –ment-nominals derived from alternating verbs are, furthermore, inherently ambiguous between the change-of-state reading and the resultant state reading, I assume that the relevant –ment-nominals generally denote the entire BECOME(BE)-component and that the precise range of their denotation (i.e. change-of-state or resultant state) needs to be determined by further contextual information.[3]

3. Semantic characteristics of –age-nominals from alternating verbs

As regards nominalizations in -age derived from alternating verbs, Dubois & Dubois-Charlier (1999) give several examples suggesting that the denotation of process nominals generally includes the causing component:

(9)   le bûcheron **abat** les arbres   =>   **l'abattage** des arbres par le bûcheron
         'the lumberjack is chopping trees'   'the felling of trees by the lumberjack'

As already alluded to in Section 2, Martin (2007) argues that their denotation necessarily includes the causing process, since in the case of agent-less -age-nominalizations, the causing process necessarily has to be witnessed for the sentence to be true. The pertinent example is (3c), repeated below as (10).

(10) *Pierre a assisté au **gonflage** des ballons.*
         'Pierre witnessed the inflating of the balloons.'
          -> Pierre witnessed the causing event.

In order to account for this hypothesis, I extracted 100 types of -age-nominals from the database described above. In the case of -age, we obtained 27 types derived from alternating verbs that split into 134 tokens, 71 of which have a process reading. As shown by Table 3 and in line with Martin's (2007) line of argumentation, the denotation of the relevant process nominals generally includes the causing process. 5 tokens are ambiguous concerning the implication of the causing component. Finally, there are indeed 11 cases that seem to refute the

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[3] The specification of the denotational range of –ment-nominals in context might possibly be conceived of as a twofold ambiguity resolution in terms of "bridging" and "thinning", in analogy to what is proposed by Roßdeutscher (2008) in order to describe the resolution of the process-result-ambiguity of German –ung-nouns.

hypothesis above, as the denotation of the -age-nominals does not extend to the causing component:

reading	freq_token
1. causation (change + cause) Une autre fois, il s'est agi d'encourager **l'élevage des sangliers en Alsace**, de là à franchir les Pyrénées pour se retrouver en Algarve au sud de Lisbonne où (...). (Les greniers de Seinne, p. 29f) 'Another time it was about encouraging the breeding of wild pigs in Alsace and from there surmounting the Pyrenees in order to find oneself again at the Algarve, south of Lisbonne, where ....'	55
2. ambiguous Mona s'attaquait à son **bronzage**. Avec application. (Gouttière) 'Mona tackles her browning. With application.'	5
3. change-of-state Surpris par le **démarrage** subit **de son collègue,** il a regardé partout, m'a aperçu, et a mis la main à sa poche. (La clef des mensonges, p. 43f) 'Surprised by the sudden starting of his colleague, he looked all-around, noticed me and put his hand in his pocket.'	11
total	**71**

Table 3: Share of different denotational ranges of process nominals in –age

All in all, I take the pattern in Table 3 to establish another supporting aspect for the hypothesis that the denotation of process nominals in –age derived from alternating verbs generally implies the causing component.

In the following, I am going to argue that the relevant process nominals in -age constitute only nominalizations of the causing component, and that any information concerning the respective change-of-state event is contributed to the derivative's semantics by virtue of the base verb. There are two kinds of evidence leading to this assumption. First of all note that 36 out of the 56 clearly causative process nominals in -age of our database emphasize the causing process. These nominals appear to be derived from causative base verbs in absolute constructions that likewise focus on the causing component (cf. Goldberg (2001: 512f)):

reading & example	freq_token
1. emphasis on causing process La succession brusquée des ombres et des lumières intérieures semble tenir du rêve non seulement sa toute-puissance sur l'esprit, mais aussi sa soudaineté sans cause, et son **éclairage** sans foyer lumineux. (Carnets du grand chemin, p. 59) 'The abrupt succession of shades and interior lights seems to take from the dream not only his omnipotence over the mind, but also his abruptness without cause and his lighting without luminous source.'	36
2. neutral Une autre fois, il s'est agi d'encourager **l'élevage des sangliers en Alsace**, de là à franchir les Pyrénées pour (...). (Les greniers de Seinne, p. 29f) 'Another time it was about encouraging the breeding of wild pigs in Alsace and from there surmounting the Pyrenees in order to ....'	20
total	**56**

Table 4: Share of –age process nominals with emphasis on causing process

There are different characteristic contexts of -age-nominals that may be conceived of as reflecting this general tendency. For example, in our database we find many collocations containing -age-derivatives that clearly focus on the causing activity, in some cases to the extent that the change-component is completely neglected:

(11) a. faire dans le **bronzage** ('to engage in tanning business');
faire dans l'**abattage** ('to prostitute oneself');

b. l'art du **déchiquetage** ('the art of fragmenting/fragmentation');
l'art du **cisaillage** ('the art of cutting') ;
les barres de **bloquage** ('closing device');
le système d'**éclairage** ('lighting system');   etc.

