

# ON THE STRUCTURE OF FRENCH *DU/DES* ‘OF.THE’ CONSTITUENTS\*

Tabea Ihsane (*tabea.ihsane@lettres.unige.ch*)

## 1. INTRODUCTION

### 1.1. Aim of the paper

This paper focuses on the French constructions involving the so-called ‘partitive articles’ *du* ‘of.the.masc’, *de la* ‘of the.fem’ and *des* ‘of.the.pl.’ illustrated in (1), henceforth *du/des* ‘of.the’ constituents/constructions<sup>1</sup>.

- (1) Elle a mangé **du** gâteau / **de la** tarte / **des** biscuits  
she has eaten of.the.masc cake / of the.fem tart / of.the.pl biscuits

The issue here is the syntactic structure of these constituents, and in particular the status of the element *de* generally translated as ‘of’. There is no consensus on the question in the literature. For some linguists *de* is an article (Frei, 1960; Damourette and Pichon, 1952) – i.e. it is part of the nominal structure – and for others it is a preposition (Clédat, 1901; Gross, 1967; Wagner and Pinchon, 1962) – i.e. it is outside the nominal structure. More recently, it has been proposed that *de* in examples such as (1) has a dual status – preposition or quantificational head (Kupferman, 1994).

Although the dual status of *de* ‘of’ is attractive, we explore an alternative here, suggesting that *de* ‘of’ in *du/des* ‘of.the’ constituents is a functional head of the nominal extended projection, whether the construction is partitive or indefinite. The discussion takes place in a context where constituents introduced by ‘partitive articles’ are either unambiguously considered as partitive (Chierchia, 1998), unambiguously as indefinite (Storto, 2001) or ambiguous between a partitive and an indefinite reading (Delfitto, 1993).

### 1.2. Terminology and theoretical background

#### 1.2.1. *Different types of partitives*

The term partitive we are interested in here is the name of the *part-of* relation. The syntactic expression of this relation can take different forms. In English for example, it can be expressed in compounds such as *mountain-top*... Most importantly, partitives have the frame *det<sub>1</sub> (one) of det<sub>2</sub> + common noun*, as in (2) below, where the partitives are indicated in italics:

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\* This is a working paper, implying that the ideas will be developed in further work and that comments are most welcome. Many thanks to Léna Baunaz, Claire Forel, Eric Haerberli, Christopher Laenzlinger, Genoveva Puskás, Ur Shlonsky and Eszter Varga for their valuable remarks and discussions on examples/parts of the paper, or on the first draft of the paper. Needless to say, all errors are my own.

<sup>1</sup> We will not discuss examples of the type *pas de livres* ‘not of books’ where a ‘bare’ NP is preceded by *de* ‘of’ in this paper. The reader is referred to Kayne (1981) and the references therein.

- (2) a. *Some of the senators* were acting strange. (Hoeksema, 1996:2)  
 b. *None of us* left before 11 p.m.  
 c. *One or two of the first 70 members* had died by then.  
 d. *Many of his friends* are still at the funeral.  
 e. *Not too many of these problems* have been solved.  
 f. *Every single one of a number of proposals* was rejected.

In (2) the *part-of* relation involves a group or a collection and its members. This is not always the case as in (3) which illustrates *mass partitives*.

- (3) a. *Most of the city* is off-limits to foreigners. (Hoeksema, 1996:2)  
 b. *Some of him* had stayed behind in his native Rumania.  
 c. *Some of the water* was murky.  
 d. We did not get to see *all of her new garden*.  
 e. *Half of every donation* goes to administrative costs.  
 f. Rick is not *much of a hero*.

In these examples, *det<sub>1</sub>* is a mass noun determiner and the part-of relation is expressed either between a quantity of some substance and its subquantities or between an individual and its parts. When an upstairs indefinite determiner cooccurs with a downstairs determiner, the question arises whether the distribution of the whole partitive construction will be determined by the indefiniteness of the former or by the definiteness of the latter. As our study concentrates on *bare partitives* (see below), such questions are out of the scope of the paper.

The type of partitives we will focus on in this paper are called bare partitives, because the prepositional phrase is not preceded by any quantificational element.<sup>2</sup> Such constructions are rare in English but not in French. (4) is an illustration of bare partitives in English, French examples were given in (1).

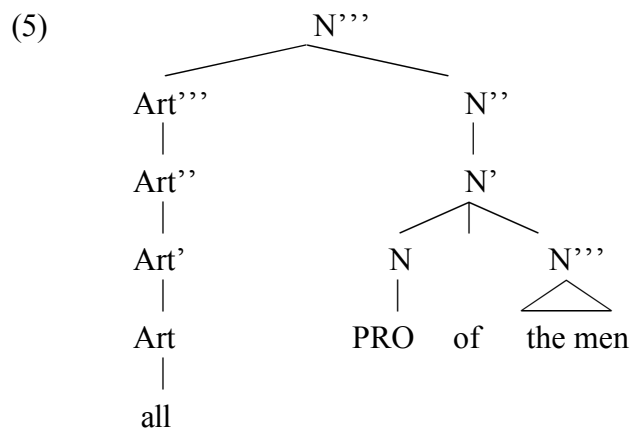
- (4) a. Again Tarzan came down into the village and renewed his supply of arrows and ate of the offering of food which the blacks had mad to appease his wrath. (From: E. Rice Burroughs, *Tarzan of the Apes*)  
 b. In the breast of his blouse he carried some coarse dark bread; he ate of this between whiles, and sat munching and drinking near Madame Defarge's counter: (From: Ch. Dickens, *A Tale of two Cities*)  
 (Hoeksema, 1996:15-6)

In (4), the partitive expressions, involving the preposition *of*, indicate that the object of the verb only partly undergoes the action of eating. In other languages, such noun phrases may be in the partitive case.

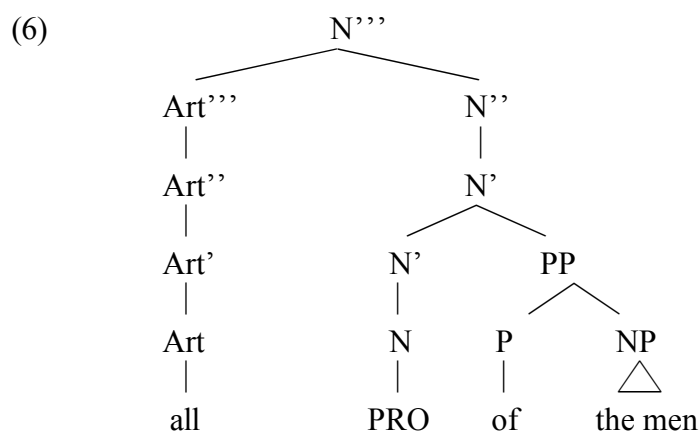
### 1.2.2. Earlier syntactic representations

Landmark studies of English partitives are Jackendoff's (1977) and Selkirk's (1977). The structure proposed by Jackendoff is headed by an empty head PRO:

<sup>2</sup> As we will see in the next sections, bare partitives represent a subset of the *du/des* 'of.the' constituents illustrated in (1). The rest of these constructions do not have a part-of reading.



In (5), *of* does not head a PP because Jackendoff assumes that *of* is a case marker inserted at a late stage of the derivation and not a regular preposition. In order to obtain a more regular X-bar structure, Hoeksema suggests that a PP be added to the above structure.



An argument in favour of an empty category is that this position is sometimes overtly filled, for example when *det<sub>i</sub>* requires the presence of a following nominal, as in *every (single) one of my friends, the only one of them that got away, neither one of the two women...* (Hoeksema 1996:4)<sup>3</sup>. In his study of partitives, Jackendoff (1977) proposes a constraint on such constructions stipulating:

(7) *Partitive Constraint*

In an *of-N'''* construction interpreted as a partitive, the N''' must have a demonstrative or genitive specifier.  
(cited in Hoeksema 1996:6)

<sup>3</sup> Other arguments – not related to partitives – in favour of a PRO in nominal structures are given by Abney (1987:89ff). More importantly, Abney (1987:344) postulates an empty N in comparative and superlative constructions. He proposes that the partitive PP occurring in such constructions, on a par with quantifiers, is the complement of this empty head.

