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# Genitives of Substance and Locative Verbs in French

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## 1. Introduction

This paper is devoted to the study of one particular kind of *de*-NPs (the counterparts of *of*-NPs) in French, namely the *de*-NPs complements of locative verbs as *remplir* ('to fill'), *parsemer* ('to sprinkle') or *baigner* ('to bathe'). Sentence (1) contains one typical example of the *de*-NPs that will be dealt with:

- (1) La pièce est inondée de papillons.  
The room is flooded of butterflies.  
'The room is flooded with butterflies.'
- (2) La pièce est inondée par des papillons.  
The room is flooded by of-the butterflies.  
'The room is flooded by butterflies.'

Generally, French grammars study *de*-NPs in such contexts through a comparison with *par*-NPs (the analogues of *by*-NPs), with whom *de*-NPs alternate, as shown in (2) (Spang-Hanssen 1963, Togeby 1983, Gaatone 1998).<sup>1</sup> To my knowledge, no systematic typology of clausal *de*-NPs has been put forward, so that all kinds of clausal *de*-NPs are more or less treated on a par.<sup>2</sup> In general terms, French grammars provide two different analyses of the *de*-NPs that occur in constructions like (1).

The standard view is that *de*-NPs are external arguments (*compléments d'agent*) as are the *par*-NPs with which they alternate. The preposition *de* is assumed to be preferred to the preposition *par* when the sentence is stative, or

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<sup>1</sup> This is also true for *di*-NPs in Italian, generally studied through the comparison with *da*-NPs.

<sup>2</sup> *de*-NPs complements of verbs will be called *clausal de*-NPs, whereas *de*-NPs complements of nouns will be called *adnominal de*-NPs (the latter will be dealt with only indirectly in this paper). Apart from the clausal *de*-NPs expressing a relation between a Container and a Substance, studied here, the evidence available suggests that we must distinguish between: (i) *de*-NPs expressing a Whole/Part relation between the Subject and the *de*-NP (ii) Abstrumetal *de*-NPs and (iii) *de*-NPs of Origin. These various kinds of clausal *de*-NPs differ from each other in their semantic and syntactic properties. A same verb may take different kinds of *de*-NPs.

when the passive is adjectival.<sup>3</sup> It is also assumed that only *de*-NPs are compatible with attributive past participles (cf. Gaatone 1998 among others).

Applied to the kind of *de*-NPs we have in (1), this theory faces several difficulties. The first one is that it is possible to combine the *de*-NP at hand with a *par*-NP. If the *de*-NP is an external argument, we are led to the undesirable conclusion that we have two external arguments:<sup>4</sup>

- (3) La pièce est baignée d'ombres par les arbres.  
 The room is bathed of shadows by the trees.  
 'The room is bathed with shadows by the trees.'

The second problem is that it cannot account for non-aspectual semantic differences between (1) and (2), nor explain why a *de*-NP cannot always substitute for a *par*-NP, even in stative sentences. The third problem of this proposal is that the *de*-NP can be bare (cf. (1)), whereas the external argument introduced by *par* cannot. In order to ensure the link between a passive sentence with a bare *de*-NP as an external argument and its active counterpart, the supporters of this theory rely on a rule, first formulated in the *Port-Royal* grammar, by virtue of which the string [*de*<sub>prep</sub> + *du/de la/des*<sub>determ</sub>] reduces to [*de*<sub>prep</sub>] for phonetic reasons. This rule has been called *la règle de cacophonie* ("the rule of cacophony") (cf. Gross 1967). Assuming a phonetically null determiner allows to recover the link between the *de*-NP of a passive sentence and the subject of an active sentence, which cannot be bare in French:

- (4) inondé de papillons = \* inondé de  
 des  
 flooded of butterflies = flooded of  
 of-the papillons  
 butterflies

The second view on the *de*-NPs at hand is much less widespread. To my knowledge, it has only been advocated by Frei 1929 and Spang-Hanssen 1963. Spang-Hanssen suggests that some *de*-NPs — which are the kind of *de*-NPs we are concerned with here — "verge on a complement of stuff". Frei makes the following comparison with German:

- (5) couvertpar de la neige<sup>5</sup> = Vom Schnee bedeckt

<sup>3</sup> French grammarians agree that the past participle in passive constructions can be either verbal or adjectival. The adjectival passive in French is roughly similar to the *Zustandspassiv* in German.

<sup>4</sup> It is worth noting that the possibility to have simultaneously a *de*-object and a *par*-object (as in (3)) challenges the traditional view that the passive is verbal when the verb has a *par*-object, and adjectival when the verb has a *de*-object (if one does not want to conclude that the passive is verbal and adjectival at the same time).