Another case in point are examples in which the change-component either lacks altogether (12a) or is explicitly denoted by further constituents, i.e. *ajustement* in 12b and *combustion* in 12c:

(12) a. [À] midi, sous l'**éclairage vertical**, le canyon, moins sonore, n'est pas beaucoup plus qu'une gorge aride qui (...). (Carnet du grand chemin, p. 56)

'At noon, under the vertical lighting, the canyon which seems less sonorous is barely no more than an arid gorge which (...)'

b. [**L'ajustage** est une o]pération destinée à donner à une pièce la dimension exacte que requiert son **ajustement** à une autre. (PR 1993)
'Adjusting is a process destined to give a piece the accurate dimension which requires his adjustment to another piece.'

c. Comment ce vide fonctionne-t-il lors de **l'allumage de la combustion** et de l'explosion de la fusée ? (Le medianoche amoureux, p. 102)
'How does this vacuum work during the firing of the combustion and the explosion of the missile ?'

The general tendency of the -age-derivatives to focus on the causing component is also evidenced by -age-derivatives that have developed lexicalized absolute readings by metonymic shift:

(13) éclairage (abs)   =   glow
      maison d'abattage (coll.)   =   brothel
      débloquage (dire des sottises, coll.)   =   talking rubbish

To sum up, I take the evidence above to suggest that the relevant -age-derivatives as such only denote the causing process, while any information regarding the respective change-of-state event is contributed by the base verb:

DO $((x,y)$ **r**$)$ & BECOME $((BE ((y) s)) e)$

denotation of process nominals in -age
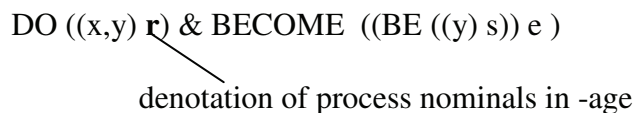
Fig. 5: Denotation of process nominals in –age derived from alternating verbs

However, the most important evidence in favor of this hypothesis comes from the relevant result nominals, since these never appear in the resultant state reading that is typical for the respective –ment-nominals. Interestingly, only 10 out of the 27 relevant -age-types of our corpus sample show up with result-related definitions at all. Circumscriptions by virtue of "état de" etc. are largely absent: [4]

(14) allumage: ensemble des organes assurant l'allumage
                 'ensemble of organs which assure firing'

      arrosage: quantité d'eau fournie (...) à une terre cultivée
                 'water which is delivered to a cultivated field'

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[4] The PR 1993 notes for *collage* "état de ce qui est collé", and for *bloquage* "fait d'être bloqué", however. Furthermore, there are three result nominals denoting places that might be attributed to metonymic shift.

brouillage: trouble dans la réception des ondes de radio, de télévision [etc.] (...) dû à l'addition d'un signal différent du signal émis 'trouble with radio or television reception due to adding a different signal to the signal emitted'

chauffage: les installations qui chauffent
'heating installations'   (PR 1993)

If we take into consideration the lexical semantics of the base verbs, it becomes evident that 9 out of the 10 -age-nominals of our corpus sample that are given result-related definitions by the PR 1993 are basically derived from so-called applicative verbs.[5] Applicative verbs denote causative eventive chains, in which the PATIENT - argument is affected by virtue of applying to it a concrete or abstract object, the applicans, as for example in the case of German *bespritzen* ('besprinkle'). In this case, the applicative function APPL is sub-ordinated to the BECOME-component, too, since the change consists in (gradually) affecting the PATIENT - argument (y) by virtue of an artefact (z):

(15)   Hans (x) bespritzt die Wand (y) mit Farbe (z):
       'Hans spatters the wall with colour'

       DO ((x,y) r) & BEC ((APPL ((z,y) s)) e) (cf. Ehrich & Rapp (2000: 260))

In a subclass of these cases, the applicative causation accounts for the coming into being of a new object that corresponds to the applicans, applied to the PATIENT–argument during the causing process. A well-known example is Ger. *übersetzen* ('translate') that causes the coming into being of a *Übersetzung* (res) ('translation'). In such cases, the BECOME - function takes for its arguments both the APPL- and the BE-function, since the change-of-state-event comprises both, the application of an additional argument to the PATIENT and the simultaneous coming into existence of the additional argument (or rather its concretion, resulting from its application to the PATIENT, respectively):

(16)   Hans (x) übersetzte (>z) das Buch (x) ('...'):
       'Hans translated the book'

       DO ((x,y) r) & BEC (((BE (z) & APPL (z,y)) s) e)   (cf. ibd.)

