

The interaction between nP and DP in nominalizations

1. Introduction. Chomsky (1970) and later on Picallo (1991) theoretically distinguish between lexical and syntactic nominalizations, but these approaches have little to say about the status of 'mixed forms'. Subsequent syntactic approaches to nominalization have come to the understanding that nominalizing morphemes may attach to and thus recategorize structures of varying complexity including fewer or more (extended) projections of the original category (e.g., AspP, TP, for a verb), thus accounting for the different patterns (see, e.g., van Hout and Roeper 1998, Harley & Noyer 1998, Borsley & Kornfilt 2000, Alexiadou 2001, Borer 2005, AIS 2011, among others). These approaches, however, lack a precise formulation of how much structure of the original category is compatible with how much nominal structure, and are thus theoretically more permissive than the empirical picture seems to be.

In this paper we address this shortcoming by formalizing one empirical restriction that has been observed with respect to what we call syntactic nominalizations (nominalizations that inherit complex extended projections of the original category). Namely, these nominalizations, among which the verbal gerund, seem to be restricted when combining with determiners (see data in (4)). Their incompatibility with adjectives indicates in our approach that these nominalizations also lack an nP layer, so we relate the restriction on determiners to the absence of n: Determiners carry an unvalued gender feature that is usually valued via Agree with the gender feature on n. Determiners that appear in syntactic nominalizations have a 'default' gender feature which is valued by Agree with a valued gender feature on a verbal projection, which is also responsible for the referential index in CP-anaphora.

2. Three types of nominalizations. Chomsky (1970) notices the contrast between a 'transformational'/syntactic gerund like in (1a) and a ('lexical') derived nominal as in (1b), to the extent that only the former inherits the causative reading of the verb, which indicates that it hosts syntactic structure from the original verb/clause. The 'mixed form' in (1c), however, realizes the internal argument like the lexical nominal in (1b) and receives the causative reading of the syntactic nominalization in (1a).

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| (1) | a. | (John's) growing tomatoes | <i>verbal gerund</i> |
| | b. | the growth of tomatoes | <i>derived nominal</i> |
| | c. | the growing of tomatoes | <i>nominal gerund</i> |

In a syntactic approach, both (1b) and (1c) are derived in the syntax, but differ with respect to the amount of structure they inherit from the verb. The contrast between (1b) and (1c) lies in the fact that (1c) hosts a Voice projection, while (1b) doesn't (see, e.g., AAS 2009). This is confirmed by Kratzer's (2003) observation that nominal gerunds, like passives, exclude self-reference readings, while derived nominals allow them: e.g., 'the painfully slow registering (vs. registration) of the children'. (According to Kratzer 1996, unavailability of self-reference readings in passives indicates the presence of VoiceP.)

Syntactic approaches are flexible enough to accommodate a wide variety of mixed nominalizations between the two posited in Chomsky (1970) and Picallo (1991) (see, e.g., Borsley & Kornfilt 2000, AIS 2011). Here we propose a finer three-way distinction between lexical, morphological, and syntactic nominalizations. The first are nPs that nominalize an (uncategorized) root and are closest to what one might analyze as conversion in a lexicalist frame (2a); morphological ones nominalize a verbal/adjectival original category (orig-cat) possibly with some extended projections (ExtPs) and have nominal internal structure introduced by the nP (and attested by their morphology, including a nominalizing affix) (2b); syntactic nominalizations only have a DP-layer as their nominalizer and thus lack internal nominal structure, but inherit ExtPs from the original category (2c).

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| (2) | a. | $[_{DP} D [_{nP} n [\sqrt{\quad}]]]$ | <i>lexical/root nominalization</i> |
| | b. | $[_{DP} D [_{nP} n ([_{ExtP} \mathbf{ExtP}) [_{orig-catP} \mathbf{orig-cat} [\sqrt{\quad}]]]]]$ | <i>morphological nominalization</i> |
| | c. | $[_{DP} D [_{ExtP} \mathbf{ExtP} [_{orig-catP} \mathbf{orig-cat} [\sqrt{\quad}]]]]]$ | <i>syntactic nominalization</i> |

For lexical nominalizations, see, e.g., non-productive 'deadjectival' nominals like *to kalo* (the good) in Greek and *răul* (bad-the) in Romanian, which exhibit no adjectival properties, so they nominalize bare roots (i.e., 'substantivization' in Giannakidou & Stavrou 1999). Here we focus on the other two types. While (1a) qualifies as a syntactic nominalization, (1b) & (1c) are both of the morphological type: (1b) has the form $[_{DP} \textit{the} [_{nP} \textit{-th} [_{VP} v [\sqrt{\textit{grow}}]]]]]$, while (1c) also projects Voice (i.e. $[_{DP} \textit{the} [_{nP} \textit{-ing} [_{VoiceP} \textit{Voice} [_{VP} v [\sqrt{\textit{grow}}]]]]]]]$). The presence of the internal argument in (1b-c) is an indicator of the verbal nature of the base, so both structures include the vP/VP (Alexiadou 2001, Borer 2005; for Grimshaw 1990, they are complex event nominals, given also modification by *constant* in (3a)). Unlike morphological nominals (3a), the syntactic one in (3b) is incompatible with adjectives, which correlates with the lack of an nP in its structure $[_{DP} \textit{John's} [_{TP} T [_{AspP} \textit{-ing} [_{VoiceP} \textit{Voice} [_{VP} v [\sqrt{\textit{grow}}]]]]]]]$ (see AIS 2011 and references therein).