To get rid of the disjunction in the Partitive Constraint, Barwise and Cooper<sup>4</sup> (1981) propose that *of* must be followed by a *definite* NP. The Partitive Constraint has been widely discussed in the literature and different problematic aspects have been pointed out (Stockwell, Schachter and Partee, 1973; Ladusaw, 1982; Hoeksema, 1984; Abbott, 1996, Reed, 1996, Wilkinson, 1996 etc). For reasons of space we will not go into them here, but merely cite some counterexamples to the Partitive Constraint (from Abbott, 1996:29ff.).

- (8) a. One of some boys who were playing in the alley got arrested.  
 b. He ate three of some apples he found on the ground.  
 (Stockwell, Schachter, and Partee, 1973:144)
- (9) I heard too much of one speech and not enough of the other.  
 (Selkirk, 1977:315, n 7)
- (10) a. That book could belong to one of three people.  
 b. This is one of a number of counterexamples to the PC.  
 c. John was one of several students who arrived late.  
 (Ladusaw, 1982:240)
- (11) a. I'll be back in three quarters of an hour.  
 b. Why settle for half of a loaf?  
 c. There was most of a birthday cake and all of a large vegetarian pizza sitting on the buffet.  
 d. That sounds like too much of a good thing.

These examples show that the embedded NP of a partitive construction does not have to be definite, which is why we will not adopt the Partitive Constraint (7) here.

### 1.2.3. *Quantitative structures*

Partitive structures such as (2) have to be differentiated from quantitative expressions.<sup>5</sup> In French, the different elements reported in (12) are considered as quantitative by Milner (1978:34):

- (12) a. articles: *un* 'a', *du* 'of.the', *des* 'of.the.pl.'  
 b. numerals: *un* 'one', *deux* 'two', *trois* 'three'...  
 c. *aucun* 'none', *certains* 'some', *plusieurs* 'several', *quelques* 'some'  
 d. adverbs of quantity: *beaucoup* 'a lot', (*un*) *peu* '(a) little', (*le*) *plus* '(the) more', (*le*) *moins* '(the) less', *davantage* 'more', *combien* 'how much', *autant* 'as much'

On the basis of French data, Milner (op. cit.) shows that the structure of quantitative constructions and partitives differs.<sup>6</sup> The arguments he gives are reported below: (13)-(14) illustrate extraction, and (15)-(16) coordination (Milner 1978:71ff).

<sup>4</sup> Keenan and Stavi (1986) suggest another structure where *all of the* in *all of the men* is analysed as a complex determiner with *men* as its argument. We will not discuss it here.

<sup>5</sup> Note that Milner and Cardinaletti and Giusti's (2002) use the term *quantitative* differently. Milner refers to quantifiers whereas Cardinaletti and Giusti call quantitative DP the indefinite DP which denotes the restriction of a set in partitive structures (cf. Section 3.1, 2002:17).

- (13) a. C'est de Zola que j'ai lu deux livres.  
it is of Zola that I have read two books
- b. C'est de Zola que j'ai lu beaucoup de livres.  
it is of Zola that I have read a.lot of books
- (14) a. \* C'est de Zola que j'ai lu deux des livres.  
it is of Zola that I have read two of.the.pl books
- b. \* C'est de Zola que j'ai lu beaucoup des livres  
it is of Zola that I have read a.lot of.the.pl books

(13) shows that *de Zola* 'of Zola' can be extracted out of the quantitative phrase whereas it cannot be extracted out of the partitive phrase (14). Note that *beaucoup de livres* 'a.lot of books' is treated on a par with *deux livres* 'two books', i.e. that it is a quantitative construction and not a partitive one, contrary to *beaucoup des livres* 'a.lot of the books', which is partitive.

Coordination also shows that we are dealing with two different structures. In order to be coordinated, two constituents have to be of the same kind.

- (15) a. J'ai reçu beaucoup de mes voisins et de mes amis.  
I have entertained many of my neighbours and of my friends
- b. J'ai reçu beaucoup de voisins et d'amis.  
I have entertained many of neighbours and of friends
- (16) \* J'ai reçu beaucoup de mes voisins et d'amis.  
I have entertained many of my neighbours and of friends

In (16), *de mes voisins* 'of my neighbours' and *d'amis* 'of friends' can clearly not be coordinated, leading Milner to suggest (1978:74) that the former is an N'' while the latter is an N'.

In addition to the two arguments mentioned above, Cardinaletti and Giusti (2002:10(28)) observe, following Belletti (1979:1546), that quantitative and partitive constructions have different meanings:

- (17) a. Ho letto cinque libri che mi avevi prestato.  
(I) have read five books that (you) to.me had lent
- b. Ho letto cinque dei libri che mi avevi prestato.  
(I) have read five of.the books that (you) to.me had lent

In (17a), the number of books that have been read corresponds to the number of books that have been lent. In (17b), however, the five books that have been read represent a subset of the books that have been lent, i.e. that there are more than five books that have been lent.

Adopting such arguments, we consider that quantitative and partitive constructions have different structures. In this paper, we will only glimpse at a subset of the former and at a subset of the latter as we only examine French *du/des* 'of.the' constructions.

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<sup>6</sup> Selkirk (1977) also proposed that simple quantitative expressions and those involving a partitive phrase have independent structures.

### 1.2.4. *The structure of the paper*

The paper is organised as follows. Arguments in favour of a dual status of *de* are given in Section 2. According to Kupferman (1979, 1994), bare partitives, i.e. *du/des* ‘of.the’ constituents with a part-of meaning, are restricted to the complement position of a small number of verbs and are ambiguous, as they have an indefinite reading in addition to the partitive one. The categorical status of these constituents is also discussed in this section. Section 3 is devoted to the syntactic analysis of *du/des* constituents. Section 3.1 concentrates on the partitive construction. We first report Cardinaletti & Giusti’s (2002) proposal for existential quantifiers, as they extend it to French bare partitives. We then briefly explore an alternative where *de* ‘of’ in partitive constructions is analysed as a non-prepositional element. In Section 3.2, we focus on indefinite *du/des* ‘of.the’ constructions and postulate a nominal Aspectual Phrase hosting *de* ‘of’. Section 4 discusses some remaining problems and Section 5 is the conclusion to this paper.

## 2. THE DATA

### 2.1. The verbs

At first sight, there is no reason to differentiate the verbs illustrated in (18). They all select a complement introduced by a ‘partitive article’, *de la* ‘of the.fem’ in the present case.

- (18) a. Je mange de la viande. I eat of the meat (Kupferman 1979:7)  
 b. Je bois de la bière. I drink of the beer  
 c. Je prends du cognac. I take of.the cognac  
 d. Il a vu de la viande. he has seen of the meat  
 e. Il montre de la bière. he shows of the beer  
 f. Il apporte du cognac. he brings of.the cognac

However, in his work Kupferman (1979, 1994, 1998) shows that the verbs in (18) display different properties and that therefore they should be classified into two groups, verbs of Type D/I and verbs of Type D, where D and I stand for the type of complement selected, i.e. direct and indirect object respectively. *Manger* ‘eat’, *boire* ‘drink’ and *prendre* ‘take’ belong to the first group and *voir* ‘see’, *montrer* ‘show’ and *apporter* ‘bring’ to the second one (see also Section 2.2). (19) and (20) illustrate each type (Kupferman 1979:7).

- (19) a. J’ai mangé du gâteau,  $\left\{ \begin{array}{l} \text{dont} \\ \text{ce qu’} \end{array} \right\}$  il a aussi mangé d’ailleurs.  
 b. I have eaten of.the.masc cake of.which he has also eaten besides  
 b. this which
- (20) a. Il a vu du gâteau  $\left\{ \begin{array}{l} * \text{ dont} \\ \text{ce qu’} \end{array} \right\}$  nous avons aussi vu d’ailleurs.  
 b. he has seen of.the.masc cake of.which we have also seen besides  
 b. this which

(19) shows that verbs of Type D/I can be followed by two kinds of relative constructions, one attesting *dont* 'of.which' and the other one *ce que* 'this which'.<sup>7</sup> The former relativizes an indirect object, and the latter a direct object. With verbs of Type D only the second type of relative pronoun is grammatical (20). The parallel between (19b) and (20b) suggests that the two verb types share some selectional properties, as both can take a direct object. In other words, complements of the type *du gâteau* 'of.the.masc. cake' can be direct or indirect objects (19). What this implies for the structure, i.e. what the status and function of *de* 'of' is, is the central topic of this paper. Needless to say that the complexity of the question will not allow us to solve all the problems that arise.