Due to a lack of an appropriate terminology, I will call this category the APPL-EXIST category. Note that the result of applying the additional argument (z) to (y) is not the result of a change-of-state-event. The change taken by the PATIENT-argument does not result in a "translation", but in a state of being translated. Instead, the "translation" has to be conceived of as the result of the

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[5] The one counterexample is *élevage*. However, the base verb of this lexeme is not in a direct alternating relationship to the anti-causative counterpart, since its meaning is narrowed to denote the process of breeding animals, in a technical sense. Therefore, I do not want to go into details as regards this nominal.

causing process (i.e. the DO-function in the above representations), since the coming into being of (z) results from the fact that "(x) applies it to (y)". Coming back to our result nominals in –*age*, it is interesting to note that all of them denote the applicans (z) that is applied to the PATIENT argument. The result nominals of the APPL-category develop an instrument reading since the applicans is conceived of as serving a specific purpose in a technical context. The semantics of the relevant result nominals and their base verbs is illustrated by (17a and b):

(17) a. arrosage < arroser: to water -> x gives **water** to y
         allumage < allumer: to fire -> x gives **fire** to y
         éclairage < éclairer: to light -> x gives **light** to y
         chauffage < chauffer: to heat -> x gives **heat** to y

b. Le jardinier (x) arrose (> z) les fleurs (y)
    'The gardener irrigates the flowers'

    DO ((gardener$_i$, flowers$_j$) r) & BEC ((APPL ((**water$_k$**, flowers$_j$) s)) e)

The remaining result nominals in -age are basically derived from verbs belonging to the APPL-EXIST category.[6] They exhibit an object reading, since they denote the object that comes into being when (z) is applied to (y):

(18) a. brouillage < brouiller: to interfere -> x gives **interference** to y
         blocage < bloquer: to block -> x gives **a blockade** to y
         bronzage < bronzer: to suntan -> x gives **suntan** to y
         clivage < cliver: to split -> x gives **a split** to y

b. Ce signal (x) brouille (> z) la réception des ondes de radar (y)
    'The signal disturbs the reception of ray.'

    DO ((signal$_i$, radar ray$_j$) r) & BEC (((BE (**brouillage$_k$**) & APPL (brouillage$_k$, radar ray$_j$)) s) e)

Finally note that the -age-nominals that are derived from non-applicative causative verbs do not develop result readings at all:

(19) Le bucheron abat les arbres.
      'The lumberjack is chopping trees'

      DO ((x,y) r) & BEC ((BE ((y) s)) e)

To sum up, Figure 6 illustrates the denotational range of our –age process and result nominals:

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[6] The missing nominal is *collage*, which will not be analyzed in detail in this paper, cf. footnote 6.

6a: non-applicative
base verbs

$$DO\ ((x,y)\ \mathbf{r})\ \&\ BEC\ ((BE\ ((y)\ s))\ e)$$

-age process nominals (no results)

6b: applicative
base verbs

$$DO\ ((x,y)\ \mathbf{r})\ \&\ BEC\ ((APPL\ ((z,y)\ s))\ e)$$

-age process nominals   -age result nominals

Fig. 6: Denotational range of -age-nominals derived from alternating verbs

I would like to emphasize once again that the denotation of the result nominals in –age crucially differs from the resultant states denoted by the result nominals in -ment. The results denoted by –ment-nominals are equivalent to resultant states, whereas the results denoted by the above result nominals in –age are additional entities that come into existence next to the resultant states. The fact that the only results denoted by the -age-nominals are intimately related to the DO-component constitutes further evidence in favor of the assumption that the scope of the nominalization procedure initialized by -age does not extend to the change-of-state event.

4.   Lexical conceptual semantics of –ment- and –age-nominalizations

I argued above that –age-nominals as such only denote the causing process, and that any information concerning the respective change-of-state event is contributed by the base verb. In order to clarify this intuitive description, I would like to propose an analysis in terms of Lieber's (2004) lexical semantics, since this may help to formalize the interaction between the semantics of the affix and the semantics of the bases. Lieber argues that whenever a noun-forming derivational affix is attached to a verbal base, its R-argument[7] is co-indexed with one of the arguments of the base verb, co-indexation meaning that "the two arguments are identified referentially with each other" (ibid.: 61). The suffix being the head, the specific way of co-indexing its referential argument to one of the base's arguments determines the denotational properties of the entire derivative:

(20) *writer*
      [+material, dynamic ([i   ], [+dynamic ([i   ], [   ])])]
        -er   *write*   (ibd.: 68)

According to the (violable) Principle of Co-indexation, the –er-suffix in (20) is co-indexed with the "highest and preferably unindexed" (thematic) argument of the base verb, resulting in a nominalization that is interpreted as the AGENT performing the process denoted by the derivational base (ibd: 61-68). Evidently,

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[7] ...that is introduced with reference to Higginbotham (1985) and others to encode the referential properties of nouns... .

in such a representation the semantics of the derivational base essentially influence the denotation of the entire derivative, as shown by the mere fact that an agent nominalization denotes the particular AGENT that performs the process denoted by the base verb.

