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Two Syntactic Strategies to Derive Deadjectival Nominals

Abstract: We investigate the morpho-syntax of three patterns of deadjectival nominals in German, Greek and Romanian. These nominals are suffix-based or zero-derived and present various cross-linguistic similarities and differences in terms of productivity, interpretation, and their choice of an argument-like genitive phrase. Suffix-based nominals (SNs) are productive and display the same morpho-syntactic properties in all languages — namely, they have a fully nominal internal syntax and realize a genitive argument. Zero-derived nominals present two different semantic instances: partitive bare nominals (PBNs) and quality bare nominals (QBNs). On the one hand, QBNs share the interpretation and the morpho-syntax of SNs in all languages, but have reduced productivity. On the other hand, PBNs are substantially more productive in German than in Greek and Romanian, a difference that associates with a strong contrast in the morpho-syntactic behavior of PBNs in the two language classes. We argue that this many-sided morpho-syntactic and semantic variation can be accounted for by the two word formation processes that Distributed Morphology makes available — word formation from roots and word formation from other words —, which successfully accommodate the correlation between the productivity and the morpho-syntactic properties of the different patterns of nominalizations.

Keywords: deadjectival nominals, word formation, Distributed Morphology, German, Greek, Romanian

1. Introduction

We investigate two morphological types of abstract deadjectival nominals — suffix-based and bare nominals — that combine with an argument-like genitive/PP, as illustrated with the French examples in (1). We will refer to them as suffix-based nominals (SN in (1a)), partitive bare nominals (PBN in (1b)); see [Villalba 2009] for a similar pattern in Spanish) and quality bare nominals (QBN in (1c)). Such patterns have been separately investigated in French, Spanish and Dutch

(Bécherel 1979; Bosque and Moreno 1990; Sleeman 1996; Lauwers 2008; Villalba 2009; Villalba and Bartra-Kaufmann 2010; McNally and de Swart 2011, 2013).

(1) a. la vulgarité <i>de l'histoire</i> the vulgar of the-story 'the vulgarity of the story'	Suffix-based Nominal (SN)
b. le vulgaire <i>de l'histoire</i> the vulgar of the-story 'the vulgar thing in the story'	Partitive Bare Nominal (PBN)
c. le vide <i>de l'espace</i> the empty of the-space 'the emptiness of space'	Quality Bare Nominal (QBN)

In this paper we compare the properties of these types of nominals in German, Romanian and Greek. We illustrate them in (1) for French, because this language has been investigated before and it uniformly uses the genitive to realize what looks like a possible argument of the nominal, a property that is not always shared by the other languages. Here we are concerned with two specific issues: 1) the status of the genitive phrase that accompanies the nominal and 2) the morpho-syntactic representation of the various nominal patterns with their specific interpretation.

The first issue relates to the long discussion in the literature on deverbal nominalization that was initiated by Grimshaw (1990) and concerns the question of whether the genitive phrase is an argument of the nominal and how its presence influences the interpretation of the nominal. In this respect, our comparative approach shows that the genitive does not play the same role in all three nominal patterns in (1) as the French data may suggest at first sight. Unlike French, the other three languages commonly use the genitive only in SNs and QBNs. On the basis of the semantics of these constructions, we argue that the genitive phrase is an argument only in this context.

For the second issue, we employ two syntactic strategies of word formation that are provided by the framework of Distributed Morphology (DM) (Halle and Marantz 1993; Harley and Noyer 1999; Alexiadou 2001; Arad 2005; Embick 2010 among others): word formation from the root and word formation from another word. We use the first mechanism to derive the unproductive nominals, among which we include Greek and Romanian PBNs, and the second mechanism to build the productive patterns, namely, SNs in all languages and PBNs in German. An additional outcome of this approach is that we account for the rather idiosyncratic meaning of the former and the compositional meaning of the latter, as predicted by the DM mechanisms. QBNs raise an interesting challenge, since they are rather unproductive, suggesting a derivation from the root, but they have a compositional meaning similar to that of SNs and their genitive phrase proves to be an argument that they inherit from the original adjective. These two facts

indicate that QBNs must be derived from a word and not from the root, a proposal we defend here. We further offer a few insights on why QBNs are less productive than SNs, although they have a similar structure.

Our paper is structured as follows. We start with a general presentation of the three nominalization patterns in German, Romanian and Greek and discuss their productivity in the respective languages in Section 2. In Section 3 we continue by comparing the properties of the genitival phrase in SNs and PBNs and argue that while it acts as a semantic argument in the former, it is only a modifier in the latter. In Section 4 we investigate the morpho-syntactic properties of deadjectival nominals and identify important differences between PBNs in German, on the one hand, and SNs as well as PBNs in Greek/Romanian, on the other hand. In Section 5 we offer a DM analysis that accounts for these facts and also accommodates QBNs. In Section 6 we conclude our discussion.

2. Productivity of deadjectival nominals

The languages we examine derive two systematic types of abstract deadjectival nominals, with and without an overt suffix, as illustrated in (1) for French, and in (2) to (4) for German, Romanian, and Greek. All languages have deadjectival suffixes that they employ to derive SNs as in (1a) and (2). Such nominals denote the instantiation of the adjectival quality (e.g. *vulgar*) in something that is realized with the inflectional or prepositional genitive in all languages under discussion. In general, German uses suffixes like *-ität* as in (2a), *-heit* (*Dummheit* ‘stupidity’), *-keit* (*Winzigkeit* ‘tininess’), *-e* (*Leere* ‘emptiness’), Romanian uses *-ătate/-itate/-utate* as in (2b) (see also *bunăătate* ‘kindness’), *-ețe* (*frumusețe* ‘beauty’), *-ie* (*voioșie* ‘joyfulness’), and Greek has *-sini* (*kalosini* ‘goodness’), *-otita* (*hideotita* ‘vulgarity’) and *-ia* (*omorfia* ‘beauty’).

