

# The multifaceted nature of denominal adjectives

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## Abstract

This study proposes a fine-grained classification and analysis of French denominal adjectives based mainly on the semantic relationships that exist between the noun the adjective modifies (the head-noun) and the noun it is derived from. Capitalizing on previous works, it is argued that these relationships are intrinsic whenever they focus on a dimension proper to the referent of the head-noun, but they are extrinsic whenever this referent is conceived of as a participant in an event denoted either by the head or the modified noun. After a brief characterization of denominal adjectives in relation with other adjectives, the article lists the variety of meanings these adjectives exhibit in French and tries to shed light on the reasons why only some of them sound acceptable when occurring with a degree adverb or in a predicative structure. In the account sketched in the final section, denominal adjectives are dealt with in the same way as intersective adjectives.

**Keywords:** classification of adjectives, relational adjectives, intrinsic/extrinsic semantic relation, meaning/exponent mapping, semantic dimensions

## 1. Introduction

Denominal adjectives (henceforth, DAs) are adjectives morphologically correlated with a noun, identified here as their base-noun. The expression ‘morphologically correlated’ means that this noun and the DA are linked through a pattern which can be contemplated both as a system and as a product. From the systemic point of view, a morphological pattern implies that the items are formally and semantically correlated: The base-noun is identified as a subpart of the DA, and the semantic content of the base-noun is a component of the meaning of the DA. To that extent, *lagune*, *lagunaire* (fra)<sup>1</sup> in (1a) can be said to instantiate the pattern forming adjectives suffixed in *-aire* in French. Note that the formal relationship is a cline: It may be totally transparent, as in (1a), moderately transparent when the DA is based upon an allomorph of the nominal

stem as in (1b), the expected form being *sumatr-ais* (Roché 2008: 1576) and (1c), or totally opaque as when suppletion occurs, as in (1d).<sup>2</sup>

- (1) (a) *lagun-aire* ← *lagune*  
       ‘lagoonal’        ‘lagoon’  
       (b) *sumatran\ais* ← *Sumatra*  
           ‘of Sumatra’    ‘Sumatra’  
       (c) *triangul\aire* < lat *triangularis*,   triangle        < lat *triangulum*  
           ‘triangular’                            ‘triangle’  
       (d) *municipal*    < lat *municipalis* ~ *commune*  
           ‘municipal’                            ‘municipality’

As for the meaning, one and the same DA may be correlated with more than one base-noun, for example fra *électoral* ‘electoral’ ← {*électeur* ‘elector’, *élection* ‘election’}, a phenomenon which has been analyzed as the outcome of an ‘economy principle’ by Roché (2008: 1573). For more examples and an account capitalizing on Bochner’s (1993: 70) cumulative patterns, I refer to Strnadová (2014: 213–30).

From the production point of view, a DA is morphologically correlated with a noun, if and only if the correlation instantiates an appropriate morphological pattern and takes place at some time in the history of the language, which supposes that the pattern in question is productive at this time. The DA *lagunaire* and base-noun *lagune* in (1a) satisfy these requirements, insofar as the former has been derived from the latter at the end of the 19<sup>th</sup> century by the means of a morphological pattern that is still productive nowadays (the same would be true of the items in 1b). On the other hand, the noun *triangle* and the DA *triangulaire* fail to abide these requirements, since each of them has been borrowed from late Latin, as illustrated in (1c). If we adopt Hathout’s (2011: 262) terminology, the units in (1a) or (1b) belong to the same ‘morphological derivational family’, whereas those in (1c) belong to the same ‘lexical derivational family’. In most cases, the speakers do not make any difference between the two types of pairs. This is so because the regular morphological link existing in Latin between *triangulum* and *triangularis* has been transferred to French through lexical borrowing. Nevertheless, it may happen that a borrowed or inherited item carries with itself properties peculiar to the source language and at odds with the interpretation constructed by the regular morphological pattern.<sup>3</sup> This justifies maintaining the distinction. In what follows, unless otherwise stated and so long as the relationship is regular, the two cases will be dealt with on an equal footing. The domain of this study will then also encompass DAs that have never been the result of a derivation process (for example, *triangulaire*), including those that have no formal correlate (for example, *municipal* in (1d)).

Most studies on DAs focused on relational adjectives (henceforth, RAs), mainly for historical reasons tied to the influence of Bally (1965). The first aim of this article is to widen the perspective in order to better delimit the place of DAs within the class of adjectives in general. To that extent, the whole variety of meanings DAs can express as

well as the way meanings and exponents map has to be considered. Section 2 addresses the issue of the place of DAs within the class of adjectives, while section 3 reviews the various meanings that DAs can have in French and the mapping issue.

It is generally taken for granted that relational adjectives constitute a lexical class of their own (McNally & Boleda 2004). However, this class does not seem to have a grammatical status as robust as, for example, psych verbs or absolute adjectives. The problem is that one cannot determine once for all if a given DA (for example, eng *Cuban* or fra *pluvieux* ‘rainy’) will have a relational interpretation or not, because it behaves differently in function of the constructions it occurs in. The second aim of the paper is to scrutinize how the conditions put forward to discriminate RAs interact with their semantic content. Section 4 is precisely devoted to a fine-grained investigation of the way the semantic content of the various DAs is organized, trying to clarify why semantic shifts are sometimes possible and sometimes not.

Attributive adjectives modify their head-noun and may have three main functions (Warren 1988, Rainer 2013): (i) to describe (or characterize), as in *raw food*, (ii) to identify (specify), as in *(the) child singing upstairs*, or (iii) to classify (categorize), as in *civil rights*. DAs carry out all three functions, but whereas the describing function follows from the existence of an internal predication between the base-noun and the head-noun in case (i), for example *circular path* = ‘(the) path is circular’, in case (iii) the classifying function is externally supported, that is, supported by the existence of other classifying expressions, which compete within the same domain of activity or knowledge, for example *human rights*, *animal rights*, *children’s rights*, etc. (see 4.2.). The third goal of the study limits itself to show how the functions just mentioned are instantiated by various types of DAs. A semantic account of cases not yet touched upon is sketched in section 5.

## 2. Denominal adjectives and the class of adjectives

I straightaway assume that the categories noun, verb and adjective can appropriately be distinguished in French and other languages that will be mentioned in the present paper.<sup>4</sup> To capture the way DAs and other adjectives are articulated we need to check their respective properties for what regards morphology, syntax, and semantics. These issues will be addressed in turn.

Creissels (2006: 199) notes that adjectives are logically not distinct from nouns and verbs insofar as items of each category may denote properties (for example, *knife*, *to run*, *green*) or relations (for example, *friend*, *to look at*, *close*). He claims that morphological criteria are usually the most reliable ones to distinguish adjectives from verbs or nouns in a given language. This is true of DAs as well, at least in French and other Indo-European languages, insofar as: (i) many of them have an ending typical of simple adjectives (for example, fra *farin-eux* ← *farine* ‘flour’ compared with *fameux* ‘famous’ < lat *famosus*),<sup>5</sup> and (ii) they follow the agreement patterns of other adjectives.

Table 1 gives the syntactic structures typical of the so-called qualifying adjectives such as *riche* ‘rich’, *plein* ‘full’, etc., which correspond to gradable relative adjectives

Table 1. Syntactic structures of plain adjectives.

Structure	Examples	Translation
(a) A N	<i>(de) broussailleux sourcils</i>	'bushy eyebrows'
(b) N A	<i>tronc moussu</i>	'mossy trunk'
(c) BE A	<i>Ce service est réglementaire</i>	'this service is statutory'
(d) DEG A	<i>voix très caverneuse</i>	'very cavernous voice'
(e) Apposition	<i>Jean, nerveux, rata la cible</i>	'John, nervous, missed the target'

Table 2. Syntactic structures of relational adjectives.

Structure	Examples	Translation
(a) A N	* <i>ducale visite</i>	'ducal visit'
(b) N A	<i>visite ducale</i>	'ducal visit'
(c) BE A	(* <i>) Cette visite est ducale</i>	'this visit is ducal'
(d) DEG A	(* <i>) une visite très ducale</i>	'a very ducal visit'
(e) Apposition	* <i>La visite, ducale, fut annulée</i>	'the visit, ducal, was cancelled'

(Kennedy & McNally 2005).<sup>6</sup> The adjectives given in this table are all denominal, which demonstrates that a subpart of them share the syntactic properties of qualifying adjectives. However, not all types of DAs behave like this. Since Bally (1965), it has been commonly assumed that the majority constitutes what he dubbed 'relational adjectives' (see Rainer 2013 for an appraisal of Bally in this regard). Syntactically, they are differentiated from the former by the fact that they appear only in structure (b) in normal circumstances, and that they can be coordinated with other DAs but not with qualifying adjectives, for example, ?\**A quick and ducal visit* (Bartning 1980: 9). Table 2 illustrates the syntactic behavior of the so-called RAs with fra *ducal* 'ducal' ← *duc* 'duke' (the status of the examples will be discussed in section 4). As McNally & Boleda (2004: 183) note, a relational adjective need not be denominal, at least synchronically; it needs only to fail the tests listed in Table 2 except for (b) (or (a)) and involve a nominal content in its meaning to be considered as such (see *municipal* 'municipal' in (1d)).