Lieber (2004) apparently does not allow for referential arguments of verbs to be represented in the lexical conceptual structures. However, I would like to argue that if we adhere to the hypothesis that the suffix's R-argument determines the denotational range of the derivatives, then the mere existence of event nominalizations forces us to enlarge the representation of verb meanings to include the event-, state- and process arguments proposed by e.g. Ehrich & Rapp (2000), since event nominalizations generally denote processes, events or states. Based on Lieber's (2004) lexical semantic representation of causative verbs as Engl. *V-ize* and *V-ify*, I would therefore like to propose the following tentative representation of the causative base verbs of our -age-nominals:

(21) [+dynamic ([r], [$_i$], [$_j$])   ; [+dynamic, +IEPS ([e], [$_j$], ([+Loc ([s]),
      DO   BECOME   APPL
      [-dynamic ([s], [$_j$])])))])
      BE

In (21), the referential properties of the causative verb are encoded by means of Ehrich & Rapp's (2000) process variable r, the change-of-state variable e, and the resultant state variable s. The i-indexed argument position represents the AGENT-argument, the j-indexed argument positions represent the PATIENT-argument. The change-of-state event is characterized as +dynamic and goal-directed (+IEPS),[8] while the resultant state is characterized as -dynamic. The referential arguments of process, event and state are aligned to the left side of the thematic arguments since in Lieber's representation the hierarchical ordering of arguments is signalled by linear order. The [+Loc]-function roughly equals Ehrich & Rapp's APPL-function discussed above in the context of result nominals in -age. Since Lieber models the conceptual semantics of English *–ize/-ify* – verbs, she proposes that all causative structures imply the Loc-function. However, we may easily retain the difference between applicative and non-applicative verbs by assuming that in the case of non-applicative verbs, the referential argument of the Loc-function is co-indexed with the referential argument of the [-dynamic]-function representing the resultant state. Conceived this way, the representation of applicative causatives differs from (21) only in the fact that the argument of the +Loc-function is not co-indexed with the referential argument of the resultant

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[8] "IEPS" is an abbreviation for "inferable eventual position or state" and is meant to encode that the respective eventuality progresses towards a determinate goal, distinct from the starting-point.

state. With reference to Ehrich & Rapp (2000), we introduce the variable z to represent the applicans applied to the PATIENT in applicative structures: [9]

(22) [+dynamic ([**r**], [$_i$], [$_j$])   ; [+dynamic, +IEPS ([**e**], [$_j$], ([+Loc ([**z**]),
      DO   BECOME   APPL
      [-dynamic ([**s**], [$_j$])])])])
      BE

Based on these representations, we may now tentatively determine the lexical conceptual representations of our -age-nominals by means of co-indexing the referential argument of the causing process r with the R-argument of the suffix, in such a way that the denotation of the nominalization becomes restricted to this first component of the base's entire denotation:

(23)   [-material, dynamic ([**r**] ; [+dynamic ([**r**] [$_i$], [$_j$]) ; [+dynamic,
               -age   *abatt-*
       +IEPS ([**e**], [$_j$], ([+Loc ([**s**]), [-dynamic ([**s**], [$_j$])])])])]]

The representation of process nominals derived from applicative verbs is very similar. The only difference is that the thematic argument of the LOC-function is not co-indexed with the situational argument of the resultant state:

(24)   [-material, dynamic ([**r**] ; [+dynamic ([**r**] [$_i$], [$_j$]) ; [+dynamic,
               -age   *arros-*
        +IEPS ([**e**], [$_j$], ([+Loc ([**z**]), [-dynamic ([**s**], [$_j$])])])])]]

Evidently, the relevant process nominals in –age are interpreted as denoting a causing process that is in a causal relation to a specific change-of-state event, denoted by the derivational base - just as the agent nominal in (20) may be interpreted as denoting the performer of the action denoted by the derivational base. Nevertheless, an *abattage* is primarily a causing process, just as a *writer* is primarily an AGENT. The second argument available for –age, next to the r-argument representing the causing process, is the z-argument of the Loc-function. I do not want to go into details concerning the concrete mechanisms motivating the restriction of the –age-denotation to this argument. Though evidently, the z-argument is in an intimate relation to the DO-component, since it comes into existence by virtue of x's applying something to y. For the time being, I will rely on this fact to maintain our generalization that the nominalization procedure

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[9] In (21) and (22) I depart further from Lieber (2004) in the way that I do not include a CAUSE-component into the second sub-event. Instead, I adopt the view proposed by Wunderlich (1997) that causativity is established by means of a lexical redundancy rule that assigns a causal relationship to all instances of DO-BECOME-strings (cf. Section 1). Furthermore, I subordinate the APPL/BE-component to the BECOME-component and I equate the base of the causative verb with the resultant state s that is experienced by the undergoer of the change, i.e. j.

represented by –age does not extend to the second sub-event of the causative eventive chain, i.e. to the BECOME (BE)-component.

By contrast, the relevant –ment-derivatives do precisely attach to bases denoting the change-of-state component. Hence, we may derive the relevant lexical conceptual representation by co-indexing the referential argument of the change-of-state event of the anti-causative base with the R-argument of the suffix:

(25) [-material, dynamic ([**e**]; [+dynamic, +IEPS ([**e**], [$_j$], ([+Loc ([**s**]), [-
               -*ment*   *aplanisse*-
      dynamic ([<u>**s**</u>], [$_j$])]))])]

Since from our point of view the resultant state is to be conceived of as a situational argument of the change-of-state-component, this operation links the R-argument of the suffix to both, the BECOME-component as well as the BE-component. That means, I assume that –ment nominalizes denote the overall second sub-event of the causative eventive chain, that consists of two hierarchically ordered subparts. As already alluded to in Section 2, I assume that the relevant –ment-nominals generally denote both parts of this sub-event and that their denotation may only be restricted to one of the two parts by means of contextual influences (cf. footnote 3).