<sup>5</sup> *De la* is the feminine of the indefinite article *du*, the contracted form of *de+le*. *Du/de la* are used with mass nouns to denote an indeterminate quantity

	covered by	of-the snow	=	by-the snow	covered
(6)	couvert	de neige	=	Schneebedeckt	
	covered	of snow	=	Snow-covered	

The purpose of this paper is twofold. First, I argue that such (indefinite or definite) *de*-NPs can fruitfully be analyzed as *genitive arguments* of the verbal head. Second, I provide some arguments in favour of the idea that the bare NP we have in (1) is a predicative indefinite as defined by van Geenhoven 1998, and that the *de*-NP is semantically incorporated by the verb like other predicative indefinites. This comparison does justice to Frei's intuition. The following section is devoted to the first claim.

## 2. Adnominal and Clausal Genitives of Substance

At first sight, the idea that some Romance language(s) might have a genitive in the verbal domain sounds odd, because genitive is seen "as the nominal case *par excellence*" (Anderson 1971: 5). Symptomatically enough, several grammarians have tried to derive the Latin verbal genitive from nominal genitives (see. e.g. Calboli 1972). In the same way, Benveniste 1966 defines the function of the genitive as the transposition in the nominal domain of subject-object relations holding at the sentence level. This idea may have contributed to make linguists blind to the existence of a clausal (verbal) genitive in Romance languages.

However, as it will be shown, there are striking semantic and syntactic similarities between the *de*-NP serving as an argument of the verbal head in (1) and a specific kind of adnominal genitive *de*-NPs. The relevant kind is the *genitive of Substance* we have in *un verre de vin*, ('a glass of wine'), *un essaim d'abeilles* ('a swarm of bees') or *une pleine pièce de papillons* (lit. 'a full room of papillons').<sup>6</sup> Firstly, the semantic relation that holds between the first and the second noun in an adnominal genitive of Substance is also instantiated between the Subject and the clausal *de*-NP under study here. This is shown in the next section. Secondly, the clausal *de*-NP can be property-

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(*boire de la bière*, 'to drink beer'). *Du/de la*-NPs are not partitive (at least not in a transparent way) when the definite article *le/la* has a non-anaphorical reading (*boire de la bière blanche* 'to drink white beer'). According to Kupferman 1994, in this case, *de* is not a preposition, but a quantifier, and *le/la* is the generic definite article. But *du/de la*-NPs have a clearly partitive reading when the definite article is anaphorical (*boire de la bière blanche que tu as achetée hier* 'to drink some of the white beer you've bought yesterday'). *De* is then analysed by Kupferman as a preposition (governed by the verb).

<sup>6</sup> Borschev & Partee 2001 observe that the Russian sentence *On prines polnuju sljapu gribov* ('He brought a full hat of mushrooms') is odd without the adjective *polnuju* ('full'), because *sljapa* ('hat') is not a Container in the lexicon. Similarly in French, when the head noun is not a 'prototypical' Container, the nominal genitive of Substance requires the adjective *plein* ('full'). Thus, the expression *une pièce de papillons* ('a room of butterflies') needs the addition of this adjective to be fully acceptable.

denoting or individual-denoting. As shown by Kolliakou 1999, this is also the case of adnominal genitives. Thirdly, clausal and adnominal *de*-NPs obey the same constraints with respect to the kind of determiners they can take, as will be shown in Section 2.2.

2.1. *The Container/Substance Relation in Adnominal and Clausal Genitives of Substance.* Following the terminology of Borschev & Partee 2001, it will be said that the head noun of an adnominal genitive as *a glass of milk* describes a *Container*. Its dependent noun will be said to describe the *Substance* which is contained in this Container. In the following, *de*-NPs used to express the relation between a Container and some Substance/Stuff in it will be labelled *de*-NP<sub>GenS</sub>.

The first point to underline is that the meaning of verbal predicates taking a *de*-NP lexically entails a similar semantic relation between the Subject and the *de*-NP.<sup>7</sup> The genitival relation expressed by *de* ‘spans’ the verb in order to link the Subject associated with the Container role and the *de*-NP associated with the Substance role. This is trivial with locative verbs like *être rempli de* (‘to be filled with’), but it is also true in less obvious cases. Take for instance the predicate *être baigné* (lit. ‘to be bathed’) in its stative use. When the ‘Bather’ is referred to by an external argument introduced by *par*, we do not posit a Container/Substance relation between the ‘Bathee’ and the ‘Bather’. Sentence (7) does not imply nor suggest that the morning sun is the Substance of the Container *the room*:

- (7) La pièce est baignée par le soleil  
 The room is bathed by the sun  
 du matin  
 of-the morning.  
 ‘The room is bathed by the morning sun.’

However, this is exactly what shows up if we take a comparable sentence with a *de*-NP<sub>GenS</sub>. Take sentence (8):

- (8) La pièce est encore baignée du soleil  
 The room is still bathed of-the sun  
*de l’après-midi*<sub>i</sub>, alors qu’ *il*<sub>#i/j</sub> est déjà couché.  
*of the afternoon*<sub>i</sub>, while *it*<sub>#i/j</sub> is already gone  
 down.