The semantic difference between (19a) and (19b) is rather subtle. (19a) means that the two participants had some cake and both have eaten of the *same* cake; it is clearly partitive, they had a part of the cake in question. Note that to get this interpretation the cake has to be specific.<sup>8</sup> (19b) however means that the two participants had some cake, but the listener/reader has no idea whether they ate from the same cake or not; they had an undetermined quantity/part of cake. (19b) by no means suggests that the subject of the relative clause *il* 'he' ate the same part of cake as the subject of the main clause *je* 'I' (which would of course be impossible, as Claire Forel, p.c. observes). The semantic difference just mentioned leads to an interesting comparison. Both sentences, (19a) and (19b), refer to *some* cake, and as it has been noted in the literature (Milsark 1977; De Hoop, 1992; Diesing, 1992) *some* is ambiguous. It has a strong and a weak reading, as illustrated in (21).

- (21) a. Some senators were acting strange (There is a set of strange-acting senators).  
 b. SOME senators were acting strange (Part of the senators is acting strange).  
 (Hoeksema 1996:2)

Only the stressed SOME (21b) has a partitive reading which can be formally expressed by a partitive phrase, as in *some of the senators were acting strange*. The weak *some*, often marked as *sm*, has an indefinite reading. In the same vein, the second part of (19) can be paraphrased as:

- (22) a. part of the cake has been eaten by him (19a) (cf. 21b)  
 b. there is a quantity of cake that has been eaten by him (19b) (cf. 21a)

The ambiguity of examples such as (19) has also been noticed by Milner (1978:77) who mentions the following examples:

- (23) a. J'ai bu du vin que tu m'as apporté  
 I have drunk of.the.masc wine that you to.me have brought  
 b. J'ai mangé des gâteaux que tu as faits.  
 I have eaten of.the cakes that you have made

According to Milner, (23a) can mean 'I had an undetermined quantity of an undetermined wine (and you had brought this wine)' or 'I had an undetermined quantity of the determined wine that you had brought'. Milner analyses the first interpretation as a quantitative constituent with an appositive relative clause and the second one as a partitive constituent

<sup>7</sup> Notice that some native speakers of French use *dont* 'of.which' very rarely nowadays. They tend to consider it as old-fashioned and replace it with *ce que*, as in (19b). However, when *dont* is partitive, *ce que* cannot express the 'part-of' meaning. Thanks to Claire Forel and Genoveva Puskás for these comments.

<sup>8</sup> This is also observed by Kupferman (1979 :10).

with a restrictive relative clause. He makes a similar proposal for (23b). This analysis relies on Milner's assumption that the set out of which a part is taken has to be definite. In other words, Milner adopts the Partitive Constraint (7) mentioned in Section 1.2.2, contrary to us. Despite this, the conclusion seems to be the same as the one we reached for (19), one reading is partitive and the other one is not. What Milner describes as *an undetermined quantity of an undetermined wine* has to be made more precise though and will be attempted at in Section 3.2. Milner also mentions some constraints on ambiguous constructions such as (23). Only a limited number of verbs (Kupferman's Type D/I and also for example *read...*) and their complement – in opposition to the subject position - are concerned (1978:78).

The main observation that the above description leads to is that indirect objects have a partitive reading whereas direct object have an indefinite reading, although the distinction direct/indirect object might not be the right one. Of course, this only concerns bare partitives, which therefore seem to be restricted to verbs of Type D/I, the only ones taking indirect objects. In addition, such observations re-affirm that the label *article partitif* 'partitive article' for the French *du* 'of.the.masc', *de la* 'of the.fem' and *des* 'of.the.pl' is not appropriate: only in a minority of cases do they involve a partitive reading. In the next section, we turn to the categorial properties of the direct and indirect objects described in this section.

## 2.2. The complements

### 2.2.1. The prepositional complement

That the verbs illustrated in (18), repeated below for convenience, should be classified into two groups, is supported by (25) and (26) (from Kupferman 1979:7). (25) shows that the facts illustrated in (19a) and (20a) for *manger* 'eat' apply to additional verbs such as *boire* 'drink' and *prendre* 'take'.

- (24) a. Je mange de la viande. I eat of the meat (Kupferman 1979:7)  
 b. Je bois de la bière. I drink of the beer  
 c. Je prends du cognac. I take of.the cognac  
 d. Il a vu de la viande. he has seen of the meat  
 e. Il montre de la bière. he shows of the beer  
 f. Il apporte du cognac. he brings of.the cognac

- (25) a. La viande **dont** je mange } the meat of.which I eat  
 La bière **dont** je bois } est jaune. the beer of.which I drink } is yellow  
 Le cognac **dont** je prends } the cognac of which I take }

- b. \* La viande **dont** il a vu } the meat of.which he has seen  
 \* La bière **dont** il montre } est jaune. the beer of.which he shows } is yellow  
 \* Le cognac **dont** il apporte } the cognac of.which he brings }

- (26) a. Il m'a demandé **de quoi** { je mangeais. } I was.eating  
 { je buvais. } he me has asked of what { I was.drinking  
 { je prenais. } I was.taking

- b. \* Il m'a demandé **de quoi** { il avait vu. } he has seen  
 { il montrait. } he me has asked of what { he was.showing  
 { il apportait. } he was.bringing



In (25), the use of the relative pronoun *dont* 'of.which' is grammatical with *manger* 'eat', *boire* 'drink' and *prendre* 'take', but not with *voir* 'see', *montrer* 'show' and *apporter* 'bring'. Similarly, prepositional question words such as *de quoi* 'of what', which can be used as constituency tests, are grammatical with the former but not with the latter (26), thus supporting the following typology:

- (27) a. Type D/I<sup>9</sup> *manger* 'eat', *boire* 'drink', *prendre* 'take'...  
 b. Type D *voir* 'see', *montrer* 'show', *apporter* 'bring'...

In addition to a distinction between *verb* types, (25) and (26) allow us to make a distinction between the type of *complements* selected by the verbs. The grammaticality of *dont* 'of.which', which is only possible with a PP, in (25a) and of a prepositional question word such as *de quoi* 'of what' in (26a) clearly shows that the complements in these examples are prepositional, contrary to the ones in (25b) and (26b).<sup>10</sup> This means that when verbs of Type D/I in (25a) and (26a) take an indirect complement, they are parallel to *abuser de* 'abuse of' and *être content de* 'be happy of' which take the preposition *de* 'of'. Consider (28) (from Kupferman 1979 :5-6).

- (28) a. Il  $\left\{ \begin{array}{l} \text{abuse} \\ \text{est content} \\ \text{boit} \end{array} \right\}$  **de la bière.**      he  $\left\{ \begin{array}{l} \text{abuses} \\ \text{is happy} \\ \text{drinks} \end{array} \right\}$  of the beer
- b. La bière **dont** il  $\left\{ \begin{array}{l} \text{abuse} \\ \text{est content} \\ \text{boit} \end{array} \right\}$  est...      the beer of.which he  $\left\{ \begin{array}{l} \text{abuses} \\ \text{is happy is...} \\ \text{drinks} \end{array} \right\}$
- c. **De quoi**  $\left\{ \begin{array}{l} \text{abuse-t-il} \\ \text{est-il content ?} \\ \text{boit-il} \end{array} \right\}$       of what  $\left\{ \begin{array}{l} \text{abuses he} \\ \text{is he happy} \\ \text{drinks he} \end{array} \right\}$

(28) shows that *abuser de* 'abuse of', *être content de* 'be happy of' and *boire* 'drink', which is of Type D/I, exhibit the same properties, namely use of *dont* 'of.which' and prepositional question words, suggesting that they share the same argument structure. In other words they take a prepositional complement.

That the complements under discussion are prepositional is supported by the impossibility to move a PP out of them (recall (14a) in Section 1.2.3). It is indeed shown in the literature that a PP cannot cross another one (Abeillé et al, 2004 for a recent reference). (29) is an example of PP extraction and (30) of PP extraposition. Note that these examples do not illustrate bare *du/des* 'of.the' constructions to make sure that the constructions are partitive and not ambiguous between a partitive and a non partitive reading: if *deux* 'two' in (29) were omitted it would be impossible to tell that we are not dealing with a direct object, out of which it would be possible to extract *de Zola* 'of Zola'.