As for semantics, the traditional view, which dates back to Bally, paid attention only to the so-called relational adjectives. Bally (1965) assumes that the meaning of a RA is not distinct from that of its base-noun, insofar as a DA is conceived of as a recategorization of the base-noun: instead of occurring syntactically as a noun, the latter merely occurs as an adjective and, in most cases, this noun in disguise is an argument of the head-noun it modifies. Hence, the paraphrase with a PP[*de*] (for example, fra *éruption solaire* = *éruption du soleil* 'eruption of the sun'). Many works supporting this view did not provide any semantic representation, which makes them difficult to evaluate. Recent studies, however, have taken this hypothesis up in a more formal way (see Fábregas 2007, Alexiadou and Stavrou 2011), but their conclusion was rebutted in Arsenijević *et al.* (2014).

Table 3. Cross-classification of semantic accounts of adjectives.

Type	Simple adjective	Denominal adjective	French translation
Intersective	<i>blue car</i>	<i>mossy trunk</i>	<i>tronc moussu</i>
		<i>thoracic surgeon</i>	<i>chirurgien thoracique</i>
	<i>Thai recipe</i>	<i>Alpine biotope</i>	<i>biotope alpin</i>
	<i>frequent breakdown</i>	<i>periodic review</i>	<i>examen périodique</i>
Subjective	<i>swift player</i>		<i>joueur rapide</i>
Adverbial	<i>former biker</i>		<i>ex-motard</i>
	<i>rare hiker</i>	<i>occasional hiker</i>	<i>randonneur occasionnel</i>
Privative	<i>fake fur</i>		<i>fausse fourrure</i>

To discriminate the semantic properties of DAs from those of plain adjectives, I present in Table 3 the semantic classification of adjectives arrived at in formal semantic approaches (the criteria are given for the attributive use; Partee 2003, Roy 2010). In the original approach, only qualifying adjectives received an intersective account. However, a series of works showed that the interpretation of many types of adjectives, formerly modeled as higher-properties modifiers, could be accounted for in an intersective manner. This analysis was first proposed for classical relational adjectives such as *presidential*, *pneumonic* (McNally and Boleda 2004). It was then extended to ethnic adjectives (for example, *Alpine*, *Thai*, Arsenijević *et al.* 2014), and frequency adjectives (for example, *frequent*, *periodic*, Gehrke and McNally 2015), be they denominal or not. Table 3 presents the main results of these studies with examples for both simple and denominal adjectives (with their French counterparts).<sup>7</sup>

These results have been achieved assuming the following hypotheses:<sup>8</sup> (i) nouns denote properties of kinds: the numberless noun *horse* denotes the set of all kinds of horses (Arabian, Przewalski, Percheron, etc.); (ii) predicates apply to tokens (objects or events) or to kinds (objects or events), a type distinction coded here with a subscript ‘o’ or ‘k’; (iii) a nominal phrase denotes tokens when it is inflected for Number: *horse.SG* denotes the set of atomic tokens which instantiate some kind of horse, whereas *horse.PL* denotes sets of token pluralities of some horse kind; (iv) in the representations **R** is the realization relation introduced by Carlson (1977: 449); (v) in addition, deverbal participants, for example, *nomina agentis*, have an event kind argument in their representation (Winter and Zwarts 2012). The derivations of *white horse* and *thoracic surgeon* illustrate the similarity between the two analyses.

- (2) (a)  $[[white]] \equiv \lambda x_k. \mathbf{white}(x_k)$   
 (b)  $[[horse]] \equiv \lambda x_k. \mathbf{horse}(x_k)$   
 (c)  $[[white\ horse]] = \lambda x_k. \mathbf{white}(x_k) \wedge \mathbf{horse}(x_k)$   
 (d)  $[[_{Num}[white\ horse]]] = \lambda y_o. \exists x_k [\mathbf{white}(x_k) \wedge \mathbf{horse}(x_k) \wedge \mathbf{R}(y_o, x_k)]$
- (3) (a)  $[[thoracic]] \equiv \lambda P_k \lambda x_k. [P_k(x_k) \wedge \mathbf{R}(x_k, \mathbf{thorax})]$   
 (b)  $[[surgeon]] \equiv \lambda x_k \lambda e_k. [\mathbf{operate}(e_k) \wedge \mathbf{Agt}(x_k, e_k)]$

- (c)  $[[\textit{thoracic surgeon}]] = \lambda_{x_k} \lambda_{e_k} [\text{operate}(e_k) \wedge \text{Agt}(x_k, e_k) \wedge \text{R}(x_k, \text{thorax})]$   
 (d)  $[[{}_{\text{Num}}[\textit{thoracic surgeon}]]] = \lambda_{y_o} \exists x_k \exists e_k [\text{operate}(x_k) \wedge \text{Agt}(x_k, e_k) \wedge \text{R}(x_k, \text{thorax}) \wedge \text{R}(y_o, x_k)]$

Roy (2010) notices that adjectives used predicatively always have an intersective interpretation, whereas those used attributively can have either an intersective or a non-intersective interpretation. She further argues that only relational adjectives that are ambiguous between the two interpretations can have a predicative use. Unfortunately, in the example she gives, *une conférence internationale* ‘an international meeting’, the two interpretations are quite close and, in the absence of any semantic representation, it is difficult to assess the soundness of the remark. More interesting is the fact that some attributive adjectives dealt with in an intersective way cannot occur predicatively, as attested by the ungrammaticality of French examples (4b) and (4d).<sup>9</sup>

- (4) (a) *chirurgien thoracique*  
       ‘thoracic surgeon’  
 (b) \**Ce chirurgien est thoracique.*  
       ‘This surgeon is thoracic’  
 (c) *marbrier funéraire*  
       ‘monumental mason’ lit. ‘funeral marble mason’  
 (d) \**Ce marbrier est funéraire.*  
       ‘This mason is monumental’

A search via Google (09.2015) gives no attestation for the predicative versions (4b), (4d). These data contrast with those in (5), where the predicative use of *ducal*, however infrequent, is nevertheless attested. They also bring us back to the issue raised by the grammatical status of the predicative structures in Table 2, and more generally to the conditions of predicability for denominal adjectives. These issues will be dealt with in section 4.

- (5) (a) *La sénéchaussée est ducal de 1569 à la Révolution.*  
       (<http://www.infobretagne.com/guingamp.htm>, 09.2015)  
       ‘The charge of seneschal is ducal from 1569 to the Revolution’  
 (b) *La famille propriétaire de ce domaine est ducal.*  
       (<https://www.geocaching.com/geocache>, 09.2015)  
       ‘The family who owns this domain is ducal’

The conclusion that can be drawn from the preceding comparison can be summed up in two points:

1. With the possible exception of frequency adjectives such as *occasional*, the interpretation of most denominal adjectives can be accounted for by means of an intersective analysis.

Table 4. Contents expressed by German denominal adjectives (Rainer 2013).

Relation	Exponent	Examples	Translation
All-purpose	<i>-isch, -lich, -mäßig</i>	<i>freund-lich</i>	'friendly'
'like'	<i>-haft, -ig, -isch, -lich, etc.</i>	<i>wässer-ig</i>	'watery'
'made of'	<i>-e(r)n</i>	<i>eis-ern</i>	'of iron'
'having'	<i>-haft, -ig, -lich</i>	<i>bärt-ig</i>	'bearded'
'without'	<i>-los</i>	<i>kraft-los</i>	'strengthless'
'in, from'	<i>-er, -isch</i>	<i>Karlsruhe-er</i>	'from Karlsruhe'
'required by'	<i>-mäßig</i>	<i>schul-mäßig</i>	'didactic'

2. No case of DAs with a clear substantive reading has been observed. The same is true for the privative interpretation (supposing this subclass exists at all). When the construction is taken into account, the question of the conditions that make DAs sometimes behave like qualifying adjectives and sometimes like relational adjectives is raised. This issue is crucial for approaches assuming that relational adjectives constitute a lexical category.

### 3. Meaning variety in DAs

According to Rainer (2013: 16), German has dedicated exponents for five very common semantic categories (resemblance, possession, material, privation and location; see Table 4) and shows patterns of polysemy which seem to be widespread cross-linguistically. French in comparison lacks the privative and conformity ('required by') meanings.<sup>10</sup>

Except for the privative meaning, these meanings largely overlap with the covert relations put to light by the linguistic (Downing 1977, Levi 1978, Warren 1984) or psycholinguistic studies (Gagné 2002, Libben 2006) about English N+N compounds. At a very general level, these meanings can be split into two groups (intrinsic *vs.* extrinsic) in function of the way the referents of the nouns take part in the relation. The intrinsic relation involves the constitutive properties of the referent of the base-noun, whereas in the extrinsic relation, this referent is involved *qua* participant in the relation. This distinction is similar to the one once proposed by Cadiot and Nemo (1997) between intrinsic and extrinsic properties or Van de Velde (2006: 167) between 'qualities' and 'states'. Intrinsic relations include the following subtypes: similitude, (inalienable) possession, and matter. Extrinsic relations are alienable possession, origin, location, essive, participant, cause. These groupings correspond to the Category I *vs.* Category II adjectives of Warren (1988). Each of these relations may itself include several subtypes, which correspond each to the actual meaning associated to the morphological exponents. The detail of these types is presented in Tables 5 and 6 (see also Bartning 1980: 98–100). The subtypes with a name in Table 5, together with Matter, are what Bartsch (1986: 294) calls a 'dimension', that is, a 'domain of interpretation for the adjective'. Scalar adjectives have by definition a dimension,

Table 5. Examples of intrinsic relations.