The lexical conceptual structures developed in this Section account for the complex characteristics of the –ment- and –age-nominals presented in Sections 2 and 3: result nominals in –age never adopt the resultant state reading and process nominals in -age focus on the causing process, since the R-argument of the suffix is co-indexed with the DO-component. By contrast, the relevant –ment-nominals are inherently ambiguous between the change-of-state reading and the resultant state reading, since the R-argument of the suffix is co-indexed with the BECOME(BE)-component.

5.   Do -ment and –age introduce aspectual operators?

Since we part from the hypothesis that –age attaches to bases denoting the whole causative eventive chain, while –ment attaches to bases denoting anti-causative events, the co-indexation patterns above are in fact in line with Lieber's violable Principle of Co-Indexation, according to which the "highest (preferably unindexed) argument of the suffix is to be co-indexed with the highest argument of the base" (cf. above). As regards the violability of the principle, Lieber argues that "[i]f no consistent argument exists, it is sometimes apparently possible to co-index the head argument with the least incompatible nonhead argument" (ibid.: 65). For example, the agent nominalization *standee* results from the co-indexation of the suffix's R-argument specified for sentience and non-volitionality with the external argument of *stand* that is specified as "?volitional" [sic]. And in fact, the

lexeme *standee* exhibits precisely the "odd meaning nuances" predicted by a (weak) violation of the Principle of Co-indexation, the referent being "not clearly volitional, but also not clearly nonvolitional" (ibd.). Furthermore, Lieber puts forward the hypothesis that "this type of –ee-derivatives is intuitively far less productive than the usual "patient" forms" (ibid.: 66), and she argues that this is the case because such semantically abnormal derivatives "are coined only when the argumental mismatch seems to allow for a nuance of interpretation that is (...) in some way contextually or pragmatically forced" (ibid.: 66). Drafted this way, the Co-indexation Principle may not only predict the regular semantics of several derivational procedures, but it also accounts for the degree of "sense abnormality" of a given derivative, as well as for the degree of productivity of the relevant derivational procedure. Hence, in order to account for the co-indexation pattern of our –ment- and –age-nominals derived from alternating verbs, we should likewise ask for the decisive semantic feature to which this pattern might be attributed.

There are several pieces of evidence suggesting that the differences above should be traced back to an underlying aspectual distinction. Bally (1965:181) already argues that in New French, „-ment désigne volontiers l'aspect ponctuel ou terminatif, -age au contraire très souvent l'aspect duratif et itératif (...)" ('-ment is very likely to designate a punctual or terminative aspect, whereas -age very often designates a durative and iterative aspect ...'). Furthermore, Martin (2008, this volume) offers a detailed analysis of various aspectual differences between –age and -ment that is largely in line with Bally's classification. For example, she observes that –age-nominals derived from unergative intransitive bases may exhibit an iterative interpretation, whereas the corresponding -ment-nominals are forced to occur with plural inflection in iterative contexts:

(26) (a)   OK Une séance de miaul**age**.   (singular)
                           'A meowing session'
       (b)   vs.   * Une séance de miaule**ment**.   (singular)
       (c)   vs.   OK Une séance de miaule**ments**.   (plural)

Related differences observed by Martin (2008) are that –age is able to denote longer eventive chains than –ment (cf. example 3 above), that –age is non-terminative, whereas –ment is terminative, and that –age, contrary to –ment, prefers internal arguments that are incrementally affected by the event denoted by the derivational base. The data we presented in Sections 2 and 3 offers numerous examples (more or less directly) illustrating these contrasts. For example, we may use the following test proposed by Martin (2008) in order to illustrate the difference in terminativity between our –ment and –age-nominals:

(27) a.   **L'ajustage** de la pièce a abouti à son **ajustement**.
              The adjusting of the piece resulted in its adjustment.
       b.   # **L'ajustement** de la pièce a abouti à son **ajustage**.

'The adjustment of the piece resulted in its adjusting.'

By hypothesis, aspectual values such as iterativity, continuativity or non-terminativity may all be traced back to atelicity if we conceive of atelicity as being defined by means of (divisive and) cumulative reference. Divisivity/cumulativity was originally introduced to define the reference of mass nouns and indefinite plurals denoting homogeneous pluralities or masses. The crucial characteristic of an entity being in the extension of, for example, a mass term, is that its parts, as well as any sum of its parts, are in the extension of the same term. As pointed out by Quine (1960:19)), "[s]o called mass terms like 'water', 'footwear', and 'red' have the semantic property of referring cumulatively: any sum of parts which are water is water." Evidently, this characteristic can easily be transferred to the domain of eventualities, in the sense that atelic expressions refer cumulatively to eventualities/parts of eventualities (homogeneous reference), whereas telic expressions refer non-cumulatively to eventualities/parts of eventualities (quantized reference). Hence, in order to account for the various aspectual differences between –ment and -age mentioned above, we may generalize that -age, contrary to –ment, introduces an atelic operator, motivating the respective nominals to homogeneously referring to (parts of) the eventuality denoted by the base verb.