<sup>9</sup> Type D/I corresponds to what Englebert (1992) calls 'fragmentative' verbs.

<sup>10</sup> Notice that *dont* 'of.which' is only grammatical in partitive constructions (not in quantitative expressions such as (i)) (Milner, 1978:76ff.).

(i)            \*des livres            **dont**            j'ai lu beaucoup / deux            (Milner, 1978:76)  
                  of.the books            of.which            I have read many / two

- (29) \* C'est **de Zola** que j'ai lu **deux des livres**. (Milner1978 :71)  
 it is of Zola that I have read two of.the.pl books
- (30) a. \* **Two of those reviews** have been reprinted **of Helen's first symphony**.  
 b. Two reviews have been reprinted of Helen's first symphony.  
 (Cardinaletti & Giusti 2002:9)

In (29), the PP *de Zola* 'of Zola' cannot be extracted from *deux des livres* <*de Zola*> 'two of.the books <of Zola>', suggesting that *des livres* 'of.the books' is a PP blocking the movement of another PP. English examples such as (30) attest the same phenomenon. In (30a), the extraposition of the PP *of Helen's first symphony* leads to ungrammaticality, because this constituent would have to cross another PP, the partitive structure *of those reviews*. When there is no preposition as in *two reviews* in (30b), *of Helen's first symphony* can be extraposed.

Relating the above discussion to the description of the preceding section, we arrive at a rather strong conclusion. We have seen that only verbs of Type D/I take indirect objects, and that these constituents are partitive. As indirect objects are prepositional (see Section 3.1.2 for a different analysis though), it implies that only verbs of Type D/I take bare partitive complements. So far, the categorial status of the direct objects selected by verbs of Type D and verbs of Type D/I has not been addressed. In the next section, we present arguments that show that they are not PPs, but indefinite DPs. More details on the structure will be given in Section 3.2.

### 2.2.2. The indefinite complement

That constituents introduced by 'partitive articles' are not always prepositional was supported by (25b) and (26b) in the preceding section. More evidence for this conclusion comes from their grammaticality in subject positions. Consider (31) and (32) (from Kupferman, 1979:8).

- (31) a. La corde / cette corde traînait par terre.  
 the rope this rope was.lying by ground  
 b. De la corde / de cette corde traînait par terre.  
 of the rope of this rope was.lying by ground
- (32) a. L'eau /cette eau boueuse recouvrait la route.  
 the water this water muddy was.covering the road  
 b. De l'eau /de cette eau boueuse recouvrait la route.  
 of the water of this water muddy was.covering the road

Assuming that subjects have to be DPs and cannot be PPs, *de la corde/de cette corde* 'of the rope/of this rope' in (31b) and *de l'eau/de cette eau* 'of the water/of this water' in (32b) have to be treated on a par with *la corde/cette corde* 'the rope/this rope' and *l'eau/cette eau* 'the water/this water' respectively, in other words as DPs.<sup>11</sup>

<sup>11</sup> Note that examples such as (i) are grammatical in English although the subject is a PP :

- (i) a. After four would be the best time for me. (Haegeman and Guéron, 1999 :119)  
 b. Under the table is a good place to hide.

Such examples are however highly restricted.

A second argument that shows that *du/des* 'of.the' constituents can be DPs comes from causative constructions of the type *faire faire quelque chose à/par quelqu'un* 'make do something to/by someone' which can only take a DP followed by a PP as (33) illustrates.

- (33) a. \* J'ai fait boire Marie ce lait. I have made drink Mary this milk  
 b. J'ai fait boire ce lait à/par Marie. I have made this milk to/by Mary  
 c. J'ai fait boire Marie dans cette tasse. I have made drink Mary in this cup  
 (Milner, 1978:78)

(33a) shows that the combination of complements DP + DP – *Marie* 'Mary' + *ce lait* 'this milk' - leads to ungrammaticality. In (33b) and (33c) however, the DPs *ce lait* 'this milk' and *Marie* 'Mary' are followed by a PP, *à/par Marie* 'to/by Mary' and *dans cette tasse* 'in this cup' respectively, and both sentences are fine. When *ce lait* 'this milk' is replaced by *de ce lait* 'of this milk', we observe that the judgements are the same as in (33a-b):

- (34) a. \* J'ai fait boire Marie de ce lait. I have made drink Mary of this milk  
 b. J'ai fait boire de ce lait à/par Marie. I have made drink of this milk to/by Mary  
 (Milner, 1978:78)

In (34a), the DP *Marie* 'Marie' is followed by *de ce lait* 'of this milk'. If the latter were a PP, the sentence should be fine, contrary to facts. Similarly, as (34b) is fine, *de ce lait* 'of this milk' cannot be a PP – the only acceptable combination in such constructions being DP + PP.

As for the interpretation of (34b), *de ce lait* 'of this milk' is clearly partitive, which contradicts the conclusion we reached in Section 2.2.1 that bare partitives are prepositional (see Section 3.1.3 for a potential step towards a solution).

*Du/des* 'of.the' constituents in subject positions and causative constructions show that the nature of these phrases is not prepositional. Additional data suggest that *du/des* constituents should be treated like indefinite DPs. This is what we could refer to as the 'traditional conception' of *du/des* 'of.the' (Frei, 1960). Let us turn to negation, *en*-pronominalisation and existential constructions (examples from Frei, 1960, mentioned in Kupferman, 1979:1-2). Consider (35):

- (35) a. Il a du papier. a'. Il n'a pas de papier.  
 he has of.the.masc. paper he NE has not of paper  
 b. Il a un papier. b'. Il n'a pas de papier.  
 he has a/one paper he NE has not of paper  
 c. Il a des papiers. c'. Il n'a pas de papiers.  
 he has of.the.pl. papers he NE has not of papers

(35) shows that in negative contexts (35a',b',c'), *papier* 'paper' is preceded by *de* 'of', whether preceded by *un* 'a' or *du/des* 'of.the' in the positive counterpart. With definite phrases, the definite article remains in negative contexts as in (36a', b'):

- (36) a. Il a le papier. a'. Il n'a pas le papier.  
 he has the paper he NE has not the paper  
 b. Il a les papiers. b'. Il n'a pas les papiers.  
 he has the.pl. papers he NE has not the papers

The choice of a pronoun also puts *du/des* 'of.the' on the side of indefinites:

- |         |   |     |   |
|---------|---|-----|---|
| (37) a. | Il a du papier.<br>he has of.the paper    | a'. | Il en a.<br>he EN has                         |
| b.      | Il a un papier.<br>he has a/one paper     | b'. | Il en a un <sup>12</sup> .<br>he EN has a/one |
| c.      | Il a des papiers.<br>he has of.the papers | c'. | Il en a.<br>he EN has                         |
| d.      | Il a le papier.<br>he has the paper       | d'. | Il l'a.<br>he it has                          |
| e.      | Il a les papiers.<br>he has the papers    | e'. | Il les a.<br>he them has                      |

(37a'-c') attest the pronoun *EN* – which will not be discussed here – whereas in (37d'-e') it is a definite pronoun that pronominalises *le papier* 'the paper' and *les papiers* 'the papers'. Here again, *du/des* 'of.the' behave like the indefinite *un*.

Finally, impersonal structures such as (38) support this conclusion.

- |         |               |              |                                 |
|---------|---------------|--------------|---------------------------------|
| (38) a. | Il est arrivé | une lettre.  | there is arrived a letter       |
| b.      | Il est arrivé | des lettres. | there is arrived of.the letters |
| c.      | Il est arrivé | du courrier. | there is arrived of.the mail    |
| d. *    | Il est arrivé | la lettre.   | there is arrived the letter     |
| e. *    | Il est arrivé | les lettres. | there is arrived the letters    |
| f. *    | Il est arrivé | le courrier. | there is arrived the mail       |

Existential constructions (38) only admit indefinite subjects. As *des lettres* 'of.the letters' and *du courrier* 'of.the mail' are grammatical in this context, we conclude that these constituents are indefinite.

If constituents introduced by 'partitive articles' can be indefinite DPs (DP in the sense of topmost functional projection dominating NP) as this section shows, the status and role of *de* 'of' in these cases has to be determined. The task is even more difficult in a framework where nominals have an articulated structure, in which DP can be split into different functional projections, as it has been proposed in the literature (Aboh, 2002; Ihsane & Puskás, 2001; Laenzlinger, 2002). This is the topic of Section 3.