Relation	Subtype	Examples	Translation
	Aspect	<i>roche vitr\euse</i>	'vitreous stone'
	Consistency	<i>légume farin-eux</i>	'starchy vegetable'
	Color	<i>teint cir-eux</i>	'waxy complexion'
	Form	<i>tissu lobul-aire</i>	'tissue with lobules'
	Taste	<i>boisson liquor\euse</i>	'liquor tasting beverage'
	Sound	<i>son cristall-in</i>	'sound of crystal'
	Manner	<i>récit ossian-esque</i>	'Ossianic like tale'
Possession 1	'x with y'	<i>visage barb-u</i>	'bearded face'
	Makeup	<i>viande filandr-euse</i>	'stringy meat'
	'x proper to y'	<i>cône volcan-ique</i>	'volcanic cone'
Matter	—	<i>paroi roch-euse</i>	'rock face'

Table 6. Examples of extrinsic relations.

Relation	Subtype	Examples	Translation
Possess. 2	$\text{possess}(x,y) \wedge \text{bse-N}(x)$	(rus) <i>otc\ovo pal'to</i>	'father's coat'
Origin	—	<i>ancêtre levant-in</i>	'Levantine ancestor'
Location 1	$\text{hd-N} = \text{figure}$ , $\text{bse-N} = \text{ground}$	<i>carte mur-ale</i>	'wall map'
Location 2	$\text{bse-N} = \text{figure}$ , $\text{hd-N} = \text{ground}$	<i>zone pavillonn-aire</i>	'residential area'
Essive	$\text{isa}(x,y) \wedge \text{bse-N}(y)$	<i>pêche industri-elle</i>	'industrial fishing'
Partpt 1	$\text{R}(x,y,e) \wedge \text{bse-N}(x) \dots$	<i>bénédictio pap-ale</i>	'papal blessing'
Partpt 2	$\text{R}(x,y,e) \wedge \text{bse-N}(y) \dots$	<i>mesure angul\aire</i>	'angle measuring'
Cause 1	$\text{cause}(x,y) \wedge \text{bse-N}(x)$	<i>apoplexie sér-euse</i>	'serous apoplexy'
Cause 2	$\text{cause}(x,y) \wedge \text{hd-N}(x)$	<i>virus apht-eux</i>	'aphthous virus'

which corresponds to the nature of the scale (Kennedy 1999). It comes as no surprise, then, that DAs marked for an intrinsic relation can be graded as scalar adjectives can. Selecting the dimension depends on the way the lexical content of the head-noun and the base-noun correlate (the same idea is in Warren 1988: 124).

The semantic distinctiveness of the relations in Table 5 is not equal for all of them. The most problematic are those under the Possession 1 heading, and neither dictionaries nor grammars help us much on this point. One problem is the locative meaning that sometimes creeps into the 'with' or Makeup interpretation, a long-acknowledged problem (Gawelko 1975: 312). For instance, with *visage barbu* 'bearded face', the beard is on the face; with *soupe grumeleuse* 'lumpy soup', the lumps are in the soup, but such interpretation does not crop up with *femme courageuse* 'brave woman', *végétation toufue* 'bushy vegetation' or (*lichen à*) *tissu globuleux* '(lichen with) globular tissue'. Besides, in the case of *-esque*, the relations Manner and Typicality are intermingled since, by construction, most of these adjectives mean 'in a manner typical to the base-noun's referent'. Hopefully with other adjectives the 'x proper to y' (that is,



Typicality) meaning is normally free of a Manner component. In addition, the Origin relation may end up in a Typicality relation (see section 4). Phrases with a typicality reading may be used to express the high degree of a property. This happens when the head-noun denotes a property stereotypically associated with the base-noun's referent, for example, *chaleur tropicale* 'tropical warmth' referring to a 'very hot warmth'.

In Table 5, variables *x* and *y* correspond to the head-noun and the base-noun respectively. In Table 6 Possession 2 has been added, although it does not exist in French, because it is realized by a 'possessive' DA in many languages, for example, in Slavic. The relation Origin corresponds to the basic content of the so-called ethnic adjectives, the meaning of which always involves a place name (Arsenijević *et al.* 2014). The Essive relation aims at capturing the idea that a given entity A is categorized as B (identifying predication). It can be conceived of as a holistic similitude instead of a partial one: *pêche industrielle* denotes fishing that is an industry (the websites devoted to this activity make it clear that this kind of fishing is really an industry for the size of the ships, quantity of fish destroyed, freezing capacity, etc.). Participant means 'involved in an agentive scenario'. Figure and Ground are defined as in Talmy (2000). Data in Table 7 should be balanced in function of the number of types attested for each relation because big discrepancies exist between them.<sup>11</sup>

Table 7 shows that meanings are unevenly distributed among exponents. Except for the relations Consistency, Sound, Manner and Matter, no DA type is interpretable in a context-independent way, because none realizes one dimension only, unlike adjectives such as *sick* or *blue* (Bartsch 1986: 294). However, a particular adjective may unambiguously be marked for a dimension and then realize a given meaning as, for example, fra *poisseux* 'sticky' ← *poix* 'pitch'.

The selection of the exponents in Table 7 calls for a few remarks. The notation *Al* subsumes *-al* and *-el*, insofar as these suffixes are considered allomorphs in dictionaries and linguistic studies. The same is true for *-an*, *-ais* and *-ois*, which are semantically equivalent, even though the distribution of the latter two differs for morphophonological reasons (Eggert 2005, Plénat 2008). The so-called 'Purpose' or 'Destination' meaning, for example *manuel scolaire* 'textbook', *local commercial* 'commercial premises', has not been kept, because it is pragmatically implicated rather than basic (contrary to the spatial meaning, for instance). To help the reader get a better view of the distinctions just given, I present a few examples for each of the exponents (all are attested on the Web). More examples of adjectives in *-eux* can be found in Fradin (2007, 2008).

- 1) A-*al* / A-*el*: Characteristic: *temps hivernal* 'winter weather'; Location 1: *cyclone tropical* 'tropical typhoon'; Location 2: *habitat nymphal* 'nymphal habitat'; Essive: *soulèvement insurrectionnel* 'insurrectionary uprising'; Participant 1: *dispute familiale* 'family quarrel'; Participant 2: *élection présidentielle* 'presidential election'; Cause 2: *gouvernement insurrectionnel* 'government that emerged from insurgency'.



- 2) A-ain: Origin: *chanteur cubain* 'Cuban singer'. Characteristic: Most adjectives expressing typicality being inherited or borrowed from Latin, for example, *humain* 'human', they belong to lexical derivational families (see section 1).
- 3) A-aire: Form: *socle triangulaire* 'triangular base'; 'with': *homme autoritaire* 'authoritarian man'; Typicality: *relief lunaire* 'lunar landscape'; Origin: *eau glaciale* 'water from glaciers'; Location 1: *rivages insulaires* 'island seashores'; Location 2: *zone pavillonnaire* 'residential area'; Essive: *ville portuaire* 'port town'; Participant 1: *manœuvres militaires*, 'military manoeuvres', that is, 'manoeuvres of the army'; Participant 2: *coupe budgétaire* 'budget cut'; Cause 1: *caractère héréditaire* 'hereditary character'; Cause 2: *engin incendiaire* 'incendiary device'.
- 4) A-esque: Manner: *effet ingresque* 'effect in the style of Ingres'; Characteristic: *histoire feuilletonnesque* 'story as in a serial'.
- 5) A-eux: Aspect: *feuille cotonneuse* 'downy leaf'; Consistency: *navet caoutchouteux* 'chewy turnip'; Color: *ciel laiteux* 'milky sky'; Form: *clocher bulbeux* 'bulbous bell tower'; Taste: *saveur mielleuse* 'honeyed taste'; 'with': *forêt ombreuse* 'shady forest';<sup>12</sup> Makeup: *purée grumeleuse* 'lumpy purée'; Matter: *piton rocheux* 'rock peak'.
- 6) A-ien: Typicality: *univers kafkaïen* 'Kafka's world'; Origin: *mangue péruvienne* 'mango from Peru'; Participant 1: *critique darwinienne* 'darwinian criticism'.
- 7) A-ier: Characteristic: *muscle paucier* 'skin muscle'; Location 2: *porte palière* 'landing door'; Participant 1: *production minière* 'mine production', *gisement pétrolier* 'oil-field'; Participant 2: *industrie lunetière* 'industry producing glasses'.
- 8) A-ique: Form: *pignon cônica* 'cone-shaped cog'; Typicality: *cône volcanique* 'volcanic cone'; Essive: *ferronnerie artistique* 'wrought-iron craft'; Participant 1: *critique écologique du capitalisme* 'ecological criticism of capitalism'.
- 9) A-iste: Typicality: *régime absolutiste* 'absolutist regime'; Participant 1: *critique robespierriste* 'criticism by Robespierre'.
- 10) A-ais: Origin: *biscuits nantais* 'biscuits from Nantes', *horloge comtoise* 'clock made in Franche-Comté'.
- 11) A-in: Sound: *écho cristallin* 'crystalline echo'; Typicality: *profil chevalin* 'horsy profile'; Origin: *cuisine périgourdine* 'cooking from Perigord'.
- 12) A-u: Form: *langue fourchue* 'forked tongue'; 'with': *homme ventru* 'potbellied man'.
- 13) A-é: Aspect: *ligament dentelé* 'denticulate ligament'; Color: *teint safrané* 'safron yellow complexion'; Form: *anis étoilé* 'star anise'; Taste: *crème vanillée* 'vanilla cream'; 'with': *roue dentée* 'cog-wheel'; Location 2: *cheveux gominés* 'slicked back hair' (*gominé* ← *Gomina* ≈ *Brylcreem*).