This generalization is also strongly suggested by diachronic evidence. As stated by Uth (2008), the earliest –age-derivatives originated from substantivized relational –aticu-adjectives borrowed from Latin, cf. *censu terraticu* ('tax of land'), *canis venaticus* ('staghound'). Evidently, –aticu attached to nouns as well as verbs, the relevant bases denoting (sub-)kinds and action types, respectively, cf. e.g. b*arnage* ('kind/quality of nobles'), or *passage* ('right to cross a territory'). Crucially, the bases of both, the denominal as well as the deverbal derivatives, necessarily refer cumulatively to non-singular entities, as argued for by e.g. Chierchia (1998). The borrowed substantivizations have then been reinterpreted as group terms (in the denominal domain) and as true event nominalizations (in the deverbal domain). As most clearly shown by the group terms (*barnage* as 'group of barons'), the homogeneous constitution exhibited by the bases of the –aticu-substantivizations is transferred to the reinterpreted derivatives, so that we may conclude that the basic aspectual characteristic of all sorts of derivational bases of –age-derivatives may be defined in terms of cumulative reference. In Uth (2008) it is therefore argued that –age should be analyzed as introducing a pluractional operator (as defined by van Geenhoven (2005)), that motivates the non-quantized interpretation of (parts of) the eventuality denoted by the base verb.

Regrettably, we do not yet possess any detailed diachronic analysis of the –ment-suffixation. However, what we do know about the diachrony of –ment is, that it developed from Latin –mentum, which in turn contains with –tum a suffix stemming from former substantivized perfect passive participles, as *inventum*

('the (object/entity being) invented') or *cogitatum* ('the (idea being) thought'), cf. Meyer-Lübke (1894: 524f). These participles introduce a theme-related (passive) perspective and present the respective eventuality in the form of a resulting property or state (cf. Alsdorf-Bollée (1970: 45)). If we additionally take into account the synchronic analysis of the suffix as presented above, our working hypothesis for -ment should be that this suffix introduces a perfective perspective into the semantics of the base verb.[10]

One possibility to model aspectual operators is offered by de Swart (1998), who proposes a formalization of the English Perfect and the English Progressive within the framework of Discourse Representation Theory (DRT, cf. Kamp & Reyle 1993). According to de Swart (1998), aspectual operators are best to be conceived of as "eventuality modifiers" that map "sets of different types of eventualities to eventualities of some possibly other type" (ibid.: 349). For example, the Perfect Operator is analyzed as denoting a function that maps any eventuality ($\mathcal{E}$) to a state (S) (PERF $\mathcal{E} \to S$), by introducing the consequent state the input eventuality culminates in (ibid.: 354). De Swart argues that "the Perfect is an extensional operator" (ibid.), i.e. that the input as well as the output are asserted by the relevant expression. Figure 7 gives the DRT-representation for the sentence "Mary has met the president". $t=n$ means that the reference (t)ime of the event is equivalent to the speech time, i.e. (n)ow. $s \circ t$ indicates that states overlap with the reference time, x and y represent the thematic arguments and $e \supset\subset s$ signals that the resultant state starts right at the end of the respective event:
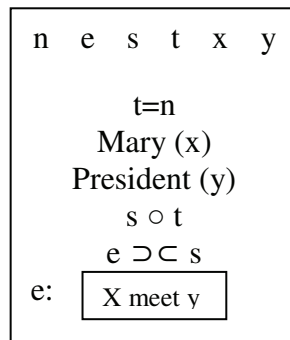
$$
\begin{array}{|l|}
\hline
\text{n \quad e \quad s \quad t \quad x \quad y} \\
\\
t=n \\
\text{Mary (x)} \\
\text{President (y)} \\
s \circ t \\
e \supset\subset s \\
\text{e:} \boxed{\text{X meet y}} \\
\hline
\end{array}
$$

Fig. 7: DRT-representation of "Mary has met the president" (de Swart (1998))

As regards the Progressive, de Swart develops her analysis mainly on Landmann (1992) who argues that "in the case of [e.g.] accomplishments, semantically the progressive relates an actual event in progress to a complete, possibly non-actual event" (ibid.: 10), which, if it does not continue in the real

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[10] The characterization of –tum as a "passive participle" again points to the further differences between –ment and –age related to agentivity (cf. Kelling (2004), Martin (2008)). This phenomenon is largely ignored in the present paper, but see footnote 2 and below.

world, has a reasonable chance to continue in some other possible world (i.e. arguably the world that is closest to the actual one, cf. Dowty (1979)). Drawing on this analysis, de Swart (1998: 355) argues that the progressive "picks out" an (atelic) stage of the entire input event, the latter being defined intensionally after the application of the operator. In Figure 8 this interpretational difference between the input event and the output event of the Progressive function is illustrated by the introduction of an embedded box the Progressive operates on:
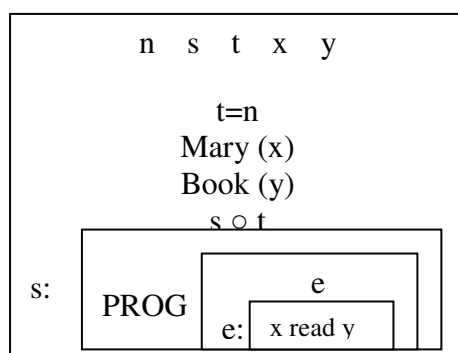