### 3. THE ANALYSIS

#### 3.1. The part-of structure

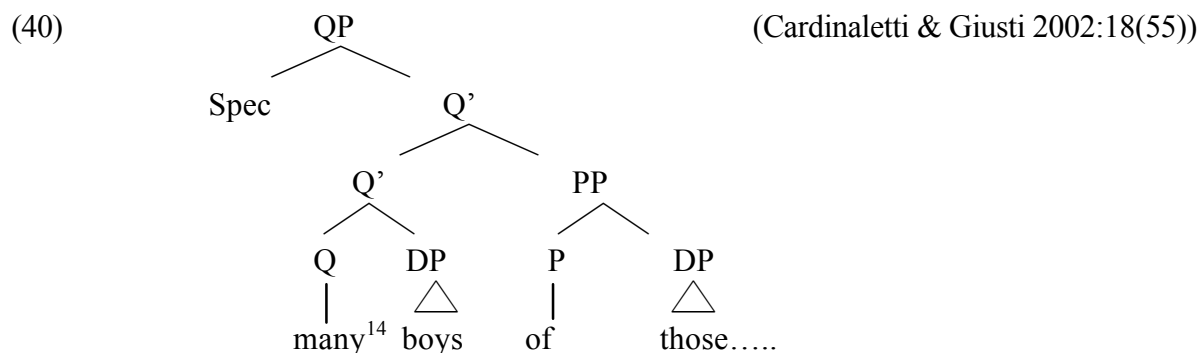
##### 3.1.1 Cardinaletti and Giusti's (2002) proposal

In this section we report Cardinaletti and Giusti's (2002) analysis of existential quantifiers, i.e. so-called 'vague numerals' (*many*, *few* and *some*) and cardinals, as they extend it to bare partitives. In other words, we turn to the part-of meaning of examples such as (1) repeated below for convenience:

- |      |               |             |        |                      |                       |
|------|---------------|-------------|--------|----------------------|-----------------------|
| (39) | Elle a mangé  | <b>du</b>   | gâteau | / <b>de la</b> tarte | / <b>des</b> biscuits |
|      | she has eateb | of.the.masc | cake   | / of the.fem tart    | / of.the.pl biscuits  |

<sup>12</sup> *Un* 'a/one' in this example is ambiguous between an indefinite article and a numeral. They are homonyms. (Milner, 1978:28)

Cardinaletti and Giusti (2002) build on their 1992 paper in which they proposed that the quantifier in existential constructions is a dyadic element which takes an indefinite DP, labelled quantitative DP, and a partitive PP as argument. This analysis is supported by the fact that the features on the DP and the occurrence of the PP are determined by the selectional properties of Q: the existential quantifier *many* for example can select a partitive PP (*of those...*) and a quantitative DP (*boys*) (40). According to Cardinaletti and Giusti, the former represents the set out of which Q picks up a subset, its restriction (*boys* in (40)). The structure they advocate is reported below<sup>13</sup>.



The idea that quantifiers are outside DP has first been proposed by Sportiche (1988), although his primary interest was not the structure of DP. That quantifiers are heads higher than DP has been independently proposed for Italian by Giusti (1991) and for Hebrew by Shlonsky (1991).<sup>15</sup> That the quantifier sits above DP accounts for data such as (41), in which *many* precedes the article. As (42) shows, the analysis extends to universal quantifiers such as *all*.

- (41) a. many a good student (Cardinaletti and Giusti, 2002:19(63))  
 b. many another man

- (42) a. all the good students (Cardinaletti and Giusti, 2002:19(64))  
 b. all the other men

The internal argument of the quantifier is postulated to account for examples in which the partitive PP co-occurs with a quantitative DP, as in (40) and (43).

- (43) a. Quatre peintures de celles qui avaient été volées ont été retrouvées.  
 four paintings of those that had been stolen have been found  
 (Milner, 1978:84)

<sup>13</sup> In their paper, Cardinaletti and Giusti adapt this structure (c.f. 2002 :36) to make it compatible with Kayne's (1994) antisymmetry hypothesis and Chomsky's (1995) bare phrase structure hypothesis. For ease of representation we will stick to the structure reported in the text.

<sup>14</sup> When preceded by an article as in *the many children*, *many* is analysed as a quantitative *adjective* generated in the specifier of a projection dominated by DP (Section 2.3.3). We will not discuss such data here.

<sup>15</sup> Note that the fact that the quantifier precedes the (in)definite article as in (41-2) does not imply that it is 'outside' DP. It could sit in a quantificational projection which is part of the extended projection of NP in the sense of Grimshaw (1991). Cf. Section 3.1.2.

- b. Ho letto molti libri di quelli che mi avevi consigliato<sup>16</sup>.  
(I) have read many books of those that (you) to.me had advised  
(Cardinaletti and Giusti, 2002:29(96a))
- c. Celui des livres de Zola que j'ai lu.  
this.one of.the books of Zola that I have read  
(Milner, 1978:84)

The use of the pronoun *celui* 'this.one' in (43c) shows that the quantitative DP is phrasal (i.e. not just a head as *boys* in (40), *peintures* 'paintings' in (43a) and *libri* 'books' in (43b) could suggest). When there is no overt determiner as in (40) and (43a,b), Cardinaletti and Giusti (2002:20) assume that D is filled with a null determiner (44a):

- (44) a. [QP [Q many] [DP [D  $\emptyset$ ] [ ...[NP men ]]]]  
b. [QP [Q many] [DP [D a ] [ ...[NP man ]]]] cf. (41a)

Let us turn to the partitive phrase. Abney (1987) discusses partitive PPs in comparative and superlative constructions. He proposes that the partitive PP is the complement of an empty N (1987:344). Assuming that the partitive phrase in such constructions is parallel to the one occurring with quantifiers (Bresnan, 1973; Milner, 1978), Cardinaletti and Giusti give two arguments against Abney's position (2002:16-17). The first one is that it is quite improbable that only empty Ns can select a partitive PP. In some contexts the partitive PP can co-occur with overt lexical nouns (45a,b). However, when a determiner precedes the quantifier the sentence is ungrammatical, whether the noun is overt or not (45c,d).

- (45) a. the best books of those you lent me  
b. many books of those you lent me  
c. \* the many books of those you lent me  
d. \* the many of the books you lent me  
(Cardinaletti and Giusti, 2002:16-7(52))

In (45c,d), where the quantifier is not a Q, i.e. a head dominating DP, but an adjective (cf. fn. 14), the partitive PP is ungrammatical, strongly suggesting that the partitive PP 'depends on' the quantifier. In other words, the partitive PP is selected by the quantifier.

The second argument against the selection of the partitive PP by the noun is that the partitive PP and the N do not form a constituent, and therefore the PP cannot be the complement of the noun (47).

- (46) a. \* books of those you lent me, I've read only the best  
b. \* books of those you lent me, I've read only some

As the ungrammaticality of (46) shows, *books of those you lent me* is not a constituent. If it were, it should be possible to prepose it, contrary to facts.

Existential quantifiers do not always co-occur with an overt quantitative DP and a partitive phrase as (47b) illustrates.