Assuming that the facts collected are reliable and representative, a survey of Table 7 lets some tendencies emerge:

1. DAs of the intrinsic group tend to be marked for very few dimensions, if we leave aside those ending in *-eux* and *-é*.

2. Ethnic DAs (= relation ‘Origin’) may acquire a Typicality meaning (for example, *cuisine lyonnaise* ‘cooking typical of Lyon’). This is a well-known extension noted by Arsenijević *et al.* (2014) among others. On the other hand, they do not exhibit any meaning belonging to the extrinsic group.
3. Relational adjectives coincide with those expressing the Typicality meaning and able to develop most of the extrinsic relations. Their exponents are *-al*, *-aire*, *-ien*, *-ier*, *-ique* and *-iste*.
4. Adjectives in *-eux* have clearly a distinct profile, since they have many intrinsic and extrinsic meanings altogether. However, they do not function as all-purpose DAs because they are subject to specific constraints that the other DAs are free from.<sup>13</sup>

Does Table 7 give an accurate picture of the meaning repartition between the suffixes it lists? That question has been raised by one of the reviewers and to answer it supposes a thorough investigation of large corpora. For all DAs constructed with each suffix, this requires us to check the types of interpretation that are attested in the constructions where these DAs occur and to evaluate the weight (percentage) of each meaning for each DA. Ideally, the results should be compared with those produced by speakers/listeners processing N + DA phrases through psycholinguistic experiments. This is a research program of its own.

#### 4. The structure of interpretation

The two main distributional criteria that have been proposed to distinguish relational from qualifying DAs (see Table 2) are restated under (6). DEG subsumes *very* as well as *completely*, or their French counterparts, depending on the boundedness of the scale. In what follows, I check if DAs marked for the relations listed in Table 7 can occur in structures (6).

- (6) (a) head-N DEG DA (co-occurrence with adverbs of degree)  
 (b) head-N BE DA (predicative use)

##### 4.1. The degree criterion

Starting with structure type A, we see that the relations can be split into three groups. In the first one, the DA passes the test without any problem; this is the case of all Similitude relations, of the ‘with’, Typicality and Location 2 relations. In the second one, the DA systematically fails: this happens with Form, Matter, Location 1, Essive, Participant 2 and Cause relations. In the third one, the DA may occur in structure (6a) but at the expense of an interpretation shift: This is observed with Makeup, Origin, and Participant 1 relations. Degree can be conceived of either qualitatively or quantitatively. In the first case the degree word is an intensifier: The referent of the Degree noun phrase possesses to a high degree the quality identified by the dimension

associated with the base-noun. The *denotatum* of the latter functions as an ideal (Van de Velde 1995: 86) and, the more the referent of the phrase resembles this ideal for the dimension in question, the truer the relation. Examples listed under (7) illustrate the relations of Similitude, Manner and Characteristic.

- (7) (a) *tige très cotonneuse*  
 ‘very downy stem’  
*légume très farineux*  
 ‘very floury vegetable’  
*socle complètement circulaire*  
 ‘completely circular base’  
*voix très cristalline*  
 ‘very crystalline voice’, etc.
- (b) *effet complètement ingresque*  
 ‘effect completely in the style of Ingres’
- (c) *régime très despotique*  
 ‘very despotic regime’  
*temps très hivernal*  
 ‘typical winter weather’.

In the second case, the interpretation is correlated with the possibility to say ‘this head-*N* has *x* much base-*N* (in it)’ or ‘head-*N* is with *x* much base-*N*’ and the whole phrase expresses a great amount of objects or substance denoted by the base-noun (= high degree on the scale of quantity). For instance, the examples in (8b) can be paraphrased by *un homme avec beaucoup de ventre* ‘a man with a large belly’ and *une allée avec beaucoup d’ombre* ‘a path with a lot of shade’. This interpretation is the rule with Location 2 but less frequent with the ‘with’ and Typicality relations.

- (8) (a) Location 2: *exposé très lacunaire*  
 ‘talk with many gaps’  
*ciel très nuageux*  
 ‘very cloudy sky’  
*quartier très hôtelier*  
 ‘area with many hotels’
- (b) ‘with’: *homme très ventru*  
 ‘very potbellied man’  
*allée très ombreuse*  
 ‘very shady path’
- (c) Makeup: *soupe très grumeleuse*  
 ‘very lumpy soup’

Whenever the DA fails test (6a), it means that we have a non-gradable relation. According to Bartsch (1986: 196), non-gradable properties include, among others, the

property of Shape, for example *triangular* and Matter, for example *wooden*. However, we saw in (7a) that adjectives denoting shape can be graded. Hence, the list of non-gradable DAs will include the Matter, Location 1, Essive, Participant and Cause relations. For the last three cases, the non-gradability follows from the fact that they involve (logical) predicates and that the relation between a predicate and its arguments is not gradable. For Essive it is, because we have an ascriptive predication (Huddleston & Pullum 2002: 266), noted by the *isa* ('is a') link in semantic networks (more on the Essive reading in Fradin 2016). My contention is that whichever DA we choose, the result will be unacceptable.<sup>14</sup> Examples (9) illustrate the relevant impossibilities.

- (9) (a) Matter:           \*?*piton très rocheux*  
                              'very rocky peak'  
     (b) Location 1:       \*?*rivage très insulaire*  
                              'very insular seashore'  
     (c) Essive:           \*?*équipement très hôtelier*  
                              'very hotel facilities'  
     (d) Participant 1:   \*?*production très minière*  
                              'very mineral production'  
     (e) Participant 2:   \*?*coupe très budgétaire*  
                              'very budgetary cut'  
     (f) Cause 1:         \*?*infection complètement rubéoleuse*  
                              'totally rubella infection'  
     (g) Cause 2:         \*?*engin très incendiaire*  
                              'very incendiary device'

The last case to consider is the one where a semantic shift or, more appropriately, a dual interpretation (Roché 2005: 322) takes place. This concerns the Origin, and Participant 1 relations, where the base-noun and the head-noun are arguments of predicates in the original relation as shown in representation (3), for example, *visite ducale* and *voiture italienne*. This should prevent the DA from occurring in structure (6a), on a par with what we observe in (9). Nevertheless, the DAs expressing these relations may occur in this structure as illustrated in (10), which triggers a qualitative interpretation. This phenomenon has been noticed and discussed for a long time (see Gawelko 1975 and references therein, Bartning & Noailly 1993). The reasons allowing this new meaning to appear are those already operating in (7). The referent of the phrase without the degree word, for example, *voiture italienne*, is supposed to have typical properties identified by the community of speakers, and the noun phrases with degree (10) say that their referents present most of these properties, if not all (see also Warren 1988: 1545, Arsenijević *et al.* 2014). This interpretive scheme works all the more when the noun DA phrase subclassifies the kinds of entities denoted by the head-noun.

- (10) (a) *visite très ducale*  
          'very ducal visit'

- (b) *voiture très italienne*  
 ‘very Italian car’  
 (<http://archives.lesoir.be>)

#### 4.2. The predicativity criterion

If we now turn to the predicativity criterion (6b), we end up with only two groups. In the first, the DAs illustrating the relation pass test (6b), whereas in the second, either they fail or they are barely interpretable without the help of strong contextual information. The first group includes all the intrinsic relations (see (11)), which is expected since the structure in question makes explicit a characterization of the subject’s referent (descriptive use). However, the Matter relation should be deleted from this set because no crystal-clear example with this interpretation is attested. In (11c), for instance, rock and chalk are not the only material of the islands and cliffs respectively.