- (2) Suffix-based nominals (SNs)
- | | |
|--|----------|
| a. die Vulgarität der <i>Geschichte</i> | German |
| the vulgarity the.Gen story | |
| ‘the vulgarity of the story’ | |
| b. vulgaritatea <i>situației</i> | Romanian |
| vulgarity.the situation.Gen | |
| c. i hideotita <i>tis katastasis</i> | Greek |
| the vulgarity the situation.Gen. | |

PBNs as in (1b) and (3) have been reported to have a ‘partitive’ reading, i.e., ‘the vulgar part of the story’ (see Sleeman 1996; Lauwers 2008; Villalba 2009). McNally and de Swart’s (2013) call these nominals in Dutch ‘relational,’ because this interpretation only appears in combination with a PP or genitive, as illustrated in (3) for German, Romanian and Greek. PBNs are zero-derived in French,

Romanian and Greek, but they bear the weak adjectival inflection *-e* in German (the same inflection appears in Dutch, see McNally and de Swart 2011, 2013).

- (3) Partitive bare nominals (PBNs)
- | | |
|--|----------|
| a. das Vulgäre <i>an der Geschichte</i> | German |
| the vulgar at.the.Dat story | |
| ‘the vulgar thing in the story’ | |
| b. vulgarul <i>situației</i> | Romanian |
| vulgar.the situation.Gen | |
| c. to hideo <i>me tin katastasi</i> | Greek |
| the vulgar at the situation | |

QBNs as in (1c) and (4) are zero-derived nominals without any inflectional marking and have a typical quality reading, similar to SNs in all languages. Note that QBNs also include color nouns, but see Alexiadou (2013) for a detailed discussion and a comparison to English.

- (4) Quality bare nominals (QBNs)
- | | |
|--|----------|
| a. vidul <i>spațiului/albastrul cerului</i> | Romanian |
| empty.the space.Gen/blue.the sky.Gen | |
| ‘the emptiness of space/the blue of the sky’ | |
| b. to ble <i>tu uranu</i> | Greek |
| the blue the sky.Gen | |
| ‘the blue of the sky’ | |
| c. das Rot <i>der Blume</i> | German |
| the red the.Gen flower | |
| ‘the red of the flower’ | |

The three nominalization patterns display important differences in terms of productivity both within and across individual languages. In general, SNs are the most productive pattern in all languages, a fact we consider to be related to the presence of the suffix (see Section 5). PBNs are also productive in German, but in Romanian and Greek they are much less productive than SNs, as the examples in (5) and (6) show.

- (5) a. **bunăitatea/sărăcia/blândețea** *Mariei*
kindness/poverty/tenderheartedness Mary.Gen
‘Mary’s kindness/poverty/tenderheartedness’
- b. ***bunul/*sărăcul/*blândul** *Mariei/situației*
kind.the/poor.the/tenderhearted.the Mary.Gen/situation.Gen
- (6) a. i **perifania/ilikrinia** *tis Marias*
pride/honesty the Mary.Gen
‘Mary’s pride/honesty’
- b. ***to perifano/*to ilikrines** *tis Marias*
the proud/the honest the Mary.Gen

QBNs in general seem to occur when a corresponding SN is missing, or has a different specialized meaning. For instance, SNs derived from color adjectives do

not denote the color itself, but something resembling the color: cf. Ro *albăstrime* ‘bluishness’ — *albastru* ‘blue’.

In (7) below, we summarize the productivity picture of these nominal patterns.

(7) Productivity of deadjectival nominals

	German	Romanian	Greek
SN	yes	yes	yes
PBN	yes	no	no
QBN	no	no	no

In what follows we first take a closer look at the status of the genitive phrase and the morpho-syntax of SNs and PBNs. We come back to QBNs for comparison when we give our account in Section 5.

3. The status of the genitive phrase in SNs and PBNs

Most recently, Roy (2010) argues that only predicative (intersective) adjectives derive nominalizations, with reference to SNs. The adjective *poor* in (8a) has both an intersective (‘moneyless’) and a non-intersective (‘pitiful’) reading, of which only the intersective one is available in the predicative position in (8b). Similarly, the SN *poverty* only allows the intersective reading in (8c). Other adjectives and SNs that behave in this way are *old* as in *old man/friend*, *nasal* in *nasal vowel/cavity*, or *possible* in *possible choice/enemy*.

- (8) a. the poor child
 i. the pitiful child (non-intersective)
 ii. the moneyless child (intersective)
 b. This child is poor.
 i. #This child is pitiful.
 ii. This child is moneyless.
 c. the poverty of the child ≠ the pitifulness of the child

As (9) shows, the denotation of such deadjectival nominals entails that the property expressed by the original adjective holds of the genitive phrase, in this particular case, the poverty of the child entails that the child is poor.

- (9) the poverty **of the child** => The child is poor.

On the basis of this observation, Roy takes *of the child* in (8c) to be an argument of the nominal, similarly to internal arguments that are realized in Grimshaw’s (1990) complex event nominals, as, for instance, *of the city* in (10).