‘The room is still bathed with the sun of the afternoon, while it has already set.’

If, in (8), *le soleil de l’après-midi* (‘the sun of the afternoon’) were the antecedent of the pronoun *il* — whose referent is the sun — a temporal contradiction would arise, since the second part of sentence (8) tells us that the

<sup>7</sup> The idea that some kinds of verbs display a Part/Whole Relation between two of their arguments is already found in Barker and Dowty 1993 (they refer to verbs like *contain*, *surround* or *enclose*).

sun has already set. The fact that (8) does not sound contradictory is due to the preposition *de*; indeed, the same sentence with the preposition *par* is contradictory, witness (9):

- (9) #La pièce est encore baignée par le soleil  
 The room is still bathed by the sun  
*de l'après-midi*, alors qu' il est déjà couché.  
*of the afternoon*, while it is already gone  
 down.  
 'The room is still bathed by the sun of the afternoon, while it has already set.'

A possible account of the acceptability of (8) runs as follows. Since any interpretation of (8) must preserve the Container/Substance relation encoded by the genitive preposition *de*, the NP 'the sun of the afternoon' refers metonymically to the Substance of the Container referred to by the subject (i.e., to the warmth and light contained in the room). Sentence (10) is similar to (8):<sup>8</sup>

- (10) [...les yeux de la Duchesse] où était captif comme dans  
 un  
 [...the eyes of the Duchess] where was captive as in a  
 tableau le ciel bleu d'une après-midi de France,  
 [...] painting the sky blue of an afternoon of France,  
 [...] baigné de lumière<sub>i</sub> même quand elle<sub>#i/j</sub> ne brillait pas.  
 bathed of light<sub>i</sub>, even when it<sub>#i/j</sub> didn't shine.  
 '[...The eyes of the Duchess] where the blue sky of a French afternoon was captive as in a painting, bathed with light even when it didn't shine.' (Proust, *Le côté de Guermantes I*, Paris: Folio, p. 248 [ed. 1954])

The NP *lumière* ('light') cannot be the antecedent of the pronoun *elle* ('it'). Indeed, this would require the light to bathe the blue sky in the eyes of the Duchess while failing to shine at the same time, which is contradictory. However, if we assume that the *de*-NP is a genitive of Substance, we can account for this apparent paradox: *lumière* describes the light contained in the eyes of the Duchess and emanating from them, whereas the antecedent of *elle*, interpreted through the mechanism of accommodation, refers to the sunshine.<sup>9</sup>

<sup>8</sup> Sentence (10), too, sounds contradictory if we replace the *de*-NP by a *par*-NP.

<sup>9</sup> This analysis is confirmed some pages later (p. 309), where Proust writes that *La Duchesse de Guermantes* *laissa pleuvoir sur moi la lumière de son regard bleu* ('The Duchess of Guermantes let rain on me the light of her blue glance'). This clearly suggests that Proust conceives the light as a Substance contained in the eyes of the Duchess.

Note that it is not argued here that adnominal and clausal *de*-NPs<sub>GenS</sub> express the Container/Substance relation exactly in the same way. Two differences must be underlined.

The first one is that while adnominal *de*-NPs<sub>GenS</sub> underspecify the exact nature of the genitival relation, clausal *de*-NPs<sub>GenS</sub> specify it lexically, through the meaning of the verb:

- (11) Une ville de lumière ('a city of light')  
= a city filled with light/ made with light/ sprinkled with light...

The second difference between the relations respectively encoded by adnominal and clausal *de*-NPs<sub>GenS</sub> concerns the interpretation of the Container entity. When the *de*-NP<sub>GenS</sub> is adnominal, the *whole* entity associated with the Container Role is involved by default in the relation. For instance, *a city of light* suggests by default that the whole city is filled or sprinkled with light.<sup>10</sup> This 'wholeness condition' on the Container does not hold when the *de*-NP<sub>GenS</sub> is clausal.<sup>11</sup> Indeed, the verb can specify through its meaning that only a particular part of the Container is concerned by the relation. The way this happens become particularly visible when looking to a sample of locative verbs taking a *de*-NP<sub>GenS</sub>:

<i>aromatiser de</i>	'to flavour with'	<i>inonder de</i>	'to flood with'
<i>bourrer de</i>	'to stuff with'	<i>ombrager de</i>	'to shadow with'
<i>consteller de</i>	'to spangle with'	<i>parsemer de</i>	'to sprinkle with'
<i>couvrir de</i>	'to cover with'	<i>percer de</i>	'to pierce with'
<i>éclabousser de</i>	'to spatter with'	<i>ponctuer de</i>	'to punctuate with'
<i>émailler de</i>	'to pepper with'	<i>quadriller de</i>	'to cover/criss-cross'
<i>enrober de</i>	'to coat with'	<i>remplir de</i>	'to fill with'
<i>gorger de</i>	'to stuff with'	<i>teinter de</i>	'to tint with'
<i>illuminer de</i>	'to illuminate with'	<i>trouer de</i>	'to punch (holes) with'
<i>infecter de</i>	'to infect with'	<i>zébrier de</i>	'to stripe with'

Several of these verbs share their stem with a noun. From this nominal stem, the interpreter deduces which kind of parts of the Container is concerned by the Container/Substance relation:

<sup>10</sup> As a reviewer points out, one can call New-York a city of light, while meaning Manhattan only. But it remains true that *by default*, the phrase *a city of light* suggests that the whole city is taken into account.