- (11) (a) Similitude: *le bec est dentelé*  
 ‘the beak is indented’  
*sa peau est laiteuse*  
 ‘her skin is milky’  
*le socle est triangulaire*  
 ‘the base is triangular’  
*cette histoire est dantesque*  
 ‘this story is Dantean’
- (b) Possession 1: *l’homme est barbu*  
 ‘the man is bearded’  
*la soupe est grumeleuse*  
 ‘the soup is lumpy’  
*elle était autoritaire*  
 ‘She was authoritarian’
- (c) Matter: *ces îlots sont rocheux*  
 ‘these islets are rocky’  
*les falaises sont crayeuses*  
 ‘the cliffs are chalky’.

In order to explain why extrinsic DAs get poor results when predicated, it is necessary to understand what makes predications (11) perfectly acceptable. The predicative construction in (11) has a descriptive (or characterizing) function: It ascribes the property denoted by the adjective to the subject NP’s referent. When we say *The bucket is full*, we say that the mapping of the bucket on the scale of FULLNESS corresponds to the maximal degree (Kennedy & McNally 2005, Kennedy 2007). When we say *Cette étoffe est soyeuse* ‘This fabric is silky’, we say that, for the dimension of Aspect, the

properties of the fabric are similar to those of silk<sup>15</sup>. The selection of the dimension Aspect is triggered by the fact that silk is identified as having a typical aspect, which can be used as an ideal of comparison (12b). In this approach, the moon would be specified as having a desolate aspect (12a), milk would be associated with a typical color (a variety of white), fork with a typical form, rubber with a typical consistency, and so on. Whenever the noun denoting these entities (objects or substances) is the base-noun of a DA, this DA becomes marked for this dimension as, for example, *sick* is for health. Hence (11c) states that the islets in question are ‘rock’ for the dimension of matter. If what has been said is true, it follows that the first condition that must be satisfied in order for the predication to succeed is the existence of a set of properties, coming from the base-noun’s referent, that could be predicated of the subject NP. A second condition is that this NP’s referent must have dimensions compatible with the properties in question; otherwise, the predication would be inappropriate and hence unacceptable.

- (12) (a)  $EQ(x,y, \text{ASPECT}) \wedge \text{moon}(x) \wedge \text{desolate}(y)$   
 (b)  $EQ(x,y, \text{ASPECT}) \wedge \text{silk}(x) \wedge \text{TYP-ASPECT-SILK}(y)$   
 (c)  $EQ(x,y, \text{COLOR}) \wedge \text{milk}(x) \wedge \text{VARIANT-OF}(z,y) \wedge \text{white}(z)$

Let’s see how these conditions operate with *lunaire* ‘lunar’. The set of properties  $P_1, P_2, \dots, P_n$  (supposed to be) typical of moon and available through the semantic representation associated with *lune* ‘moon’ would include: ‘Aspect: desolate, Form: round, Light: pale’, and a few others (see Pustejovsky 1993’s constituency quale). Predicating *lunaire* of an X amounts to ascribing one of these properties to X, provided its dimension constitutes ‘a domain of interpretation’ (Bartsch 1986: 294) for X. In the case of (13a), this latter condition is satisfied for each sentence.<sup>16</sup> In the case of (13b), however, the second condition is not met: The sentences are not straightforwardly interpretable and sound bizarre (out of the blue, it is difficult to understand what they refer to).

- (13) (a) *la lumière est lunaire* ‘the light is lunar’, *le paysage est lunaire* ‘the landscape is lunar’, *son visage est lunaire* ‘her face is lunar’  
 (b) *l’échantillon est lunaire* ‘the sample is lunar’, *ce caillou est lunaire* ‘this pebble is lunar’, *ce (scaphandre/véhicule) est lunaire* ‘this (spacesuit/rover) is lunar’, *le tremblement est lunaire* ‘the shaking is lunar’.

Their strangeness comes from the fact that none of the properties stereotypically associated with the moon can be conceived of as a possible value of an inherent dimension of this referent. Actually, some of these referents have no such dimensions (pebble, spacesuit) and other have no spatial dimension (shaking). To interpret these sentences, we have to call upon extrinsic relations and imagine a scenario in which the base-noun’s referent could be a participant. In addition, we have to understand why the act of predication has been made in the first place, what motivates ascribing a



property to the subject NP referent. In general, the motivation has to do with a contrast that has been elaborated in discourse. The speaker wants to characterize an entity contrasting its properties with those of similar, yet distinct ones (Bartning 1980: 44–5). For instance, in (13b) the pebble could be contrasted with another one coming from, for example, the Churyumov–Gerasimenko comet. This discourse-based contrast is what makes examples (5) (for example, *La famille [...] est ducale*) sound perfectly acceptable, provided that the nobiliary status is a potentially relevant dimension of families. On the other hand, none of the predications in (4) (for example, \**Ce chirurgien est thoracique*) is possible, because the thorax is not associated with any specific property in the French language: Not even the first condition is fulfilled.<sup>17</sup>

If we compare the attributive construction of DA *lunaire* in (14) with the predicative one in (13), we see that all examples in the former can be interpreted without any problem. This is expected of (14a), insofar as the relation between the base-noun and the head-noun obtains by the same mechanism and information as in (13a). The sharp contrast of acceptability between (13b) and (14b) follows from the fact that the latter can straightforwardly be interpreted using extrinsic relations, whereas this possibility is barred for the former by the very function of the characterizing predicative construction.

- (14) (a) *lumière lunaire* ‘lunar light’, *paysage lunaire* ‘lunar landscape’, *visage lunaire* ‘lunar face’  
 (b) (*échantillon/caillou*) *lunaire* ‘lunar (sample/pebble)’, (*scaphandre/véhicule*) *lunaire* ‘lunar (spacesuit/rover)’, *tremblement lunaire* ‘lunar shaking’

In (14b), the more natural interpretation of (*échantillon/caillou*) *lunaire* is the Origin relation. For *tremblement lunaire*, it is the Participant relation, whereas for the others the locative relation is inescapable.

The DAs in (14a) are modifiers in the same way as ordinary adjectives are: they have an intersective interpretation (see (15a)). As is well-known, the DAs in (14b) are not modifiers but classifiers. The N + DA phrase they occur in functions as a denomination, the interpretation of which is not built from inside but from outside, that is, on the base of the series this denomination belongs to and in function of the other expressions it competes with: the more socially entrenched and conventionalized the series is, the tighter the links between the noun and the DA. For example, *roman policier* ‘detective novel’ belongs to a quite large lexical series: *roman d’aventure* ‘adventure novel’, *roman historique* ‘historical novel’, *roman d’espionnage* ‘spy novel’, *roman noir* ‘crime novel’, etc. The function of the DA is simply to provide information allowing adequate identification of the NP’s referent within a series of similar entities in a given domain (Gunkel & Zifonun 2009). The same is true of *élection présidentielle* ‘presidential election’, consider *élection (régionale/sénatoriale/municipale)*, etc. The problem with the expressions in (14b) is that none of them belongs to any institutionalized series. To that extent, they have a poor classifying capacity. Hence the difficulty in interpreting them adequately.

The behavior of DAs such as *lunaire* in their descriptive modifying use (14a) is modeled on the semantics of plain intersective adjectives (see (2)). The way the intrinsic relation combines with the whole representation is given in (15c).

- (15) (a)  $[[\textit{paysage lunaire}]] = \lambda_{x_k}.\textit{landscape}(x_k) \wedge \textit{lunar}(x_k)$   
 (b)  $\textit{lunar} \equiv \lambda_{x_k}.\exists y_k[\textit{EQ}(x_k, y_k, \textit{ASPECT}) \wedge \textit{desolate}(y_k)]$   
 (c)  $[[\textit{paysage lunaire}]] = \lambda_{x_k}.\textit{landscape}(x_k) \wedge \exists y_k[\textit{EQ}(x_k, y_k, \textit{ASPECT}) \wedge \textit{desolate}(y_k)]$   
 (d)  $[[\textit{Num}[\textit{paysage lunaire}]]] = \lambda_{z_o}.\exists x_k[\textit{landscape}(x_k) \wedge \exists y_k[\textit{EQ}(x_k, y_k, \textit{ASPECT}) \wedge \textit{desolate}(y_k)] \wedge \textit{R}(z_o, x_k)]$

We are now in a position to come back to the second group of DAs, which involves extrinsic relations. Two cases are unproblematic: Origin and Cause 1, maybe because these relations are so important for both people and diseases (for example, *ulcère variqueux* ‘ulcer causing varices’). With the Locative and Essive relations, the predicative construction is frequent enough, especially in a contrastive context (the proposed examples are attested on the Web). As for the remaining ones, Participant and Cause 2, they are more rarely attested if at all (no attestation through Google search) and their acceptability is low, which corresponds to the picture we had in (13b), and for the same reasons.