(10) the army's destruction **of the city**

In what follows, we use the test in (9) as evidence in determining whether the genitive phrase or the PP that accompanies the different deadjectival nominals is an argument. We will show that the genitive is an argument in SNs, but not in PBNs, a conclusion that is also supported by the fact that PBNs may employ a PP different from the genitive, as it becomes clear in Section 3.2.

3.1. Interpretation of the genitive phrase

In all the languages that we investigate here, there is a clear contrast in the interpretation of the genitive phrase with respect to SNs and PBNs. While in SNs, the property of the original adjective is understood as holding of the genitive phrase, similarly to the example in (9) from Roy (2010), PBNs do not display this property. This is illustrated for German, Romanian and Greek in (11) to (13) below, which we take to be evidence that the genitive DP is an argument in SNs, but not in PBNs.

(11) a. die Schönheit Marias	=>	Maria ist schön.	SN
the beauty Mary.Gen		Mary is beautiful	
'Mary's beauty'		'Mary is beautiful'	
b. das Schöne an Maria	≠>	Maria ist schön.	PBN
the beautiful at Mary		Mary is beautiful	
(12) a. răutatea acestei țări	=>	această țară este rea	SN
evilness this country.Gen		this country is evil	
'the evilness of this country'		'This country is evil.'	
b. răul acestei țări	≠>	această țară este rea	PBN
evil.the this country.Gen		this country is evil	
'The evil part of this country'		'This country is evil.'	
(13) a. i kalosini tis Marias	=>	I Maria ine kali.	SN
the goodnes the Mary. Gen		Mary is good	
'Mary's goodness'		'Mary is good.'	
b. to kalo me ti Maria	≠>	I Maria ine kali.	PBN
the good at the Mary		Mary is good	
'The good thing about Mary'		'Mary is good.'	

Villalba (2009) argues that PBNs have a partitive reading in Spanish (i.e., *lo honesto de Juan* 'the honest thing about John,' see also Bosque & Moreno 1990), which is also the interpretation of these nominals in German, Romanian, and Greek. Importantly, this reading does not predicate the adjectival property of the genitive DP like in the case of SNs, which in our view means that the DP is not an argument of the adjective or of the corresponding nominal, as shown in (11) to (13) above. Villalba's observation is confirmed by the test we construct

in (14) to (16), in which PBNs are shown to establish a possessive partitive relation with the genitive DP. This reading, however, is not possible with the corresponding SNs.

(14) a.	das Schöne an Maria	=>	Maria hat etwas Schönes an sich.	PBN
	the beautiful at Mary		Mary has something beautiful about her	
	‘The beautiful thing about Mary’		‘Mary has something beautiful about her.’	
	b. die Schönheit Marias	≠>	Maria hat etwas Schönes an sich.	SN
	the beauty Mary.Gen		Mary has something beautiful about her	
	‘Maria’s beauty’		‘Mary has something beautiful about her.’	
(15) a.	răul acestei țări	=>	Această țară conține ceva rău.	PBN
	evil.the this country.Gen		this country contains something evil	
	‘the evil part of this country’		‘This country contains something evil.’	
	b. răutatea acestei țări	≠>	Această țară conține ceva rău	SN
	evilness this country.Gen		this country contains something evil	
	‘the evilness of this country’		‘This country contains something evil.’	
(16) a.	to kalo me ti Maria	=>	I Maria ehi kati kali.	PBN
	the good at the Mary		Mary has something good	
	‘The good thing about Mary.’		‘Mary has something good.’	
	b. i kalosini tis Marias	≠>	I Maria ehi kati kali.	SN
	the goodness the Mary.Gen		Mary has something good	
	‘Mary’s goodness’		‘Mary has something good.’	

On the basis of these observations, we conclude that the genitive DP is interpreted as an argument of the original adjective only in SNs, while in PBNs it acts as a modifier, similarly to genitives that express possession.

3.2. The choice of the genitive/PP in SNs and PBNs

The conclusion above is further confirmed by the fact that languages like German do not use a genitive with PBNs (see (17)), but a PP that is not selected by the original adjective. Greek and Romanian use the genitive in some cases and a PP in others ((18)/(19)). Importantly, the corresponding SN allows only a genitive in the relevant interpretation, the PPs that appear with PBNs are excluded (see (17c), (18b), and (19c)).

(17) a.	das Schöne an der Frau /* der Frau	PBN
	the beautiful at the woman/the.Gen woman	
	b. das Grüne an unserer Politik /* unserer Politik	PBN
	the green at our politics/our.Gen politics	
	c. die Schönheit der Frau /* an der Frau	SN
	the beauty the.Gen woman/at the woman	
(18) a.	to kalo tu Jani/me to Jani	PBN
	the good.N the John.Gen/with the John	

b. i kalosini tu Jani/*me	to Jani	SN
the goodness.F the John.Gen/with the John		
(19) a. banalul acelei situații/din	acea situație	PBN
trivial.the that.Gen situation.Gen/from that situation		
b. frumosul/banalul din Maria/*Mariei		PBN
beautiful.the/trivial.the from Mary/Mary.Gen		
c. frumusețea Mariei/*din Maria		SN
beauty Mary.Gen/from Mary		

3.3. Summary

We have distinguished between SNs and PBNs on the basis of the semantic relationship between the original adjective and the genitive/PP, as well as the optionality of the genitive marking, and have reached the generalization in (20). The languages we investigate seem to pattern alike in this respect.

- (20) SNs: genitive is an argument; adjectival property is predicated of it;
 PBNs: genitive/PP is a modifier; partitive interpretation.