<sup>16</sup> Note that in the French counterpart *livres* 'books' is preceded by *de* 'of' which has to be accounted for:

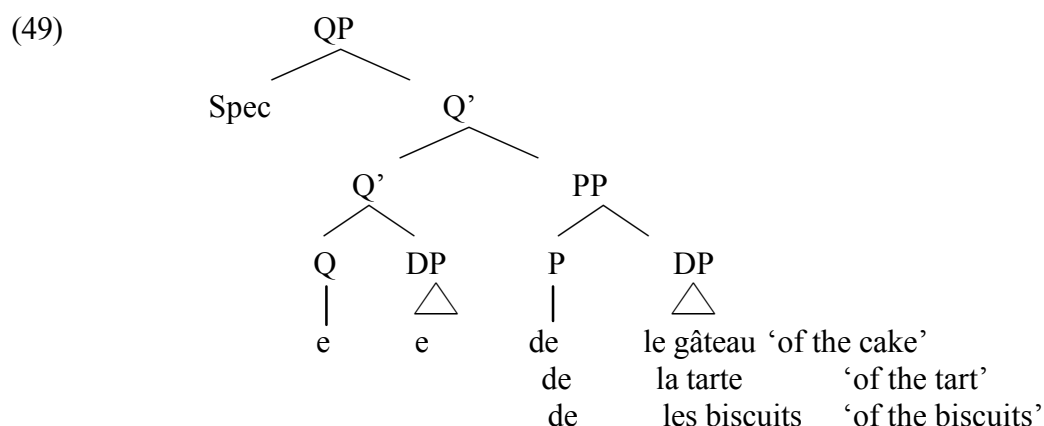
(i) J'ai lu beaucoup de livres de ceux que tu m'as conseillés.  
I have read many of books of those that you me have advised

- (47) a. Ho letto molti libri di quelli che mi avevi consigliato. (44b)  
 (I) have read many books of those that (you) to.me had advised  
 b. Ne ho letti molti [<sub>DP</sub> t ] di quelli che mi avevi consigliato  
 (I) NE have read many of those that (you) to.me had advised  
 (Cardinaletti and Giusti, 2002:29(96))

In (47a) both the quantitative DP and the partitive PP are overt, whereas in (47b) the quantifier only cooccurs with the partitive PP. Adopting a version of Baker's UTAH (Uniformity of Theta Assignment Hypothesis) (1988:46), Cardinaletti and Giusti (2002:29) assume that the arguments selected by a lexical head are always projected in the structure even if it is non-overtly. In other words, (47b) attests an empty category in the slot of the quantitative DP.

In addition to the quantitative DP, the Q can be empty. This is the case in the examples we are interested in here as (48) shows. The structure corresponding to (48a) (and (39)) is given in (49), where *de* 'of' is analysed as a preposition, which is consistent with the conclusion we reached in Section 2.2.1.

- (48) a. J'ai lu  $\emptyset$  des livres. (Cardinaletti and Giusti, 2002 :39(133))  
 b. Ho letto  $\emptyset$  dei libri.  
 (I) have read of.the books 'I read some books'.



The empty quantifier corresponds to what Milner refers to as *élément indéterminé* 'undetermined element' (1978:77) or *élément non-spécifié* 'unspecified element' (1978:79), although this does not tell us what type of empty category it is.

Cardinaletti and Giusti motivate the obligatory presence of the empty quantitative DP in (48b) with interpretation and agreement facts (2002:32ff.)<sup>17</sup>. In Italian non-overt postverbal subject positions can only have a generic human interpretation, characteristic of arbitrary empty pronouns (cf. Rizzi, 1986). The only reading of (50b) is thus that some human beings make the kind of nest in question, which is infelicitous if we except situations in which human beings make nests in their garden to attract birds.

- (50) a. (Questo tipo di nido), lo fanno molti uccelli migratori.  
 (this kind of nest), CL make many birds migrating  
 b. (Questo tipo di nido), lo fanno molti.  
 (Cardinaletti and Giusti, 2002:35(119a,b))

<sup>17</sup> Cardinaletti and Giusti (2002) also take NE-extraction as evidence for the presence of the internal argument of the quantifier. We will not examine these facts here as NE-extraction, as well as EN-extraction in French, remain very obscure to us (see Section 3.1.2 however for a brief discussion).

The interpretation of (50b) suggests that the empty DP selected by *molti* ‘many’ is a *pro*.

Let us turn to agreement. When the quantitative DP is empty, the quantifier still agrees with it for number (50a,b) or person (51c).

- (51) a. Una [ e ]            delle ragazze pensa che...  
           one.fem.sg        of.the girls    thinks that  
       b. Uno [ e ]            di noi pensa che...  
           one.masc.sg     of us thinks that  
       c. Molti [ e ]        di noi pensano che...  
           many            of us think    that  
       (Cardinaletti and Giusti, 2002:34(115))

In (51a,b), *una* ‘one.fem.sg’ and *uno* ‘one.masc.sg’ overtly agree with the empty category, interpreted as *ragazza* ‘girl’ and *ragazzo* ‘boy’ respectively and not with the PP which is plural. In (51c), *molti* ‘many’ is third person contrary to *noi* ‘us’ in the PP which is second person. Notice that the verb agrees with the quantifier (and the empty DP).

To summarise, Cardinaletti and Giusti’s (2002) analysis of existential quantifiers can be extended to bare partitives. It implies that *du/des* ‘of.the’ partitive constructions are in fact QPs with an empty head Q which selects a quantitative DP and a PP. In the next section, we explore an alternative in which *de* ‘of’ is not analysed as a preposition.

### 3.1.2. A non-prepositional analysis

Another way to look at bare partitives in French is to consider the hypothesis that *de* ‘of’ in these constructions is not a preposition. After all it is difficult to give a clear definition of what a preposition is and to find solid arguments to analyse a word as such. Of course the first question that comes to mind is ‘What about the evidence in Section 2.2.1 which seems to show that in partitive constructions *de* ‘of’ is a preposition?’. However, a closer examination of the evidence suggests that the conclusion we reached is flawed, mainly because it presupposes that *de* ‘of’ in *de quoi* ‘of what’ is a preposition and that *dont* ‘of.which’ is used with phrases introduced by the preposition *de* ‘of’.

PP-islands were also used to show that the *de*-phrases in partitives are PPs. Here again, the facts might be analysed differently if one considers that in general the examples involve two elements *de* ‘of’, as in (29) and (30a) repeated below as (52).<sup>18</sup> It seems to us that this does not imply that *de* ‘of’ is a preposition but rather that *de* ‘of’ cannot cross another element of the same type, which simply seems to be a violation of Relativized Minimality (Rizzi, 1990).<sup>19</sup>

- (52) a. \* C’est **de Zola** que j’ai lu **deux des livres**.  
           it is    of Zola    that I have read two of.the.pl books  
           (Milner 1978 :71)

<sup>18</sup> Cf. Kupferman (1999:45-6) for further considerations on the (non)-extraction of partitive *de*-phrases out of PPs.

<sup>19</sup> Quantitative examples attesting *beaucoup de* ‘a lot of’ suggest that these constructions involve an element *de* ‘of’ which differs from the one found in partitive constructions. Consider (i) where *de Zola* ‘of Zola’ can cross *de* ‘of’ without leading to ungrammaticality contrary to (52):

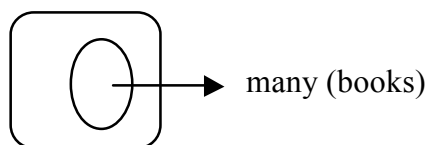
(i) C’est de Zola que j’ai lu beaucoup de livres. (13b)  
       it is of Zola that I have read many of books  
       (Milner, 1978:71ff)



- b. \* **Two of those reviews** have been reprinted **of Helen's first symphony**.  
(Cardinaletti & Giusti 2002:9)

Another remark about Cardinaletti and Giusti's analysis reported in the preceding section concerns their assumption that what they label PP is the set out of which the quantifier picks out its restriction. This implies that in *many of the books you lent me* and in *many books of those you lent me*, the set is the 'PP' *of the books you lent me* and *of those you lent me* respectively. However, the set out of which some books are retrieved is *the books you lent me* and *those you lent me*. The element *de* 'of' simply expresses the relation between the set and the subset and is not part of the set. Consider the following diagram, where the set *the books you lent me* is represented by the square and the subset by the oval.

(53)



the books you lent me

In order to deal with such considerations we adopt a structure where the traditional DP can be split into several discrete functional projections on a par with the clausal structure (Rizzi, 1997):

- (54) DP > TopP > FocP > DefP (Ihsane and Puskás, 2001)

The highest projection is labelled DP, for Determiner Phrase, in a general sense. In Hungarian for example it is used as an escape hatch for some possessive phrases. TopP stands for Topic Phrase and hosts elements that are specific, such as demonstratives for example. FocP stands for Focus Phrase and as the label indicates it hosts focalised elements. Finally, DefP stands for Definiteness Phrase. This projection is characterised by the feature [+/-definite].