- (16) (a) Origin: *Le chanteur est cubain*  
 ‘the singer is Cuban’  
*ce tapis est persan*  
 ‘this carpet is Persian’  
 (b) Location 1: *L’ancienne chaudière était murale*  
 ‘the old boiler was on the wall’  
*que cette terre fût insulaire ou non*  
 ‘be this land on an island or not’  
 (c) Location 2: *Ces villes sont pavillonnaires*  
 ‘These towns are residential’  
*Les parois sont aptheuses*  
 ‘the mouth walls are apthous’  
 (d) Essive: *depuis que la pêche est industrielle*  
 ‘since fishing is industrial’  
*les enjeux sont aussi pétroliers*  
 ‘gas is also at stake’  
 (e) Participant 1: *??ces projections sont gazeuses*  
 ‘these projections are gaseous’  
 (f) Participant 2: *??ces coupes sont budgétaires*  
 ‘these cuts are budgetary’<sup>18</sup>

Table 8. Matching between semantic relations and class criteria.

Relation	Predicativity	DEG	Degree
(a) Intrinsic	+	+	quantitative/qualitative
(b) Matter	+	–	quantitative
(c) Origin	+	–	qualitative
(d) Location 1	–	–	*
(e) Location 2	+	+	quantitative
(f) Essive	+	–	qualitative
(g) Participant 1	–	–	*
(h) Participant 2	–	–	*
(i) Cause 1	+	–	*
(j) Cause 2	–	–	*

(g) Cause 1: *cette maladie est héréditaire*

‘this disease is hereditary’

(h) Cause 2: *??l’engin était incendiaire*

‘the device was incendiary’.

The conclusion we can draw is that degree words and predication do not provide us with fast and ready criteria to discriminate the so-called relational adjectives from qualifying adjectives. Table 8 sums up the results of the discussion and what we observe is a cline rather than a clear-cut distinction. ‘Intrinsic’ subsumes all intrinsic relations and the nature of the degree meaning is given in the rightmost column. This meaning is an extension whenever a minus (–) sign appears in the preceding column. Lines with only minuses indicate that typical relational adjectives instantiate these cases.

Nevertheless, plain qualifying adjectives may occur in these constructions and behave like relational adjectives, as illustrated in (17b) (Fradin 2007).

(17) (a) Color:

*ciel vineux*

‘vinous sky’

*ciel très vineux*

‘very vinous sky’

*le ciel est vineux*

‘the sky is vinous’

(b) Participant 1:

*fermentation vineuse*

‘wine fermentation’

*\*fermentation très vineuse*

‘very vinous fermentation’

*\*la fermentation est vineuse*

‘the fermentation is vinous’

Anyone claiming that *vineux* is lexically a qualifying adjective must admit that it shifted its class in (17b). This class-shift, although far less known than the inverse one (relational adjective becoming qualifying adjective, see (10)), indicates the same: the behavior and interpretation of a DA depends on the construction it occurs in and on the noun it combines with, which implies that there is little interest in trying to define

the relational adjective and qualifying adjective classes. It is more fruitful to shed light on the factors allowing us to predict the range of interpretations a given type of DA may have in function of the construction it enters into.

## 5. Sketch of a treatment

Three factors play a crucial role in determining the interpretation of noun + DA phrases: the semantic content of the base-noun, that of the head-noun and the encyclopedic/pragmatic information that is associated with the referents of these nouns or is inferable from them. Part of this information corresponds to Pustejovsky's *qualia* (Pustejovsky 1995). It should be kept in mind that, in a dynamic approach to meaning, the speaker and the addressee, and more widely the participants in the linguistic exchange, constantly adjust what they say according to what they understand of their interlocutors' intentions. This holds true also for the selection of the appropriate meaning relation in noun + DA phrases. For this reason, what will be said below should be taken only as pieces of information that serve as points of orientation for interlocutors. It remains true, however, that many of the meaning relations in question can be fixed exclusively using lexical information, as shown in (17).

The role of the first factor is very important inasmuch as it fixes the range of the semantic relations available. The semantic content of the head-noun has a complementary role, since it allows for the selection of the most likely interpretation. Some reliable tendencies can be observed for the base-noun: When it primarily denotes natural kinds with a spatiotemporal extension (concrete object, substance) for example, *wool*, *crystal*, *beard*, the Similitude, the 'fitted-with', the Makeup or the Matter interpretation are available. The Similitude interpretation is favored in case a typical dimension is specified in the semantic representation of the base-noun, as shown in (15). When the base-noun denotes a non-extensive entity (for example, *authority*, *courage*) the 'with' interpretation is the more likely. In contrast, whenever the base-noun denotes an event (for example, *visit*), a domain (for example, *industry*), or a (potential) actor in a scenario (for example, *duke*, *president*, *diving suit*), the interpretation involves the participant or the causal relationship. When the base-noun is a locative proper name (for example, *Canada*) the Origin relation is available and is often mandatory.

For Locative and Essive interpretations, the triggering information is less easy to grasp. Very often, the locative relation crops up as a default relation, in function of the capacity of the base and head noun's referent to be conceived of as a Figure *vs.* Ground, for each with respect to the other (compare the role of the parameter Size). The Essive relation is likely to occur when both the base-noun and the head-noun denote entities that are somehow similar: Two domains of activity or knowledge (for example, *industry/agriculture*), two entities belonging to the same category (for example, *port/town*, *revolution/uprising*), etc. Notice that the likelihood of the relationship depends on the possibility of the identificatory predication: *ville portuaire* 'portuary town' is fine because '(this) town is a port' or its French equivalent are significant and well attested, whereas *port urbain* is not attested with the

Essive but with the Locative 1 meaning as in *création d'un port urbain à Carrières-sous-Poissy* 'creation of an urban port at [. . .]', probably because 'this port is a town' is more unlikely and far less attested.<sup>19</sup> The information triggering a causal interpretation depends much on the encyclopedic knowledge associated with the referents of both nouns. Since it is not the place to propose an account of the semantics of DAs, I will not pursue the discussion here. How is the information associated with both the base-noun and the head-noun used in order to select the rules appropriately modeling the interpretation in the various existing cases? That is the question I address now. I only discuss two cases to give a glimpse of what a more accomplished treatment could be like.

The first case deals with fra *véhicule lunaire*, where we have the Location 1 interpretation. The noun *véhicule* 'vehicle' denotes a functional artifact, that is, an object whose purpose is to be used in a range of specific scenarios (consider Pustejovsky's telic quale). Its specificity is (partially) captured by (18a): 'a vehicle is a device that transports things (on land)'. Unlike the head-noun, the base-noun *lune* is associated with several properties reflected in the semantic representations of *lunaire*. Some are (stereotypical) properties attached to the moon *qua* familiar celestial object and concern the Aspect and Form dimensions (see (12a)). When the moon is conceived of as a mere object, the neutral representation (18b) is the rule. But very often the moon is categorized as a place (14,400,000 hits of *sur la lune* 'on the moon' on Google, 09.2015): (18c) encapsulates in a modifier the fact that the moon may be a place where an event can take place (SUPERSSive = 'on', Mns = 'means'). Since no intrinsic property is attached to vehicles, only an extrinsic relation is possible. The interpretation of *véhicule lunaire* could be given using either the rule proposed for relational adjectives in (3) *viz.* by applying (18a) to (18b), or the spatial version of the DA *viz.* by applying (18a) to (18c). The results are (18d) and (18e) respectively.

- (18) (a)  $[[\textit{véhicule}]] \equiv \lambda x_k \lambda e_k. \exists y_k [\text{transport}(e_k) \wedge \text{Mns}(e_k, x_k) \wedge \text{Pat}(e_k, y_k)]$   
 (b)  $[[\textit{lunaire}]] \equiv \lambda P_k \lambda w. P_k(w_k) \wedge R(w_k, \text{moon})$   
 (c)  $[[\textit{lunaire}]] \equiv \lambda Q_k \lambda x_k \lambda e_k. \exists w [\text{LOC}(e_k, \text{SUPERSS}(w)) \wedge Q_k(e_k)(x_k) \wedge \text{moon}(w)]$   
 (d)  $[[\textit{véhicule lunaire}]] = \lambda w_k \lambda e_k. \exists y_k [\text{transport}(e_k) \wedge \text{Mns}(e_k, w_k) \wedge \text{Pat}(e_k, y_k)] \wedge R(w_k, \text{moon})$   
 (e)  $[[\textit{véhicule lunaire}]] = \lambda x_k \lambda e_k. \exists w [\text{LOC}(e_k, \text{SUPERSS}(w)) \wedge \exists y_k [\text{transport}(e_k) \wedge \text{Mns}(e_k, x_k) \wedge \text{Pat}(e_k, y_k)] \wedge \text{moon}(w)]$   
 (f)  $[[\textit{Num}[\textit{véhicule lunaire}]]] = \lambda z_o. \exists x_k \exists e_k \exists w [\text{LOC}(e_k, \text{SUPERSS}(w)) \wedge \exists y_k [\text{transport}(e_k) \wedge \text{Mns}(e_k, x_k) \wedge \text{Pat}(e_k, y_k)] \wedge \text{moon}(w) \wedge R(z_o, x_k)]$

Representation (18d) is less informative than (18e) (= 'set of x having the property of transporting entity y, such that the transportation takes place on the moon') since the link between the referents of the base and head noun is left pending. To that extent it should be dispreferred.