4. The morpho-syntax of deadjectival nominals

We now check the morpho-syntactic properties of deadjectival nominals. We are interested in finding out how much they preserve from the behavior of the original adjective and how much of a nominal behavior they introduce, along the lines of a similar investigation of deverbal nominals in Alexiadou, et al. (2011). We test their ability to accept adverbial modifiers and degrees of comparison. We will see that while languages are similar when we look at SNs, they differ with respect to the behavior of PBNs: we have a contrast between German and Greek/Romanian that relates to the productivity difference in the table in (7) above.

4.1. Modification by adverbs/adjectives

In Greek and Romanian SNs and PBNs, adjectives are allowed as modifiers, but adverbs are not (see (21)–(22)). This shows that neither of the two nominals embeds a rich enough adjectival syntax (cf. (21a), (22a)); their internal syntax is entirely nominal.

Greek

- | | |
|---|-----------|
| (21) a. I Maria ine ekseretika kakia | adjective |
| Mary is extremely bad | |
| b. *to ekseretika kako tis Marias | PBN |
| the extremely bad the Mary.Gen | |

- | | |
|--|-----|
| c. *i eskeretika kakia tis Marias | SN |
| the extremely badness the Mary.Gen | |
| d. i megali kalosini tis Marias | SN |
| the great goodness the Mary.Gen | |
| e. to kinoniko dikeo | PBN |
| the social just | |

Romanian

- | | |
|--|-----------|
| (22) a. Maria este prea/foarte/extrem de rea/banală | adjective |
| Mary is too/very/extremely of bad/banal | |
| b. (*prea/*foarte/*extrem de) răutatea (extremă a) Mariei | SN |
| too/very/extremely of badness (extreme of) Mary.Gen | |
| c. (*prea/*foarte/*extrem de) răul (extrem al) acestei țări | PBN |
| too/very/extremely of bad.the (extreme of) this.Gen country.Gen | |
| d. (*prea/*foarte/*extrem de) banalitatea (extremă a) situației | SN |
| too/very/extremely of banality (extreme of) situation.Gen | |
| e. (*prea/*foarte/*extrem de) banalul (extrem al) acestei situații | PBN |
| too/very/extremely of banal.the (extreme of) this.Gen situation.Gen | |

In German, SNs behave like in Greek and Romanian, i.e., they accept only adjectival modifiers, indicating a fully nominal internal syntax, as shown in (23c, e). However, PBNs in German behave differently from Greek and Romanian, as they allow adverbs and disallow adjectives. Their ability to take adverbial modifiers indicates that their morpho-syntactic make-up includes a substantial amount of adjectival syntax (cf. (23a)).

German

- | | |
|--|-----------|
| (23) a. Das ist sehr/extrem blöd. | adjective |
| this is very/extremely stupid | |
| b. das sehr/extrem/*extreme Blöde an der Sache | PBN |
| the very/extremely/extreme stupid at the thing | |
| c. die extreme/*sehr/*extrem Blödheit der Sache | SN |
| the extreme/very/extremely stupidity the.Gen thing | |
| d. das unglaublich/*unglaubliche/sehr Schöne an Maria | PBN |
| the incredibly/incredible/very beautiful at Mary | |
| e. die unglaubliche/*unglaublich/*sehr Schönheit Marias | SN |
| the incredible/incredibly/very beauty Mary. Gen | |

4.2. Availability of gradation

In Romanian, degrees of comparison are not possible with deadjectival nominals, because comparison is realized analytically, while these nominals are synthetic constructions. In Greek, PBNs do not form comparatives and superlatives (see Giannakidou and Stavrou 1999). The suffix-based nominalization can marginally give such forms, e.g., nominalization of a comparative form of the adjective in (24a), but these receive a rather idiomatic reading and might be interpreted as cases of N-ellipsis; the bare nominal cannot form comparatives (24b).

- | | | |
|-----------|--------------------------|-----|
| (24) a. i | kaliteri tu Jani | SN |
| | the better the John.Gen | |
| b. | *to kalitero me to Jani | PBN |
| | the better with the John | |

In German, gradation is possible with PBNs, but not with SNs. This behavior patterns with the compatibility of PBNs with adverbs in (23), another property they inherit from adjectives.¹

- | | | |
|---------|--|-----|
| (25) a. | das Blödere / Blödste an der Sache | PBN |
| | the stupider/ stupidest at the thing | |
| | ‘the more/most stupid part in the matter’ | |
| b. | die * Blöderheit / * Blödsteheit der Sache | SN |
| | the stupiderity/stupidestity the.Gen thing | |

4.3. Summary

The discussion of the morpho-syntactic properties of SNs and PBNs in German, Greek and Romanian above allows us to conclude the following. In Greek and Romanian, both SNs and PBNs are entirely nominal, they do not preserve any properties typical of an adjectival syntax. In German, only SNs are full nouns, PBNs inherit adjectival properties with respect to modification and gradation, which in our analysis below will be used as evidence for their embedding of a rich adjectival syntax, besides their nominal category.