- (3) a. the **constant**/***constantly** growth/growing of tomatoes
b. John's **constantly**/***constant** growing tomatoes

Several nominalization patterns in other languages conform to this morphological vs. syntactic split also providing further contrasts (e.g., plural and gender marking only appear in morphological nominalizations). Among the former, we include Spanish nominal infinitives, Romanian infinitives and German *-ung* nominals, and among the latter, Spanish verbal infinitives, deadjectival 'lo'-nominalizations, Romanian supine nominals and Dutch/German deadjectival neuter nominals (see Miguel 1998, IS 2008, Villalba 2009, AIS 2010, AIS 2011, McNally & de Swart 2011, for examples).

3. The role of the nP between ExtP(s) and DP. Exploring Borsley & Kornfilt's (2000) intuition about the restrictions on combining mixed extended projections, we formalize the constraints on D depending on the presence of nP in nominalizations. Crosslinguistic data indicate that syntactic nominalizations are restricted with respect to determiners (4), while morphological ones are free (5).

- (4) a. **John's**/***the**/***that**/***a** performing the song
b. **El**/***ese**/***aquel**/***un** haber él escrito esa carta *Spanish verbal infinitive*
the/this/ that/ a have.Inf he.Nom written that letter
c. (***un**/***acel**) spălat(**ul**) (al) rufelor *Romanian supine*
a/that wash.Sup(the) of laundry.Gen
- (5) a. **John's**/**the**/**that**/**a** performing/performance of the song
b. **El**/**ese**/**aquel**/**un** lamentar de dos pastores *Spanish nominal infinitive*
the/this/that/a lament.Inf of two shepherds
c. **o**/**acea** încălcare(**a**) (a) drepturilor omului de către ministru *Ro infinitive*
a/that violate.Inf(the) of rights.Gen man.Gen by minister

We explain this restriction in syntactic nominalizations via the lack of the nP layer. Determiners usually have an unvalued gender feature that is valued by the corresponding valued feature on n, via Agree (see, e.g., Pesetsky & Torrego 2007). This happens in lexical nouns and morphological nominalizations. But languages also have a (rather grammaticalized) determiner that they use as in (2c) to adapt a non-nominal category to a nominal syntactic context. This determiner (e.g., English 's, Spanish *el*, Romanian *-(u)l* 'the' in (4)), we propose, has an unvalued gender feature that is valued by a 'default' gender feature on some ExtP of the original category, e.g., the verb. That verbal structures have a 'default' (usually, neuter) gender feature is proved by the possibility of CPs to be referred to anaphorically in (6a). This feature is also at play together with person and number when a CP subject agrees with the verb as in (6b). We take it to be hosted by the head that introduces existential closure on the event, i.e. Aspect. In support of this hypothesis, note that all syntactic nominalizations documented in the literature inherit at least AspectP from the verb (see AIS 2011, for an overview).

- (6) a. [John lost my book]_i. **It**_i bothers me. b. [That John lost my book] **bothers** me.

As a confirmation that the gender feature on D in syntactic nominalizations is valued by the default gender feature on a verbal ExtP, the Romanian supine, a syntactic nominalization of the form [_{DP} *-(u)l*] [_{AspP} *-t* [_{VoiceP} Voice [_{VP} *-a* [_√ *interpret*]], is anaphorically referred to by the sentential anaphor *asta*, which has default gender (instead of masculine-neuter), while the infinitive, a morphological nominalization of the form [_{DP} *-(u)l*] [_{NP} *-re* [_{VP} *-a* [_√ *interpret*]], is referred to by a feminine anaphor (see also IS 2008). In (7b), there is n which values the (non-default) feminine on D, but in (7a) gender is default like in (7c):

- (7) a. Vorbeau despre **interpretatul** lui Hamlet. Se pare ca **asta**/***acesta** îi atrage pe toti actorii.
They spoke about the interpretation.**Sup** of Hamlet. Apparently, **it**/***this**.**M-N** attracts all actors.
b. Vorbeau despre **interpretarea** lui Hamlet. Se pare ca **aceasta**/**??asta** îi consacră pe actori.
They spoke about the interpretation.**Inf** of Hamlet. Apparently, **this**.**F**/**??it** validates the actors
c. Că Ion a venit, **asta**/***aceasta**/***acesta** stiu
that John has come, **it**/***this**.**F**/***this**.**M-N** I-know

Selected references: AAS 2009. (Alexiadou, Anagnostopoulou & Schäfer) PP licensing in nominalizations. *NELS* 38. AIS 2010. (Alexiadou, Iordachioaia & Soare). Number/aspect interactions in the syntax of nominalizations. *Journal of Linguistics* 46. AIS 2011. (Alexiadou, Iordachioaia & Schäfer). Scaling the variation in Romance and Germanic nominalizations. *The Noun Phrase in Romance and Germanic*. Benjamins. IS 2008. (Iordachioaia & Soare). Two kinds of event plurals. *EISS* 7. Paris. Miguel 1998. Nominal Infinitives in Spanish. *Canadian Journal of Linguistics*. 41. Pesetsky & Torrego 2007. The syntax of valuation and the interpretability of features. *Phrasal and Clausal Architecture*. Benjamins. Villalba 2009. Definite Adjective Nominalizations in Spanish. *Nereus IV*.