The second case is about *ville portuaire*, where the Essive interpretation is the natural one. Both the base-noun and the head-noun denote a kind of place characterized by its

use and the type of events that take place within it ('large place where people live', 'place where ships load and unload people or goods'). To that extent, their semantic category is quite similar: CATS(base-noun) = CATS(head-noun) = place (dedicated to some activity) and this makes the Essive relationship readily available. This equivalence is strong enough to prevent the Locative relation from arising (no attestation on the Web, 09.2015), unlike what expectedly happens with, for example, *ville côtière* 'coastal town'. Obviously, no intrinsic natural relation is accessible since towns and ports are artifactual entities. I tentatively propose that the ascriptive predication, which is the interpretation of N + DA when the Essive relation is triggered, be given by rule (19), where P, Q correspond to the parts of meaning relevant to this interpretation for the head-noun and base-noun respectively.

$$(19) \text{[[N DA]]} = \lambda P_k, \lambda Q_k, \lambda x_k. [\text{isa}(x_k, y_k) \wedge P(x_k) \wedge Q(y_k)]$$

$$(20) (a) \text{[[ville]]} \equiv \lambda x_k. [\text{ville}(x_k)]$$

$$(b) \text{[[port]]} \equiv \lambda y_k. [\text{port}(y_k)]$$

$$(c) \text{[[ville portuaire]]} = \lambda x_k. [\text{isa}(x_k, y_k) \wedge \text{ville}(x_k) \wedge \text{port}(y_k)]$$

$$(d) \text{[[}_{Num}\text{ville portuaire}]] = \lambda y_o, \exists x_k, \exists y_k. [\text{isa}(x_k, y_k) \wedge \text{ville}(x_k) \wedge \text{port}(y_k) \wedge R(y_o, x_k)]$$

## 6. Conclusion

Denominal adjectives present a wide range of meanings, which reflect the variety of relations linking the base-noun and the modified head noun. The meaning of these nouns offers partial but reliable cues about the potential interpretation of the phrase where the DA occurs. If we leave aside frequency adjectives, all DAs can be semantically accounted for intersectively, although their semantic function differs. Constructions involving an intrinsic relationship have a descriptive function, Essive constructions have an identificational function and remaining DAs with an extrinsic relationship have a classifying function.

In the account sketched here, meaning is not associated with the lexical entry of suffixes, first because suffixes have no lexical entry: They are introduced through the patterns used to build DAs, that is, to correlate the latter with their base-noun; and second because one and the same meaning can be shared by several exponents. These patterns exist so long as series of lexemes that exemplify them exist in discourse. These series may exhibit slight variations of form or interpretation that can be repeated and become entrenched in the language, giving rise to new meanings and hence new lexeme-formation patterns. On this view, new meanings originate in discourse as the result of interaction between conversational agents. This is an additional reason for refraining from systematically allotting meaning to suffixes.

## Notes

1. Languages are abbreviated according to the norm ISO 639–3; cf. [www.ethnologue.com](http://www.ethnologue.com) or [www.glottolog.org](http://www.glottolog.org). The Leipzig glossing rules are used throughout.

2. In keeping with the conventions adopted in recent works on word-formation (Grossmann and Rainer 2004, Müller *et al.* 2015), the arrows note a morphological relation whereas the angle brackets note an etymological one. I would like to thank A. Fábregas, R. Marín, F. Rainer and two anonymous reviewers for their constructive comments and suggestions.
3. This happens more often with derived nouns. For instance, no nominalization can normally be correlated with a stative spatial verb whose subject NP denotes the Ground such as *inclure* 'include'. However, *inclusion* 'inclusion' does exist with a stative meaning because it is a borrowing from Latin *inclusio* 'confinement'.
4. I refer to Matushansky (2005) for a review of the literature on the category Adjective.
5. The same is true of DAs ending in *-aire*, *-al*, *-ique*, *-ain*, *-u*, among others. This similarity is expected to the extent that the DA derivational patterns have been modeled on the base of adjectival forms existing in Latin.
6. As a reviewer noted, *broussailleux* more frequently appears after a noun (4910 hits of *des sourcils broussailleux* in Google, accessed 12.2016) than before (102 hits of *de broussailleux sourcils*). However, what imports for us is that the possibility of denominal adjectives in prenominal position exists and it does (consider also *sous l'ombrageux regard des Lozériens* 'under the touchy look of Lozere's inhabitants', [paysgabale.blogspot.com/2016/07/les-saigneurs-des-anes-hauts.html](http://paysgabale.blogspot.com/2016/07/les-saigneurs-des-anes-hauts.html), 10.2016).
7. In A + N, the adjective is subjective if the phrase denotes an X who is A as a N, and not in general, for example, *skillful surgeon*. The denotation of the phrase is a subset of the denotation of the noun.
8. I sum up the insights of the just mentioned works. The representations in (2) and (3) mainly follow Gehrke and McNally (2015).
9. This problem cannot be regarded as a type problem though (McNally and Boleda 2004: 191).
10. A reviewer suggests that a Constituency meaning crops up in *exigence réglementaire* 'demand required by rule'. However, this interpretation can be recast as a Cause 1 reading 'requirement caused by the rule' and all the more so that *require* is defined as 'cause to be necessary' according to the online version of the *New Oxford American Dictionary*. This type of reading is tied to the semantics of the head-noun *règlement*, because it does not occur with nouns the meaning of which is not correlated with the notion of law, rule, etc. In other words, this meaning seems to be a property of the phrase in question rather than of the *-aire* suffix itself.
11. Russian *отчово pal'to* has been added because possessive adjectives do not exist in the other languages mentioned. These are quite distinct from denominal adjectives such as French *parental* (distinct declension, restricted set of bases, specific meaning), which are plain denominal adjectives. Reasons of space preclude me from speaking of Hungarian denominal adjectives in *-i*, which do not strictly belong to lexeme-building morphology (Kenesei 2014).
12. A reviewer finds that the label 'with' is not satisfactory and I agree. He or she proposes to use Comitative, Sociative or Accompaniment instead.
13. For instance, with the Matter reading, the relationship between the base-noun and the head-noun must be natural, for example, *rhinocéros laineux* 'wooly rhinoceros' *vs.* *\*manteau laineux* 'wooly overcoat' (Fradin 2007). In the present case this does not imply that the rhinoceros is made of wool, since no living being made of wool can exist. *Laineux* has a classifying function here. Whether *biface rocheux* 'stone biface' would be possible, as



- hypothesized by a reviewer, is unclear: it is not attested, in the singular or the plural, online or in the *FrWaC* (*French Web as Corpus*). In the latter, BIFACE is attested 357 times.
14. This is probably slightly overstated because, compared to (9f), example (a) *La maladie naviculaire n'est pas une maladie complètement héréditaire* 'navicular disease is not a totally hereditary disease' is attested on the Web and indeed seems perfect. Nevertheless, except for this case, a search with Google (09.2015) on the one hand and in *FrWaC* on the other gave no attestation for examples (9).
  15. Actually, Aspect could be a mere shorthand for more fine-grained dimensional distinctions such as visual aspect, touch, warmth, etc. I leave this issue pending.
  16. I leave aside here the inferential mechanism, based on pragmatic and encyclopedic knowledge, which yields the appropriate range of interpretations for each NP and forbids, for instance, that *le paysage est lunaire* be interpreted as 'the landscape is round', contrary to *son visage est lunaire*. Some hints are to be found in Warren (1988: 127–8).
  17. Moreover, *chirurgien* 'surgeon' primarily denotes a type of agent, not a concrete entity. Warren (1988: 136) writes that 'the resemblance relation [...] is common only with concrete nominal stems' is an observation that should be attributed to Ljung (1970).
  18. I agree with one of the reviewers that *Les effets de cette mesure seront budgétaires et administratifs* 'The effects of this measure will be budgetary and administrative' is fine. The weight of the phrase that adjectives occur in is a factor playing a role in the acceptability judgements. This has been demonstrated by Abeillé & Godard (2004a, 2004b). In the present case, the coordination improves the interpretation. Unfortunately, I could not address this topic in the paper.
  19. A Google search (09.2015) gave 212,000 hits for 'town is a port' cumulating singular and plural, and 114,000 hits for the French equivalents; for English 'port is a town' / French 'port est une ville' (singular and plural) the results are skewed by the fact that a lot of towns include *port* in their names. Although the latter sequences are attested, they are far less numerous than the former ones, for example, 5 attestations only of French *les* [adjective] *ports sont des villes* [adjective].