5. A syntactic Distributed Morphology approach

5.1. Word formation in DM

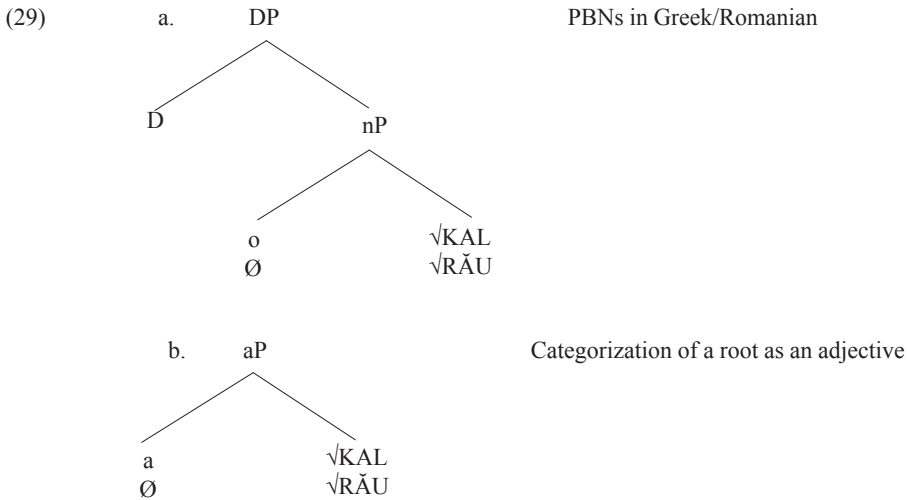
We assume a view on word formation couched within the framework of Distributed Morphology (see Marantz 2001; Arad 2005; Embick 2010). From this perspective, the following pieces constitute the building blocks of word formation:

1. Language has atomic, non-decomposable, elements, called *roots*.
2. Roots combine with the *functional vocabulary* and build larger elements.
3. Roots are category-neutral. They are then categorized by combining with category defining functional heads.

¹ See (Lauwers 2008; Alexiadou et al. 2012) for a discussion of French PBNs as in (1b), which seem to pattern in between German PBNs and Greek/Romanian PBNs.

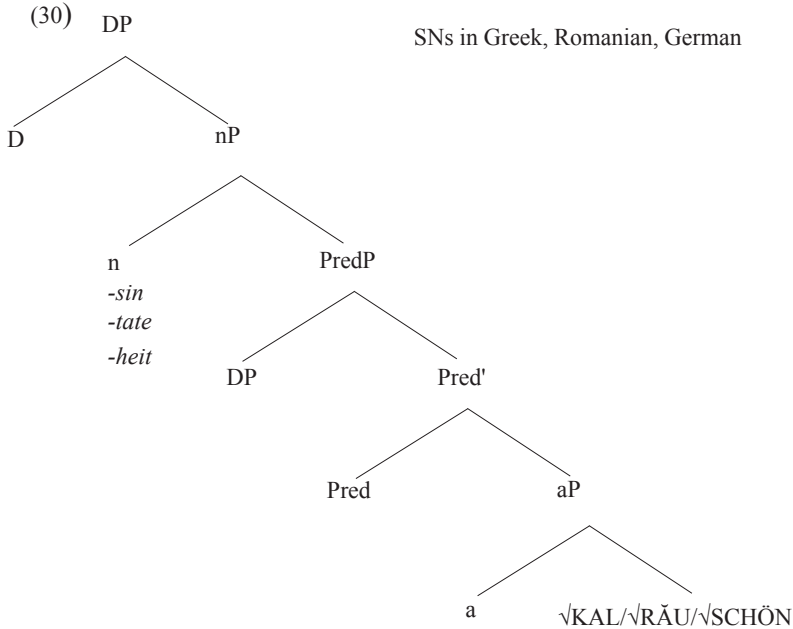
5.2. A DM analysis of SNs and PBNs

The DM model of grammar has a straightforward solution for the difference between SNs and PBNs in Greek and Romanian. As we saw above, in the two languages, PBNs are quite unproductive, the genitive phrase is not an argument and they do not inherit any morpho-syntactic properties of the original adjective. Thus, they qualify as cases of categorization of a pure root as in (26). In their particular case, we have categorization by *n*, the categorizer that turns a root into a noun, and the structure is (29a). For comparison, note that a similar process takes place in the formation of the corresponding adjectives in (29b).

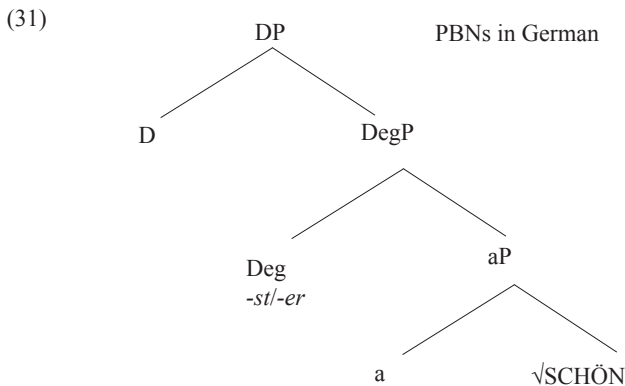


By comparison to Greek/Romanian PBNs, we have shown that SNs are productive and inherit the argument of the adjective in all the languages discussed here, so they share more properties with the DM word formation mechanism in (27), where a word is derived from another word, i.e. an already categorized root. This means that in SNs, the root must be first categorized by *a*, an adjectivizer, and then by *n*, which will host the nominalizing suffix, as in (30). To account for the predicative meaning of the derived nominal, we follow Roy (2010) and assume that on top of the *aP*, the nominalization also includes a functional layer for predication, *PredP* (see Bowers 1993). *PredP* thus hosts the genitive argument, accounting for the fact that the latter acts as an argument of the original predicative adjective, as we observed in Section 3.1. A similar structure also characterizes French SNs as in (1a).

Unlike in Greek and Romanian, we saw that PBNs are productive in German and allow adverbs like the original adjective, although they do not inherit the



argument of a predicative adjective. This means that they must be instances of an outer-cycle attachment like SNs and unlike PBNs in Greek and Romanian, and thus include an aP, but not a PredP. In addition, in Section 4 we saw that they preserve the gradation possibilities of the adjective they are derived from. To account for this, we have to assume that these PBNs also include DegreeP, an adjectival external projection (see also Fábregas 2013). They consequently receive the structure in (31).