<sup>11</sup> This 'wholeness condition' bearing on adnominal *de*-NP<sub>GenS</sub> recalls 'the dynamic texture hypothesis' proposed by Dowty 2001 for verbs exhibiting the *swarm-with* alternation. Informally, this hypothesis states that in sentences like *The garden swarms with bees*, subregions of activity involving bees are distributed throughout all subregions of the garden.

- (12) Un tapis était zébré de fourmis.  
 A carpet was stripped of ants.  
 ‘A carpet was stripped with ants.’
- (13) Un tapis de fourmis.  
 A carpet of ants.

(13) suggests by default that the whole carpet is made/full of ants. By contrast, (12) implies through the nominal stem of the verb that the first relatum of the Container/Substance relation is not the whole carpet, but only bands of it. Technically, this is captured in the semantic representation if the Container/Substance relation is established between *eventualities* involving entities denoted by the Subject and the *de*-NP. For instance, (12) is represented this way:<sup>12</sup>

- (12')  $\exists s \exists s' \exists x \exists Y [(Carpet(x) \wedge Stripped(s,x) \wedge Ants(Y) \wedge Stripping(s',Y) \wedge Contains(s,s'))]$

To sum up, the clausal *de*-NP<sub>GenS</sub> specifies the Container/Substance relation lexically, whereas the adnominal *de*-NP<sub>GenS</sub> underspecifies it. Moreover, the clausal *de*-NP<sub>GenS</sub> may indicate that only a part of the Container is involved in the Container/Substance relation at hand, while the ‘wholeness condition’ of the adnominal *de*-NP<sub>GenS</sub> suggests by default that the whole entity is concerned.

## 2.2. Determiners in Adnominal and Clausal *de*-NPs

2.2.1. *Bare de*-NPs. Other striking similarities between adnominal and clausal *de*-NPs<sub>GenS</sub> concern the determiner and the semantic type of the embedded NP.<sup>13</sup> The noun of adnominal genitives of Substance is often determinerless in French as in English (*un verre de vin* ‘a glass of wine’). This is also true of the clausal *de*-NP<sub>GenS</sub>. This last fact is not trivial at all, since French is the most restrictive Romance language with regard to the possibility to have a bare noun in an argumental position. The theory must account for this surprising data, and we have already seen that several authors have stated that the bare NP is a fake one, by assuming the existence of a phonetically null determiner before the bare NP (see section 1). My proposal is that the bare NP embedded in a *de*-NP<sub>GenS</sub> is a true bare argument, and is property-denoting, like its

<sup>12</sup> Capitalized variables refer to pluralities and s-variables refer to eventualities (states).

<sup>13</sup> See Section 4 for the difference between the denotations of the NP and the [*de*+NP] string. Note that I do not argue here that clausal *de*-NPs<sub>GenS</sub> are interpreted as predicate modifiers (type  $\langle\langle e,t \rangle, \langle e,t \rangle\rangle$ ) on a par with certain kinds of nominal *de*-NPs (cf. Kolliakou 1999, Partee & Borschev 2000). I follow the definition of incorporated arguments by van Geenhoven, who argues against de Hoop's 1996 view that incorporated nouns are interpreted as predicate modifiers of type  $\langle\langle e,t \rangle, \langle e,t \rangle\rangle$ .

nominal counterpart (cf. Kolliakou 1999). The property denoted restricts a variable introduced by the verbal head, and is incorporated by the verb through the mechanism of semantic incorporation as defined by van Geenhoven 1998. This will be detailed in Section 3. For now, I just want to underline that if the NP introduced by the case marker *de* is property-denoting, the fact that it is bare is not a surprise anymore since French allows bare NPs in predicative positions; see (14)-(15):

- (14) Pierre est médecin.  
Peter is doctor.
- (15) Tu es très fourmi aujourd’hui.  
You are very ant today.  
‘You are very ant-like today.’