Even if the names of the projections are of little importance, TopP and FocP are very specific. For our purpose more general labels will be adopted, following Starke (2004) (keeping our DefP though, Ihsane, 2000):

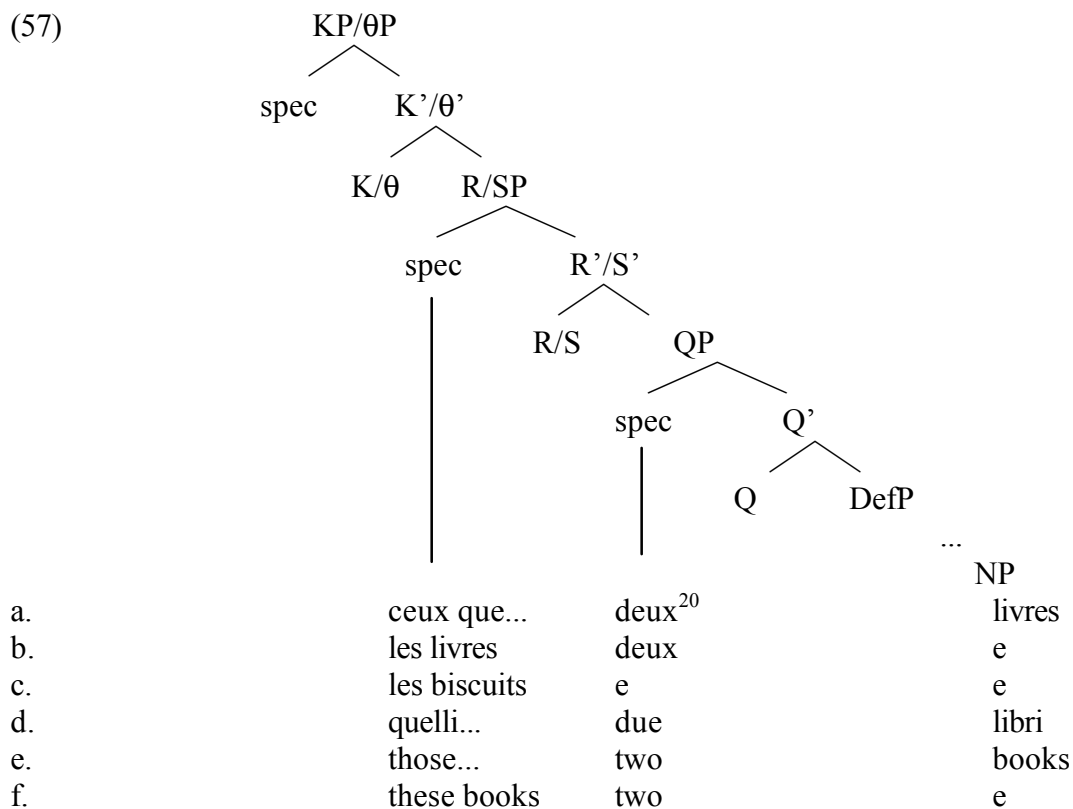
- (55) KP/θP > R/SP > QP > DefP

Starke's (2004) distinction between arguments with structural case, which are KPs, and those with inherent case, which are θPs, is not relevant here hence the KP/θP label of the highest projection in (55). R/SP stands for Range/Specificity Phrase and QP for Quantifier Phrase. The latter represents a whole class of elements, such as negation, focus, wh-elements, and quantificational adverbs.

The relevance of (55) for the partitive structures we are examining is that R/SP can be related to partitivity as mentioned by Starke (2004), as the *range* represents the set out of which something is extracted. What we propose is that in a structure like (55), the phrases representing the set out of which a subset is extracted occupy R/SP and that the whole QP, hosting the quantifier and the noun, which can be overt or not, moves to the specifier of the highest projection. The head of the latter projection is realised as *de* 'of' in French, a way of expressing the relation between the set and the subset, although the mechanisms involved

need to be refined. The D-structure and the S-structure of (56) are given in (57) and (58) respectively.

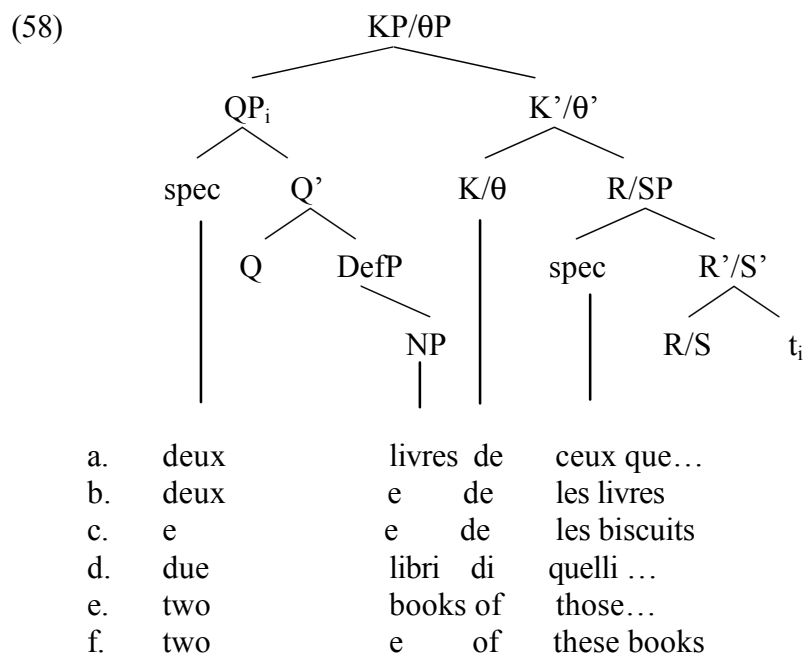
- |      |    |                                |                            |         |
|------|----|--------------------------------|----------------------------|---------|
| (56) | a. | deux livres de ceux que...     | two books of those that... | French  |
|      | b. | deux des livres                | two of.the books           |         |
|      | c. | des biscuits (part-of reading) | of.the biscuits            |         |
|      | d. | due libri di quelli ...        | two books of those...      | Italian |
|      | e. | two books of those...          |                            |         |
|      | f. | two of these books             |                            |         |



<sup>20</sup> For ease of representation, (57) and (58) do not take into account the fact that numerals are probably generated lower in the structure and that they move to QP, possibly through DefP. This would account for the indefinite reading of these phrases and for the impossibility for numerals to be followed by an article. Examples such as *les deux livres* ‘the two books’, where the numeral appears in its ‘adjectival’ use, also suggest that numerals are generated low in the structure (and that in such examples they remain in-situ). Hawkins (1983) for example, following Greenberg’s (1966) Universals, assumes that there is a universal base order of noun modifiers:

(i) Demonstratives > Numeral > Adjective > Noun

Following Cinque (1994), we also assume that noun modifiers are XPs generated in the specifier position of different functional projections, hence the quantified elements in Spec,QP in (57) and (58).



(58) does not present any of the problems of Abney's (1987) analysis mentioned by Cardinaletti and Giusti (2002) (cf. Section 3.1.1). The noun and the *de*-phrase do not form a constituent and the *de*-phrase does not depend exclusively on an empty N. (58) also takes into account the fact that *de* 'of' may not be a preposition and that it does not belong to the phrase representing the set.

Furthermore, a structure like (58) can account for the impossibility for French bare partitives to occur in subject positions (contrary to *du/des* 'of.the' constituents with an indefinite reading), as mentioned in Section 2.1. In subject positions, the empty quantifier postulated in (56c/59c) violates the ECP (Empty Category Principle) as it is not properly governed:

- (59) Empty Category Principle  
 ec must be (i) Theta-governed, or  
 (ii) Antecedant-governed (Stowell, 1982; Huang, 1983)

In (58) (and (57)), the empty category is not theta governed or antecedant governed. This is also the case at the level of the sentence. Even if one assumes the VP-internal Subject Hypothesis, the empty category inside KP/θP violates the ECP.

Another positive result of (58) is that, if partitive constructions do not involve a preposition as suggested, constructions such as (34), which were considered as problematic in Section 2.2.2, are not anymore. This example is repeated below:

- (60) a. \* J'ai fait boire Marie de ce lait. I have made drink Mary of this milk  
 b. J'ai fait boire de ce lait à/par Marie. I have made drink of this milk to/by Mary  
 (Milner, 1978:78)

Recall that causative sentences such as (60) must attest the combination of complements DP + PP. If *de ce lait* 'of this milk' in (60a) were a PP, the sentence should be fine contrary to facts. Similarly, as (60b) is grammatical, *de ce lait* 'of this milk' cannot be a PP. As the meaning of *de ce lait* 'of this milk' is clearly partitive, (58) is the structure we advocate. As

(58) is not a PP, it accounts for the ungrammaticality of (60a) and for the grammaticality of (60b).