The difference between SNs and German PBNs concerning adjectival/adverbial modification is captured in this model by the presence/absence of an nP. The

categorizer *n* nominalizes a root or another category, but importantly, once it is present, it brings in a full internal nominal syntax, i.e., gender features and declension information (see Lowenstamm 2008; Panagiotidis 2011; and Iordăchioaia 2014). This means that it will force the resulting structure to fully behave like a noun, with the effect that only adjectives will be allowed as modifiers, since they agree with the noun category. This is the case of SNs in (30).

However, languages seem to also nominalize structures by means of a *D* alone. This has been argued to be the case, among others, with the English Poss-*ing* gerund in (32a), the Romanian supine nominal in (32b) and some German nominalized infinitives as in (32c), where the possessive or the definite determiner is the only nominal marking, everything else indicating a verbal structure that takes adverbial modifiers (see also Alexiadou et al. 2010, 2011; Iordăchioaia 2014).

- (32) a. *John's constantly/*constant* reading this novel
 b. *spălatul bine/*bun al rufelor*
 wash.Sup.the well/good of laundry.Gen
 'washing the laundry well'
 c. *das ständig (nachts) die Sterne* Beobachten
 the constantly at-night the stars.Acc observe.Inf
 'constantly watching the stars at night'

In this respect, German PBNs are similar to the deverbal nominals in (32), since they preserve the modification strategy of the original adjective by means of adverbs, and do not replace it with the one typical of nouns, i.e., by means of adjectives. Our structure in (31) accounts for this in that it lacks an *nP*, which means that German PBNs are nominalizations by *D* alone. Importantly, *D* introduces an external nominal syntax, but not an internal one; it thus accommodates a structure of a different category into a nominal context.²

As further support for the idea that the presence/absence of *nP* correctly accounts for the difference between SNs and PBNs in terms of adjectival/adverbial modification, we also note the contrast in (33) in the selection of determiners. While SNs are compatible with just any determiner, PBNs in German are restricted to the definite determiner.

- (33) a. *die/jene/eine* Schönheit des Landes
 the/that/eine beauty the.Gen country
 'the/that/a beauty of the country'
 b. *das/*jenes/*ein* Schöne(s) an der Sache
 the.N/that.N/a.N beautiful at the thing
 'the nice thing about this business'

Iordăchioaia (2014) argues that this restriction in nominalizations in general is related to the presence/absence of an *nP*. *D* has unvalued nominal (gender

² McNally and de Swart's (2011) syntax for corresponding PBNs in Dutch is based on a similar assumption.

and number) features that must be valued via Agree with *n*. In the absence of *n*, *D* receives default nominal features. While every lexical determiner is compatible with fully valued such features, most of them are incompatible with default features. The definite determiner in German (32c) and (33b), as well as in Romanian (32b), and the English possessive in (32a) count as ‘default’ determiners that these languages employ in such contexts. Note in this respect (34), which shows that unlike German PBNs, Greek and Romanian PBNs are flexible with determiners as predicted by the presence of an *nP* in their structure in (29a).

- | | |
|---|----------|
| (34) a. acest/acel/un (mare) rău al acestei țări | Romanian |
| this/that/a (big) evil of this.Gen country | |
| ‘this/that/a highly evil aspect of this country’ | |
| b. to/ena/afto to kako aftis tis horas | Greek |
| the/a/this the bad this the country.Gen | |
| ‘the/a/this bad part of this country’ | |

5.3. Accommodating QBNs in the model

With the structures in (29) and (30)–(31) we presented individual instantiations of the two DM strategies to form words: root-cycle word formation of nouns and adjectives in (29) and outer-cycle formation of nouns from underlying adjectives of different complexity in (30) and (31). As we have seen, the properties of PBNs in Greek and Romanian, SNs in Greek, Romanian and German, and PBNs in German conform with the properties in (28) that DM associates with the two word formation mechanisms. The next question that arises is how QBNs fit in this model, since they share properties both with SNs and PBNs and yet, also differ from both.

5.3.1. The interpretation and the morpho-syntax of QBNs

Despite their bare morphology, QBNs are not interpreted like PBNs, but rather like SNs, since the adjectival property is predicated of the genitive phrase as shown for German and Romanian in (35) and (36).

- | | | | |
|----------------------------------|----|----------------------|-----|
| German: | | | |
| (35) das Rot der Blume | => | Die Blume ist rot. | QBN |
| the red the.Gen flower | | the flower is red | |
| ‘the red of the flower’ | | ‘The flower is red.’ | |
|
Romanian: | | | |
| (36) a. albastrul cerului | => | Cerule albastru. | QBN |
| blue.the sky.Gen/from sky | | the sky is blue | |
| ‘the blue of the sky’ | | ‘The sky is blue.’ | |
| b. vidul spațiului | => | Spațiul e vid. | QBN |
| empty.the space.Gen | | the space if empty | |
| ‘the emptiness of space’ | | ‘Space is empty.’ | |

This interpretation test indicates that the genitive must be an argument in QBNs just like in SNs. This is further supported by the impossibility to use a PP in QBNs, as shown in (37), a picture that differs from that of PBNs in (17)–(19).