2.2.2. *Definite de-NPs*. Definite descriptions in *de*-NPs<sub>GenS</sub> exhibit strong similarities too. Both non-modified adnominal and non-modified clausal *de*-NPs<sub>GenS</sub> are incompatible with definite descriptions (DDs). By contrast, non-modified DDs are acceptable in *avec*-NPs (*with*-NPs):

- (16) Le verre est rempli \*du lait/ OK avec le lait.  
The glass is filled of-the milk/ with the milk.  
‘The glass is filled with the milk.’
- (17) Le bouquet \*des roses/OK avec les roses.  
The bunch of-the roses/ with the roses.  
‘The bunch of the roses/The bunch with the roses.’

The problems arising in (16) and (17) are arguably similar. Let us begin with DDs in clausal *de*-NPs (example (16)).

In the previous section, I have tried to show that the French locative verbs under study entail a Container/Substance relation between the Subject (in passive sentences) and the *de*-NP. Now, as DDs are anaphorical determiners, this means that when the *de*-NP is definite, the Substance at hand – in (16), the *exact* amount of milk in the glass – must already have been introduced in previous discourse (or interpreted through accommodation). However, this is not very plausible. Indeed, the relation between the Container and the Substance (between a certain glass and a certain amount of milk) is introduced as a new information by a sentence like (16). Now, it is not natural to assume the existence of this specific Substance *before* mentioning that it is contained in a certain Container, because the relation to the Container is often needed to define the boundaries of the Substance at hand. For instance, in (16), it is difficult to imagine that the exact amount of milk in the glass could have been mentioned before the assertion of (16), because there seem to be few ways to individuate this specific amount of milk independently of the Container/Substance relation introduced by (16). This is why DDs are not acceptable out of the blue in clausal *de*-NPs<sub>GenS</sub>. By contrast, *avec*-NPs (*with*-NPs) are compatible with the DD in (16): since, contrary to *de*, *avec* does not convey the Container/Substance relation, the DD can now refer to the bottle of milk (and one can easily imagine that this entity has been mentioned in previous discourse).

This line of explanation is further confirmed by the fact that when the Substance is explicitly mentioned in previous discourse, the definite *de*-NP becomes acceptable:<sup>14</sup>

- (18) Il restait très peu de vin<sub>i</sub> dans la bouteille.  
 There be-left-PAST. very little of wine<sub>i</sub> in the bottle.  
 Pierre préférait laisser Marie décider qui le<sub>i</sub> boirait  
 Pierre preferred let Marie decide who it<sub>i</sub> drink-  
 COND.  
 Deux minutes après, son verre était rempli du vin<sub>i</sub>.  
 Two minutes after, his glass was filled of-the wine<sub>i</sub>.  
 ‘There was very little wine<sub>i</sub> left in the bottle. Pierre preferred to let Marie decide who would drink it<sub>i</sub>. Two minutes after, his glass was filled with the wine<sub>i</sub>.’

The unacceptability of DDs in adnominal *de*-NP<sub>GenS</sub> (cf. (17)) seems to have the same origin as in clausal *de*-NP<sub>GenS</sub>. Indeed, when the context makes it clear that the Substance contained in the Container has been mentioned previously, the DD turns out to be much more acceptable (cp. (19) to (17)):<sup>15</sup>

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<sup>14</sup> Note that the adverb *toujours* (‘still’) also contributes to increase the acceptability of the DD in a *de*-NP<sub>GenS</sub> (without assuming a special context as in (18)):

- (a) \*?Le mur était couvert de la poussière.  
 The wall was covered of the dust.  
 ‘The wall was covered with the dust.’  
 (b) Le mur était toujours couvert de la poussière.  
 The wall was still covered of the dust.  
 ‘The wall was still covered with the dust.’

The explanation of this contrast runs as follows. We can assume that the adverb *toujours* presupposes the occurrence of the eventualities expressed by the verb (the ‘filling’ and the ‘be-filled’ states). The fact that the occurrence of the filling state is presupposed surely helps to accommodate the existence of the Substance involved in this filling state, and thus to provide an antecedent to the DD.

<sup>15</sup> It seems that the DD requires its antecedent to refer to the Substance *independently* of the Container/Substance relation (that is, as an entity instantiating another property than the property of being contained in the Container at hand, e.g., the property of having been picked by me this morning

- (19) Ce matin, j'ai cueilli 10 roses et 10 marguerites  
 This morning, I've picked 10 roses and 10 daisies  
 pour faire des bouquets. Voici le bouquet  
 des  
 to make some bunches. Here is the bunch  
 of-the  
 roses.  
 roses.  
 'This morning, I picked 10 roses and 10 daisies to make bunches. Here is the bunch of the roses.'