## References

- Abeillé, Anne & Danièle Godard 2004a. De la légèreté en syntaxe. *Bulletin de la Société de Linguistique de Paris* XCIX(1): 69–106.
- Abeillé, Anne & Danièle Godard 2004b. Les adjectifs invariables comme compléments légers en français. In Jacques François (ed.), *L'Adjectif en français et à travers les langues*. Caen: Presses de l'Université de Caen. 209–224.
- Alexiadou, Artemis & Melita Stavrou 2011. Ethnic adjectives as pseudo-adjectives: A case study on syntax-morphology interaction and the structure of DP. *Studia Linguistica* 65(2): 117–146.
- Arsenijević, Boban, Gemma Boleda, Berit Gehrke & Louise McNally 2014. Ethnic adjectives are proper adjectives. In Rebekah Baglioni, Timothy Grinsell, Jonathan Keane, Adam Roth Singerman & Julia Thomas (eds.), *Chicago Linguistic Society 46*. Chicago IL: Chicago Linguistic Society. 17–30.
- Bally, Charles 1965. *Linguistique générale et linguistique française*. Berne: Francke.
- Bartning, Inge 1980. Remarques sur la syntaxe et la sémantique des pseudo-adjectifs dénominaux en français. (= *Romanica Stockholmiensia* 10). Stockholm: Almqvist & Wiksell.
- Bartning, Inge & Michèle Noailly 1993. Du relationnel au qualitatif: flux et reflux. *L'Information grammaticale* 58(1): 27–32.



- Bartsch, Renate 1986. The construction of properties under perspectives. *Journal of Semantics* 5(4): 293–320.
- Bochner, Harry 1993. *Simplicity in generative morphology*. Berlin and New York: Mouton de Gruyter.
- Cadiot, Pierre & François Nemo 1997. Propriétés extrinsèques en sémantique lexicale. *French Language Studies* 7: 127–146.
- Carlson, Greg N. 1977. A unified analysis of the English bare plural. *Linguistics and Philosophy* 1(3): 413–456.
- Creissels, Denis 2006. *Syntaxe générale. Une introduction typologique 1. Catégories et constructions*. Paris: Hermès/Lavoisier.
- Downing, Pamela 1977. On the creation and use of English compound nouns. *Language* 53: 810–842.
- Eggert, Elmar 2005. *Bisontins ou Besançonais? A la recherche de règles pour la formation des gentilés pour une application au traitement automatique*. Tübingen: Narr.
- Fábregas, Antonio 2007. The internal structure of relational adjectives. *Probus* 19: 1–36.
- Fradin, Bernard 2007. Three puzzles about denominal adjectives in *-eux*. *Acta Linguistica Hungarica* 54(1): 3–32.
- Fradin, Bernard 2008. Les adjectifs relationnels et la morphologie. In Bernard Fradin (ed.), *La raison morphologique. Hommage à la mémoire de Danielle Corbin*. Amsterdam and Philadelphia: Benjamins. 69–91.
- Fradin, Bernard 2016. Denominal adjectives with an essive interpretation. Poster presented at the 49<sup>th</sup> Annual Conference of the Societas Linguistica Europaea 49, Naples.
- Gagné, Christina L. 2002. Lexical and relational influences on the processing of novel compounds. *Brain and Language* 81(1–3): 723–735.
- Gawelko, Marek 1975. Sur la classification sémantique des adjectifs suffixés. *Lingua* 36: 307–324.
- Gehrke, Berit & Louise McNally 2015. Distributional modification: The case of frequency adjectives. *Language* 91(4): 837–870.
- Grossmann, Maria & Franz Rainer (eds.) 2004. *La formazione delle parole in italiano*. Tübingen: Niemeyer.
- Gunkel, Lutz & Gisela Zifonun 2009. Classifying modifier in common names. *Word Structure* 2(2): 205–218.
- Hathout, Nabil 2011. Une approche topologique de la construction des mots: propositions théoriques et application à la préfixation en *anti-*. In Michel Roché, Gilles Boyé, Nabil Hathout, Stéphanie Lignon & Marc Plénat (eds.), *Des unités morphologiques au lexique*. Paris: Hermès/Lavoisier. 251–318.
- Huddleston, Rodney & Geoffrey K. Pullum (eds.) 2002. *The grammar of the English language*. Cambridge: Cambridge University Press.
- Kenesei, István 2014. On a multifunctional derivational affix. Its use in relational adjectives or nominal modification and phrasal affixation in Hungarian. *Word Structure* 7(2): 214–239.
- Kennedy, Christopher 1999. *Projecting the adjective. The syntax and semantics of gradability and comparison*. New York and London: Garland.
- Kennedy, Christopher 2007. Vagueness and grammar: The semantics of relative and absolute gradable adjectives. *Linguistics and Philosophy* 30(1): 1–45.
- Kennedy, Christopher & Louise McNally 2005. Scale structure, degree modification, and the semantics of gradable predicates. *Language* 81(2): 345–381.

- Levi, Judith N. 1978. *The syntax and semantics of complex nominals*. New York NY: Academic Press.
- Libben, Gary 2006. Why study compound processing? An overview of the issues. In Gary Libben & Gonja Jarema (eds.), *The representation and processing of compound words*. Oxford: Oxford University Press. 1–22.
- Ljung, Magnus 1970. *English denominal adjectives*. (= Gothenburg Studies in English 21). Lund: Studentlitteratur.
- Matushansky, Ora 2005. Les adjectifs – une introduction. *Recherches Linguistiques de Vincennes* 34: 9–54.
- McNally, Louise & Gemma Boleda 2004. Relational adjectives as properties of kinds. In Olivier Bonami & Patricia Cabredo-Hofherr (eds.), *Empirical issues in formal syntax and semantics, vol. 5*. Paris: CNRS and Université de Paris 7. 179–196.
- Müller, Peter O., Susan Olsen, Ingeborg Ohnheiser & Franz Rainer (eds.) 2015. *Word-formation. An international handbook to linguistic morphology*. (= Handbücher zur Sprach- und Kommunikationswissenschaft, 40). Berlin and New York: De Gruyter.
- Partee, Barbara H. 2003. Are there privative adjectives? In *Conference on the Philosophy of Terry Parsons*. Amherst MA: University of Massachusetts.
- Plénat, Marc 2008. Quelques considérations sur la formation des gentilés. In Bernard Fradin (ed.), *La raison morphologique. Hommage à la mémoire de Danielle Corbin*. Amsterdam and Philadelphia: Benjamins. 155–174.
- Pustejovsky, James (ed.) 1993. *Semantics and the lexicon*. Dordrecht: Kluwer.
- Pustejovsky, James 1995. *The generative lexicon*. Cambridge MA: MIT Press.
- Rainer, Franz 2013. Can relational adjectives really express any relation? An onomasiological perspective. *SKASE Journal of Theoretical Linguistics* 10(1): 12–40.
- Roché, Michel 2005. Sur une classe d'adjectifs par conversion. In Injoo ChoiJonin, Myriam Bras, Anne Dagnac & Magali Rouquier (eds.), *Questions de classification en linguistique: méthodes et descriptions. Mélanges offerts au Professeur Christian Molinier*. Bern: Lang. 319–343.
- Roché, Michel 2008. Structuration du lexique et principe d'économie: le cas des ethniques. In Jacques Durand, Benoît Habert & Bernard Laks (eds.), *Congrès Mondial de Linguistique Française – CMLF'08*. Paris: Institut de Linguistique Française – EDP Sciences. 1571–1585.
- Roy, Isabelle 2010. Deadjectival nominalizations and the structure of the adjective. Artemis Alexiadou & Monika Rathert (eds.), *The syntax of nominalizations across languages and frameworks*. Berlin and New York: Mouton de Gruyter. 129–158.
- Stolz Thomas, Cornelia Stroh & Aina Urdze 2005. Comitatives and instrumentals. In Martin Haspelmath, Gil Dryer Dryer & Bernard Comrie (eds.), *The world atlas of language structures*. Oxford: Oxford University Press. [<http://wals.info/chapter/52>]
- Strnadová, Jana 2014. *Les réseaux adjectivaux. Sur la grammaire des adjectifs dénominaux en français*. PhD dissertation, Univerzita Karlova v Praze and Université Paris Diderot-Paris 7.
- Talmy, Leonard 2000. *Toward a cognitive semantics, vol. 1. Concept structuring systems*. Cambridge MA: MIT Press.
- Velde, Danièle Van de 1995. *Le spectre nominal*. Louvain / Paris: Editions Peeters.
- Velde, Danièle Van de 2006. *Grammaire des événements*. Lille: Presses Universitaires du Septentrion.
- Warren, Beatrice 1984. *Classifying adjectives*. (= Gothenburg Studies in English 56). Göteborg: Acta Universitatis Gothoburgensis.

- Warren, Beatrice 1988. Ambiguity and vagueness in adjectives. *Studia linguistica* 42(2): 122–172.
- Winter, Yoad & Joost Zwarts 2012. On the event semantics of nominals – the one argument hypothesis. In Ana Aguilar Guevara, Anna Chernilovskaya & Rick Nouwen (eds.), *Proceedings of Sinn und Bedeutung 16, vol. 2*. Cambridge MA: MIT Working Papers in Linguistics: 639–646.

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