- | | |
|---|--------------|
| (37) a. das Rot der Blume /* an der Blume
the red the.Gen flower/at the flower | German QBN |
| b. to ble tu uranu /* me ton urano
the blue the sky.Gen/at the sky | Greek QBN |
| c. albastrul cerului /* din cer
blue.the sky.Gen/from sky | Romanian QBN |

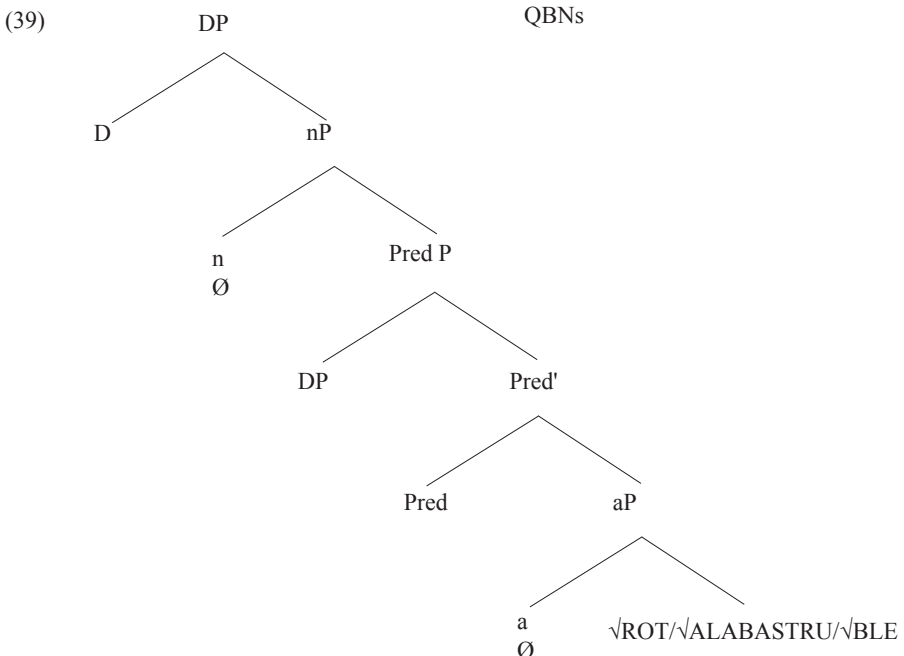
In terms of their morpho-syntactic behavior, QBNs are fully nominal; they only allow adjectives and disallow gradation, similarly to SNs (see (38) for German).

German

- | |
|---|
| (38) a. das schöne /* schön Rot der Blume
the beautiful/beautifully red the.Gen flower
'the beautiful/*beautifully red of the flower' |
| b. *das Röter der Blume
the redder the.Gen flower
'the redder of the flower' |

5.3.2. A DM account for QBNs

Given that QBNs realize a genitive argument of which the adjectival property is predicated, their syntax should be similar to that of SNs, with the difference that they do not have a suffix. Thus they receive a structure similar to (29), given in (39).



This analysis accounts for the meaning and the morpho-syntax of QBNs, but raises a problem for the model of word formation we follow. According to (39), QBNs qualify as word formation from another word (here, a predicative adjective), following the DM pattern in (27). But the prediction is that such word formation processes should be productive and in Section 2 we saw that QBNs have reduced productivity in all the discussed languages (see the table in (7)). Before we proceed with our explanation, note that to some extent we can speak of productivity with QBNs: for instance, it seems to be the case that languages nominalize color adjectives as zero-derived nouns to denote the color itself. SNs usually cannot denote a color, as the Romanian examples in (40) indicate (see also Section 2).

- (40) a. **roșul**/?**roșeața**/***roșeala** trandafirului Romanian
 red.the/redness/redness rose.Gen
 ‘the red/?blush of the rose’
 b. **albastrul**/?**albăstrimea**/***albăstreala** cerului
 blue.the/blueness/blueness sky.Gen
 ‘the blue/?bluishness of the sky’

From a theoretical point of view, if our analysis is on the right track, the reduced productivity must be due to the lack of an overt nominalizing suffix in QBNs. Language in general resists the stacking of abstract suffixes (see Myers 1984), so the structure in (39) cannot be very productive, especially given the possibility to lexicalize it with overt nominalizing suffixes, which are available in all languages, as we saw in Section 2. Following this idea, we predict two things: that SNs and QBNs compete and the former usually win — a fact that is confirmed by the productivity of SNs by comparison to QBNs — and that SNs may sometimes be used instead of QBNs. The latter prediction is also confirmed by a Google search for Romanian, where despite the meaning difference we noted above in (40b), an SN like *albăstrimea cerului* is also attested (i.e., 3,000 hits) in contexts where the intended meaning is best contributed by the QBN *albastrul cerului* (27,000 hits).

6. Conclusions

In this paper, we have distinguished three types of deadjectival nominals on the basis of their morpho-syntax and their interpretation. We offered a syntactic analysis in terms of two strategies of word formation that are made available by Distributed Morphology: word formation from (uncategorized) roots and word formation from words (in this case, from adjectives). The former pattern successfully accounts for the lack of productivity of PBNs in Greek and Romanian, which qualify as nouns derived from the root that may also be categorized as the corresponding adjective. The latter mechanism easily accommodates the productivity and the adjectival properties of German PBNs, which include an adjective with a DegreeP in their

syntax. We analyzed SNs and QBNs as other instances of word formation from words, thus accounting for their quality denotation, which includes the meaning of the original adjective, and for their realization of the argument that the quality holds of. The contrast between German PBNs and SNs/QBNs concerning the adjectival, respectively, nominal morpho-syntax is implemented by means of a contrast in the absence/presence of a nominalizing nP layer. SNs/QBNs have an nP, which brings in a full nominal syntax. German PBNs lack an nP and thus preserve the internal syntax of the original adjective, while their external nominal syntax is contributed by their DP layer, their sole nominal projection.