There is another similarity between DDs in clausal and adnominal genitives of Substance. Both clausal and adnominal *de*-NPs<sub>GenS</sub> are systematically compatible with a DD (not only in special contexts like (18)-(19)) when the DD refers to types of entities (example: *the milk we bought yesterday* understood as *the type of milk we bought yesterday*). For obvious reasons, non-modified DDs do not easily refer to types (*the milk* is not easily understood as *the type of milk*). However, the 'type reading' of DDs is always available with superlatives or adjectives like *same* (*the same milk* can be easily understood as *the same type of milk*). But this reading is not possible with modifiers as *immense* ('huge') or *rosâtre* ('pinkish'), generally used to describe a token and not to define a type (*the pinkish milk* is not easily understood as *the type of pinkish milk*). Interestingly, DDs are acceptable in adnominal and clausal *de*-NPs<sub>GenS</sub> only when modified by adjectives allowing the type reading (as *same*):

- (20) Un verre du même lait/ du meilleur lait.  
 A glass of-the same milk/ of-the best milk.  
 (21) Le champ est parsemé des fleurs qu' on a  
 The field is sprinkled of-the flowers that we  
 have

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in (19)). Indeed, if the presence of the antecedent were sufficient for the DD to be acceptable, then we should expect a discourse like (a) to be acceptable:

- (a) \* J'ai acheté un bouquet de roses. Ce  
 I've bought a bunch of roses. This  
 bouquet des roses sent bon.  
 bunch of-the roses smells good.  
 'This morning I bought a bunch of roses. This bunch of the roses smells good.'

However, discourse (a) is not grammatical, in spite of the fact that the NP *un bouquet de roses* ("a bunch of roses") provides an antecedent for the DD in the *de*-NP *des roses* ('of-the roses'). So, it seems that for some reason or another, the previous introduction of the Substance must be *independent* of the Container/Substance relation (as in (19)).

- dessinées hier.  
 drawn yesterday.  
 ‘The field is sprinkled with the flowers we draw yesterday.’
- (22) ?\* Un verre du lait rosâtre.  
 A glass of-the milk pinkish.  
 ‘A glass of the pinkish milk.’
- (23) ?\* Le champ est parsemé des immenses fleurs.  
 The field is sprinkled of-the huge flowers.  
 ‘The field is sprinkled with the huge flowers.’

We can explain the acceptability of the DDs in (20) and (21) as follows. When the DD does not refer to an entity (a Substance), but to a type (a type of Substance), the Substance at hand does not have to have been mentioned in previous discourse (we do not have to do as if the exact amount of milk/flowers which is said to be contained in the glass/the field had been mentioned previously). Thus, the pragmatic problem arising in (16)-(17) (and (22)-(23)) disappears.

To conclude, clausal and adnominal *de*-NPs<sub>GenS</sub> impose the same kinds of restrictions on the use of DDs. I take this to be another clue that clausal *de*-NPs<sub>GenS</sub> are similar to adnominal *de*-NPs<sub>GenS</sub>. Additional evidence comes from the fact that both adnominal and clausal *de*-NPs<sub>GenS</sub> are often bare, and that they express the same relation between two NPs of the nominal or verbal constituent.

In the next section, I present arguments in favour of the proposal that bare clausal *de*-NPs are incorporated arguments.

### 3. Bare Nouns of Clausal *de*-NPs<sub>GenS</sub>

One of the goals of van Geenhoven 1998 is to account for the semantic and syntactic similarities she observes between West Greenlandic incorporated nouns on the one hand, and West Germanic bare plural objects on the other.

Her central claim is that West Greenlandic incorporated nouns and West Germanic bare plural are *predicative* indefinites, that is, indefinites that denote a property only. The property is semantically incorporated (‘absorbed’) by the verb as the predicate of the verb’s internal argument. Predicative indefinites do not introduce a variable as the Kamp-Heimian indefinites, nor do they introduce a DRT discourse referent. Both tasks are delegated to the verb, which also contributes the existential quantifier binding the variable. The existential quantifier introduced by an incorporating verb has a dynamic force, in the sense that the verb can contribute the antecedent of a subsequent pronoun.

In van Geenhoven’s view, verbs are either (i) inherently incorporating, (ii) inherently non-incorporating, or (iii) have an incorporating variant and a non-incorporating one, linked by means of a lexical redundancy rule. In case (iii), each variant is associated with a different lexical representation, and the selection of one variant or the other depends on the semantic type of the NP. I repeat (and simplify) in (24)-(25) the two lexical representations associated with the verb *eat*. The incorporating one is selected when the internal

argument is a bare NP, and the non-incorporating one is selected when the same argument is quantificational (examples and representations from van Geenhoven 1998: 132-133):

(24) EAT :  $\lambda P \lambda x \exists y [EAT(x,y) \wedge P(y)]$   
Tim ate apples

(25) EAT :  $\lambda y \lambda x [EAT(x,y)]$   
Tim ate every apple

In what follows, I will show that bare nouns in clausal  $de$ -NPs<sub>GenS</sub> exhibit the central properties of incorporated arguments, and that the denominal verbs we are studying have both an incorporating variant, activated when the  $de$ -NPs is bare, and a non-incorporating variant.