Fig. 8: DRT-representation of "Mary is reading a book" (de Swart (1998))

Finally, de Swart introduces aspectual coercion operators in order to account for aspectual shifts that are triggered by different kinds of aspectual operators, but that have no morphological or syntactic reflection. For example, in order for a basically quantized event to be modified by an overt atelic operator, as e.g. a time span adverbial, it has to be coerced at first into an iterative process by a C_{eh} (event -> homogeneous eventuality) – operator. Accordingly, in a sentence like *John played the sonata for eight hours*, the coercion results in an iterative interpretation.

Coming back to our –ment- and –age-nominals, I would like to point to the fact that the analysis proposed in Sections 2 and 4, according to which –ment modifies change-of-state events, such that the –ment-nominals denote the change-of-state event e as well as the resultant state s, exhibits astonishing similarities to de Swart's analysis of the English Perfect by means of DRT-representations. Based on these similarities, I would like to propose tentatively that -ment might be conceived of as introducing a perfect operator that introduces, in turn, the consequent state, the event denoted by the base verb culminates in. This consequent state may either be the final endpoint of the event denoted by the base verb, as in e.g. *l'achèvement de sa vie* ('the ending of his/her live') corresponding to *Sa vie s'est achevée* ('Her/his live has ended'), or it may be any intermediate state, as may be the case with –ment-nominals derived from so-called degree achievements (cf. Hay et al. (1999), Ramchand (2008)). In any case, the respective DRT-representation may be developed by reducing Figure 7 by the

external argument, as well as by any information concerning the reference time, since this is not part of the semantics of –ment-nominals:
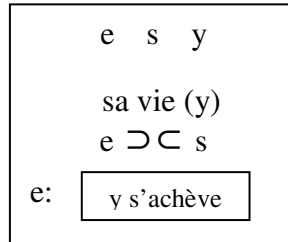
$$
\begin{array}{|l|}
\hline
\quad e \quad s \quad y \\
\\
\quad sa\ vie\ (y) \\
\quad e \supset \subset s \\
e: \boxed{\ y\ s'achève\ } \\
\hline
\end{array}
$$

Fig. 9: DRT-representation of "l'achèvement de sa vie" (without context)

An important peculiarity of the relevant –ment-nominalizations is that their exact denotational range is only determined by contextual influences, in such a way that the interpretation characteristic for perfect sentences is generally blurred. That is, while perfect sentences (in languages as English) are interpreted as asserting a state, which abuts to a preceding event, -ment-nominals may either denote events resulting in a consequent state (the interpretation corresponding to the respective finite verb forms), or they may denote a resultant state preceded by a change-of-state event (the interpretation corresponding to the respective participles). Hence, we may argue that the actual impact of the nominalization of anti-causative verbs by means of –ment is the neutralization of the difference in interpretation that exists between the finite form of the base verb (cf. "Sa vie s'achève", 'His/Her life is ending') and the corresponding participle ("Sa vie s'est achevée", 'His/Her life has ended'). That means, the denotation of –ment-nominals derived from alternating bases extends to both, the change-of-state event as well as the resultant state, as represented by the DRT-representation above, as well as by the co-indexation pattern developed for the relevant –ment-nominals in Section 4.

Concerning –age, its similarity to the Progressive operator relates to the emphasis on the ongoing part of the input event. As we saw above, the –age-nominals focus on the causing process, while defocussing the culmination part of the event denoted by the base verb. Very similarly, the semantics of the Progressive as analized above "involves stripping an event of its culmination point" (de Swart (1998: 355)), relating this pre-culminating stage to a complete event that may or may not culminate in the actual world. Therefore, in analogy to de Swart's proposal for the Progressive, I would like to argue that the role of –age is to "pick out" a certain atelic stage (e.g. a 'process of adjusting') of the entire input event (e.g. 'x adjusts y'), whereby the (remaining) input event is interpreted intensionally after the application of the operator. Figure 10 is developed in accordance to Figure 8, except that the x-variable remains undefined (as is, equally, the AGENT in the respective example). and the representation is reduced by any temporal information. By embedding the input event in a separate box,

Figure 10 predicts that after modification by means of -age, the part of the semantics that is "contributed to the derivative by virtue of the base verb" (cf. Sections 3-4) is to be defined intensionally:

```
┌─────────────────────────────────────┐
│            p   x   y                 │
│          la pièce (y)                │
│                                      │
│     ┌──────────────────────────────┐ │
│     │          ┌──────────────────┐│ │
│  p: │          │        e         ││ │
│     │  PROG    │   ┌─────────────┐││ │
│     │      e:  │   │  x ajuste y │││ │
│     │          │   └─────────────┘││ │
│     │          └──────────────────┘│ │
│     └──────────────────────────────┘ │
└─────────────────────────────────────┘
```
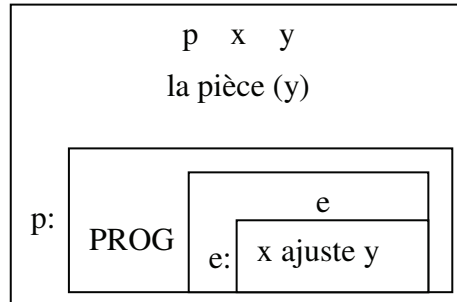
Fig. 10: DRT-representation for "ajustage de la pièce"

Accordingly, we may generalize that the role of the derivational base is to constitute the intensional background of the process that is extensionally denoted by the relevant –age-nominalization. Again, the DRT-representation is in line with the co-indexation patterns established in Section 4, which likewise predict that the (extensional) denotation of the relevant –age-derivatives is restricted to the causing process.