References

- Alexiadou, A. 2001. *Functional Structure in Nominals: Nominalization and Ergativity*. Amsterdam: John Benjamins.
- Alexiadou, A. 2013. "Deriving color adjectival nominalizations." *Linguistica. Revista de Estudos Linguísticos da Universidade do Porto* 8. 143–158.
- Alexiadou, A., G. Iordăchioaia, D. Marzo and B. Umbreit. 2012. "Comparing lexicalist and syntactic insights on deadjectival nominalizations." Talk presented at the *Brussels Conference on Generative Linguistics* 7, Dec. 2012.
- Alexiadou, A., G. Iordăchioaia and F. Schäfer. 2011. "Scaling the Variation in Romance and Germanic Nominalizations." In: Sleeman P. and H. Peridon (eds.) *The Noun Phrase in Romance and Germanic*. Amsterdam, Philadelphia: John Benjamins, 25–40.
- Alexiadou, A., G. Iordăchioaia and E. Soare. 2010. "Number/aspect interactions in the syntax of nominalizations: A Distributed Morphology approach." *Journal of Linguistics*. 46:3. 537–574.
- Arad, M. 2005. *Roots and Patterns*. Springer: Dordrecht.
- Bécherel, D. 1979. *La substantivation de l'adjectif*. Université Paul-Valéry Montpellier III, 73–85.
- Bosque, I. and J. Moreno. 1990. "Las construcciones con lo y la denotacion del neutro." *Linguistica* 2. 5–50.
- Bowers, J. 1993. "The syntax of predication." *Linguistic Inquiry*. 24 (4). 591–656.
- Embick, D. 2010. *Localism vs. Globalism in Morphology and Phonology*. Cambridge: MIT Press.
- Fábregas, A. 2013. "Towards a Syntactic Account of Affix Combinations: From Nouns to Adjectives and Viceversa." In: Iordăchioaia, G., I. Roy and K. Takamine (eds.) *Categorization and Category Change*. Newcastle upon Tyne: Cambridge Scholars Publishing, 95–122.
- Giannakidou, A. and M. Stavrou. 1999. "Nominalization and ellipsis in the Greek DP." *The Linguistic Review* 16. 295–331.
- Grimshaw, J. 1990. *Argument Structure*. Cambridge: MIT Press.
- Halle, M. 1973. "Prolegomena to a theory of word formation." *Linguistic Inquiry* 4. 3–16.
- Halle, M. and A. Marantz. 1993. "Distributed Morphology and the Pieces of Inflection." In: Hale, K. and S.J. Keyser (eds.) *The View from Building 20*, Cambridge: MIT Press, 111–176.
- Harley, H. and R. Noyer. 1999. "State-of-the-article: Distributed Morphology." *GLoT International* 4 (4). 3–9.
- Iordăchioaia, G. 2014. "The Interaction between nP and DP in Nominalizations." In: Huang, H.-L., E. Poole and A. Rysling (eds.) *Proceedings of NELS* 43, Vol. 1, 179–190. GLSA Amherst.
- Lauwers, P. 2008. "The nominalization of adjectives in French: From morphological conversion to categorial mismatch." *Folia Linguistica* 42. 135–176.

- Lowenstamm, J. 2008. "On n , $\sqrt{\quad}$, and Types of Nouns." In: Hartmann, J.M., V. Hegedus and H. van Riemsdijk (eds.) *Sounds of Silence: Empty Elements in Syntax and Phonology* [North Holland Linguistic Series, Linguistic Variations Volume 63]. Amsterdam: Elsevier.
- Marantz, A. 2001. *Words and Things*. Ms., New York University.
- Marantz, A. to appear. "Locality Domains for Contextual Allomorphy across the Interfaces." In: Matushansky, O. and A. Marantz (eds.) *Distributed Morphology Today: Morphemes for Morris Halle*. Cambridge: MIT Press.
- McNally, L. and H. de Swart. 2011. *Inflection and derivation: How adjectives and nouns refer to abstract objects*. Pre-proceedings of the 18th Amsterdam Colloquium, 425–434.
- McNally, L. and H. de Swart. 2013. *Reference to properties and via properties: The case of Dutch*. Talk given at the University of Paris 8, October 2013.
- Myers, S. 1984. "Zero-derivation and inflection." *MIT Working Papers in Linguistics* 7. 53–69.
- Panagiotidis, E.P. 2011. "Categorial features and categorizers." *The Linguistic Review* 28. 325–346.
- Roy, I. 2010. "Deadjectival Nominalizations and the Structure of the Adjective." In: Alexiadou, A. and M. Rathert (eds.) *The Syntax of Nominalizations across Languages and Frameworks*. Berlin: Mouton de Gruyter. 129–158.
- Sleeman, P. 1996. *Licensing empty nouns in French*. Ph.D. Dissertation. HIL.
- Villalba, X. 2009. "Definite Adjective Nominalizations in Spanish." In: Espinal M.T., M. Leonetti and L. McNally (eds.) *Proceedings of the IV Nereus International Workshop "Definiteness and DP Structure in Romance Languages"*. Fachbereich Sprachwissenschaft Universität Konstanz.
- Villalba, X. and A. Bartra-Kaufmann. 2009. "Predicate focus fronting in the Spanish determiner phrase." *Lingua* 120. 819–849.