Firstly, bare  $de$ -NPs<sub>GenS</sub> always take narrow scope, like incorporated arguments. The obligatoriness of narrow scope of incorporated arguments is expected since any operator taking scope over the verb automatically takes scope over the lexically bound arguments as well. Sentence (26) and its glosses illustrate this fact:

(26) La maison n'est pas bordée d'arbres.  
The house is not lined of trees.  
'The house is not lined with trees.'  
i. It is not the case that the house is lined with trees.  
ii. # There are trees such that they do not line the house.

The next point concerns the verbs which can take a  $de$ -NPs<sub>GenS</sub>. English counterparts of these verbs have been analyzed by Jackendoff 1990. Jackendoff's idea was that denominal verbs as *butter*, *powder* or *cover* have an "Incorporated Theme", that is, a Theme projected by the verb itself, which does not need a syntactic counterpart to be interpreted. According to Jackendoff, this explains why we interpret the Theme BUTTER<sub>noun</sub> in the sentence *The toast is buttered*. The problem inherent to this proposal is explaining why we could say *Bill buttered the toast with margarine* (and not only with butter). But Jackendoff is right to state that "something" is incorporated. I propose to translate this part of his proposal in saying that these verbs have an incorporating variant. This incorporating variant contributes the variable corresponding to the Incorporated Theme of Jackendoff and the existential quantifier binding it (cf. (27)). I propose in (29) and (30) lexical representations for the incorporating and non-incorporating variants of adjectival participles of denominal verbs:

(27) VERB<sub>incorp.</sub> :  $\lambda P \lambda y \lambda x \exists z [VERB(x,y,z) \wedge P(z)]$

(28) VERB<sub>non-incorp.</sub> :  $\lambda z \lambda y \lambda x [VERB(x,y,z)]$

(29) ADJ<sub>incorp.</sub> :  $\lambda P \lambda x \exists y [ADJ(x,y) \wedge P(y)]$

(30) ADJ<sub>non-incorp.</sub> :  $\lambda y \lambda x [ADJ(x,y)]$

These translations explain why the overt argument corresponding to the variable already bound by the verb or the adjective is by default bare in

English, a fact about which Jackendoff is silent. This argument can be bare because it can be property-denoting.

The next piece of evidence suggesting that denominal verbs or adjectives taking a *de*-NP<sub>GenS</sub> can be incorporating is that they can antecede a pronoun without the corresponding argument to be present (i.e. the *de*-NP can be implicit). This confirms that it is the verb, not the *de*-NPs, that introduces the discourse referent. As illustrated by (31)-(32), verbs at hand provide, just like incorporating verbs, an existential quantifier that has a dynamic force. They contribute the antecedent of a pronoun; but, interestingly, this pronoun must be neuter:

- (31) Le toast qui est beurré<sub>i</sub> est très chaud,  
 The toast which is buttered<sub>i</sub> is very hot,  
 alors ça<sub>i</sub>/ #il<sub>i</sub> fond. [le beurre<sub>i</sub>]  
 then it<sub>i</sub>/ he<sub>i</sub> melts. [the butter<sub>i</sub>]  
 ‘The toast which is buttered<sub>i</sub> is very hot, then it<sub>i</sub>/he<sub>i</sub> melts.’
- (32) La jupe que j’ai vue hier est doublée<sub>i</sub>.  
 The skirt that I’ve seen yesterday is lined<sub>i</sub>.  
 C<sub>i</sub>’est/ #Elle<sub>i</sub> est en nylon. [la doublure<sub>i</sub>]  
 It<sub>i</sub>’s/ she<sub>i</sub> is in nylon. [the lining<sub>i</sub>]  
 ‘The skirt I’ve seen yesterday is lined<sub>i</sub>. It<sub>i</sub>’s/she<sub>i</sub> is in nylon.’

In the proposal defended here, the incorporating verb only introduces the verbal predicative constant — BUTTER<sub>verb</sub> — as any verb does. Thus, the only thing made precise by the predicative constant of the verb is that the value of the bound variable is something buttering, not necessarily butter. As the discourse referent serving as antecedent is not associated with a nominal predicate, the anaphoric pronoun cannot require the gender to be fixed. Thus, only neuter pronouns are acceptable. This hypothesis is consistent with the proposal put forth by Corblin (1995: 81-95). According to Corblin, pronouns *cela/ça* (‘that, it’) are used when the antecedent is not introduced by a NP in the narrow sense, and this is clearly the case here.

A possible counter-argument is that nothing guarantees that the neuter pronoun has as its antecedent the variable restricted by the *de*-NPs when the latter are explicit. One can argue that in fact the antecedent of the pronoun is an implicit *par*-NP (*by*-NP). In this perspective, data (31)-(32) do not support the view that *de*-NPs are incorporated. However, we know that the pronouns in (31) and (32) do not have an implicit *par*-NP as antecedent, because a *par*-NP which makes explicit the descriptive content of the pronoun sounds definitely odd:

- (33) ?\* La tartine est beurrée par de la margarine.  
 The toast is buttered by of the butter.  
 ‘The toast is buttered by some butter.’
- (34) ??La jupe est doublée par du tissu.  
 The skirt is lined by of-the material.  
 ‘The skirt is lined by some material.’