According to this line of argumentation, we might indeed conclude that the general aspectual distinction between –ment and –age also constitutes the primary underlying characteristic distinguishing between –ment- and –age-nominalizations derived from alternating verbs, in the sense that the co-indexation patterns developed in Section 4 represent the interpretational variants that result from the application of the "progressive –age-operator" and the "perfective –ment-operator" to alternating base verbs. Accordingly, we would argue that -ment, since it descends from Latin perfective inflection, prefers bases specified for [+IEPS], i.e. bases denoting events or processes that develop towards a resultant state (or an intermediate degree, respectively), in order to introduce the consequent state these events are expected to culminate in. As such, -ment prefers bases that are inherently goal-directed, similarly to what is observed for perfective inflection by e.g. Bertinetto (1987: 264). By contrast, –age, since it descends from a kind term formation suffix, requires bases that are at least partly homogeneous, in order to receive (internally) homogeneous reference. In the domain of alternating verbs, this is achieved by attaching to the causative variants of the relevant bases, from which -age "picks out" the atelic part, i.e. the causing process.

However, it should be noted that this proposal leaves open a range of questions. First of all, it would have to be verified further empirically. For example, concerning the proposal that –age introduces a Progressive operator, it should be examined if the relevant –age-nominals may co-occur with constituents

that cancel the intensional part of the progressive predicate (28a), or denote the interruption of the respective event (28b); cf. (28c-d) for some proposals:

(28)   a.   Mary was drawing a circle but she didn't finish it.
          b.   Mary was crossing the street, when the truck hit her.

<div align="right">(Landmann (1992))</div>

          c.   L'ajustage de la pièce **n'a pas abouti à** son ajustement.   => ok?
              'The adjusting of the piece did not result in its adjustment.'
          d.   L'allumage de la combustion **a été interrompu** pour des raisons de sécurité.   => ok?
              'The firing of the combustion was interrupted for security reasons.'

Secondly, the attempt to attribute the complementary attachment pattern exhibited by –ment and –age in the domain of alternating verbs to the [IEPS]-feature does not really match with the comparison of the suffixes with the (English) Perfect and Progressive morphology: A Perfect operator may very well introduce a consequent state into non-culminating representations – just as the Progressive operator may operate on culminating bases, as long as these contain a pre-culminating homogeneous stage that may be "picked out".

A further problem is that the attempt to reduce the differences between –ment and –age to a basic aspectual difference actually would require a discussion of the relation between this basic difference and the voice-related differences, i.e the fact that –age is more agentive than –ment (cf. e.g. Kelling (2004)). Note that in some domains, the voice-related difference even appears to be the predominant feature distinguishing between –ment and –age (cf. Martin (2008, this volume)). This discussion would largely exceed the scope of the present paper. Nevertheless, I would like to argue that the large conformity of the data presented in Sections 2 and 3 and the co-indexation patterns developed in Section 4 with our analysis of –age and –ment in terms of aspectual operators suggests that it might be worthwhile to advance the above proposal.

6.   Conclusions

In this paper I examined process and result nominals in -age and -ment derived from verbs participating in the causative-/anti-causative-alternation. First of all, I argued that –age nominalizes the first sub-event, and –ment nominalizes the second sub-event of the causative eventive chain. Drawing on Lieber (2004), I then developed lexical conceptual representations illustrating that the relevant –age-nominals denote processes that cause a determinate change-of-state, just as deverbal agent nominals denote agents of a determinate action. As regards –ment, the co-indexation of the suffix's R-argument with the change-of-state component results in derivatives that are intrinsically ambiguous since they denote the change-of-state event as well as its situational argument. Finally, I compared these

conceptual structures with the aspectual operators introduced by de Swart (1998) proposing an analysis according to which –ment attaches to anti-causative bases, since it is its role to introduce the consequent state the event or process denoted by the base is expected to culminate in, whereas –age attaches to causative bases, since it requires the base to denote eventualities containing atelic stages that may be "picked out" during the nominalization procedure. As it stands, this proposal has many shortcomings. However, the large conformity of the data and the relevant co-indexation patterns with the representation of –age and –ment in terms of de Swart's aspectual operators suggests that it might nevertheless be worthwhile to further advance this line of reasoning.

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Melanie Uth
Department Linguistics/ Romance Languages
University of Stuttgart
Heilbronner Str. 7
70174 Stuttgart

melanie.uth@ling.uni-stuttgart.de