In sum, we have argued that bare *de*-NPs<sub>GenS</sub> can be analysed as incorporated arguments, and that denominal verbs taking a *de*-NP<sub>GenS</sub> have an incorporating variant, activated when the NP is bare or absent, and a non-incorporating variant. This non-incorporating variant is activated when *de*-NPs embed quantificational nominal expressions.

#### 4. Bare Nouns of Adnominal *de*-NPs<sub>GenS</sub>

To conclude, I would like to discuss one of the proposals of Kolliakou 1999. Kolliakou compares property-denoting *de*-NPs with non-intersective modifiers. For instance, the *de*-NP of *une attaque de partisans* (lit. ‘an attack of partisans’) “identifies a particular kind of attack” (Kolliakou 1999: 735). This proposal is convincing, but it leaves us with three problems when applied to *de*-NPs<sub>GenS</sub>. First, it doesn’t capture the difference between property-denoting *de*-NPs<sub>GenS</sub> and adjectives: *une tartine de miel* (lit. ‘a toast of honey’) is analysed just the same way as *une tartine mielleuse* (‘a honey-toast’) which is odd. Secondly, analyzing property-denoting *de*-NPs on a par with adjectives does not make clear the presence of a genitival relation in *de*-NPs<sub>GenS</sub>, since genitival relations are not encoded by adjectives. Thirdly, it is not easy to understand why the *de*-NP can antecede a pronoun if it is similar to an adjective (*Voici une tartine de miel<sub>i</sub>. Il<sub>i</sub> est délicieux*, ‘Here is a toast of honey<sub>i</sub>. It<sub>i</sub> is delicious’).

The solution to these problems I will sketch here only concerns adnominal genitives of Substance. It relies on analyses of bare *de*-NPs offered by Kupferman 1994 and Hulk 1996. According to these authors, *de* in some *de*-NPs is a quantificational functional head taking a property as its internal argument. Relying on this idea, I propose the following hypothesis: With respect to the property denoted by the bare noun, the *de* in the adnominal *de*-NP<sub>GenS</sub> plays the same role as the incorporating verb with respect to the bare *de*-NP. It contributes the variable which is restricted by the property denoted by the bare noun. In other words, *de* is incorporating in adnominal *de*-NP<sub>GenS</sub>. Besides, *de* also expresses a genitival relation, as usual. In the case at hand, the genitival relation links a Container and some Substance filling or composing the Container. For instance, *bouquet de roses* (‘bunch of roses’) would be analysed as in (35):<sup>16</sup>

(35)	bouquet :	$\lambda x$ [Bouquet (x)]
	<i>de</i> <sub>GenS</sub> :	$\lambda Q \lambda P \lambda x \exists Y [\mathbf{R}_{C/S} (x, Y) \wedge P(x) \wedge Q(Y)]$
	de roses :	$\lambda P \lambda x \exists Y [\mathbf{R}_{C/S} (x, Y) \wedge P(x) \wedge \text{Roses} (Y)]$
	bouquet de roses:	$\lambda x \exists Y [\mathbf{R}_{C/S} (x, Y) \wedge \text{Bouquet} (x) \wedge \text{Roses} (Y)]$

<sup>16</sup> ‘ $\mathbf{R}_{C/S}$ ’ refers to the relation between a Container (‘C’) and a Substance (‘S’).

This proposal, which only addresses the case of *de*-NPs<sub>GenS</sub>, has four advantages. Firstly, it explains why *de*-NPs<sub>GenS</sub> are transparent to discourse anaphora, as illustrated in (36), contrary to other PPs such as *à*-NPs (cf. 37):

- (36) J'ai mis un vase de fleurs<sub>i</sub> sur la table.  
 I've put a vase of flowers<sub>i</sub> on the table.  
 Elles<sub>i</sub> sentent bon.  
 They<sub>i</sub> smell good.  
 'I've put a vase of flowers<sub>i</sub> on the table. They<sub>i</sub> smell good.'
- (37) #J'ai mis un vase à fleurs<sub>i</sub> sur la table.  
 I've put a vase for flowers<sub>i</sub> on the table.  
 Elles<sub>i</sub> sentent bon.  
 They<sub>i</sub> smell good.  
 'I've put a vase for flowers on the table. They smell good.'

Secondly, the semantic contribution of *de* is more clearly delineated than in analyses assuming that the *de*-NP is similar to an adjective. Thirdly, we 'see' the genitival relation in the semantic representation. And finally, we link Kolliakou's insight that *de*-NPs can be property-denoting to previous analyses of *de* as a *quantifier* by Kupferman 1994 and Hulke 1996.

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