Finally, (58) can also accommodate extraction facts, probably in an unexpected way. (58) suggests that what blocks the movement of *de Zola* ‘of Zola’ and *of Helen’s first symphony* in (52) is the presence of the QP in the specifier of the highest projection. In order to be extracted, *de Zola* ‘of Zola’ and *of Helen’s first symphony* would have to use that position as an escape hatch (contrary to quantitative examples such as *deux livres* ‘two books’ or *beaucoup de* ‘many of’, cf. fn. 19).

All these points are welcome results, suggesting that *de* ‘of’ in partitive constructions is not a preposition but a functional head in the extended projection of the noun.<sup>21</sup> There is one consequence of (58) however which seems problematic at first sight. In the structure advocated the ‘*de*-phrase’ is not a phrase, i.e. it is not a constituent. This is unexpected if *de ces livres* ‘of these books’ in (61) is extracted from KP/θP.

- (61) a. De ces livres, j’en ai lu deux.  
           of these books I EN have read two  
       b. J’en ai lu deux, de ces livres.  
           I EN have read two of these books

If (58) is on the right track, *de ces livres* ‘of these books’ cannot be extracted from KP/θP, not only because it is not a constituent but also because Spec, KP/θP is occupied.<sup>22</sup> Although the structure of examples such as (61) is unclear to us, there is no argument as far as we know for not analysing *de ces livres* ‘of these books’ as a type of apposition, for example.

Quantitative examples like (62) seem to support the idea that *de ces livres* ‘of these books’ in (61) does not correspond to *de ces livres* ‘of these books’ in *J’ai lu deux de ces livres* ‘I have read two of these books’.

- (62) a. J’ai lu trois livres.  
           I have read three books  
       b. J’en ai lu trois, de livres.  
           I EN have read three of books

In (62a), the object of the verb is the quantitative *trois livres* ‘three books’. In (62b), however, the extraposed constituent is not *livres* ‘books’ as would be expected if (62b) merely illustrated movement of the complement of Q. The *de* ‘of’ which appears in this example remains unaccounted for. The interpretation of (62b) suggests that *de livres* ‘of books’ simply gives some information about the type of things that has been read, although this does not tell us anything about the structure of the sentence.

An alternative which might be interesting to examine is to consider the *de*-phrases in (61) and (62b) as (kind of) topics, similar to *Jean* ‘John’ in (63).

<sup>21</sup> See Kupferman (1999:44) for another analysis along these lines. He proposes that in partitive constructions *de* ‘of’ realises the head Q, and that this head selects a DP. In quantitative structures however, Q selects an NP. Partitive and quantitative structures thus differ minimally. None of them involves an empty N(P), contrary to Cardinaletti and Giusti’s (2002) analysis and to the one discussed in the text. Some arguments against an empty N(P) in partitive structures are presented in Kupferman (1999:49-50) (for an overview of the arguments for/against the presence of an empty N(P) in partitives, see Martí Girbau, 2003).

<sup>22</sup> The extraction of EN is possible if it represents the quantitative DP (DefP in our terms) as Cardinaletti and Giusti (2002) suggest. This is because the extraction of a sub-part of the constituent in Spec, KP/θP should be unproblematic. For additional evidence for considering EN as the quantitative part of the structure see Kupferman (1999:41 ff.).

- (63) Jean, il est venu.  
John he is come

In (63), the clitic subject *il* 'he' is a 'repetition' of *Jean* 'John'. In the same vein, *EN* in (61) and (62) could be a resumptive pronoun. If it replaces the quantitative part of the structure as suggested by Cardinaletti and Giusti (2002) for example, it means that (61b) and (62b) are parallel in the sense that *EN* 'replaces' *ces livres* 'these books' and *livres* 'books' respectively and that *de* 'of' remains unaccounted for in both cases. As all this is very speculative, we leave the question for further research.

In this section, we have presented different elements which lead us to conclude that *de* 'of' in partitive structures, including bare partitives in French, is not a preposition but a functional head in the extended projection of nominals, expressing the relation between a set and a subset. The next section discusses the indefinite *du/des* 'of.the' construction.

### 3.2. The indefinite construction

In Section 2.2.2, several arguments in favour of an indefinite reading of *du/des* 'of.the' constituents were reported.<sup>23</sup> One of them was the grammaticality of *du/des* 'of.the' constituents in existential constructions which only admit indefinite subjects. (38) is repeated below for convenience.

- |      |      |               |              |                                 |
|------|------|---------------|--------------|---------------------------------|
| (64) | a.   | Il est arrivé | une lettre.  | there is arrived a letter       |
|      | b.   | Il est arrivé | des lettres. | there is arrived of.the letters |
|      | c.   | Il est arrivé | du courrier. | there is arrived of.the mail    |
|      | d. * | Il est arrivé | la lettre.   | there is arrived the letter     |
|      | e. * | Il est arrivé | les lettres. | there is arrived the letters    |
|      | f. * | Il est arrivé | le courrier. | there is arrived the mail       |

The objective of this section is to examine the syntactic structure of such nominals. In particular two crucial questions will be tackled. The first one concerns the role of *de* 'of' and the second one the role of the definite article, as *du/des* 'of.the' are uncontroversially bimorphemic, i.e. they are constituted of *de* 'of' + definite article (see Kupferman, 1979 for example).

#### 3.2.1. The *de* 'of' component

A first point to notice is that although (64b) seems to be the plural of (64a) this is not obvious as Milner (1978:28ff.) observes. Recall (37a-c), which are similar to the examples given by Milner:

- |      |    |        |              |     |               |
|------|----|--------|--------------|-----|---------------|
| (65) | a. | Il a   | du papier.   | a'. | Il en a.      |
|      |    | he has | of.the paper |     | he EN has     |
|      | b. | Il a   | un papier.   | b'. | Il en a un.   |
|      |    | He has | a/one paper  |     | he EN has one |

<sup>23</sup> The translation of *de* by *of* here is inappropriate and misleading. This is particularly clear in examples (65) and (66). *Of* would lead to a partitive reading, contrary to facts. In the absence of any better translation we will stick to the one in the text. More generally, note that although the English counterpart of French bare partitives also involves *of*, it is not the case for the counterpart of indefinite *du/des* 'of.the' constituents, which correspond to bare nouns in English.

- |    |   |     |                       |
|----|---|-----|-----------------------|
| c. | Il a des papiers.<br>he has of.the papers | c'. | Il en a.<br>he EN has |
|----|---|-----|-----------------------|

The prime examples illustrate EN-cliticisation. Although the details of the construction are not clear to us (and not relevant here), what is of importance is that in (65b') the numeral is stranded. In (65c') however there is no (overt) numeral, suggesting that *des* 'of.the' in (65c) is not the plural counterpart to *un* 'one' in (65b). If it were we would get \**Il en a des* 'he EN has of.the' contrary to facts. *Des papiers* 'of.the.pl papers' is rather parallel to *du papier* 'of.the.sg paper' in (65a), as the absence of a stranded numeral in (65a') shows.

The hypothesis we formulate below is based on examples such as (65a,b) and (66) below, which attests a verb of Type D/I discussed in Section 2. The question that arises is what the difference between (66a) and (66b) is, if *de la bonne viande* 'of the good meat' in the latter is indefinite as assumed here on a par with *une bonne viande* 'a good meat' in the former.

- (66) a. J'ai mangé une bonne viande.  
I have eaten a good meat
- b. J'ai mangé de la bonne viande.  
I have eaten of the good meat

The difference of interpretation between (66a) and (66b) is clear. In (66a), *viande* 'meat' is used as a count noun whereas in (66b), it is a mass noun. The question is what the impact of such a difference is on the syntax. Another way to describe the difference between (66a) and (66b) is that in the former, the quantity of meat that has been eaten is defined whereas in the latter it is not. The difference with partitive constructions discussed in Section 3.1 is that in (66b) we are not dealing with an undefined quantity of meat that represents a 'sub-quantity' of a bigger quantity of meat but with an undefined quantity of meat which represents the whole quantity of meat that is relevant. This subtle difference is probably partly responsible for the fact that partitive and indefinite *de/des* 'of.the' constructions are not clearly distinguished in the literature, as the following quote illustrates (from Gross, 1967, cited in Kupferman, 1979:3):

Nous nous intéressons plus particulièrement à certains indéfinis : l'indéfini pluriel: *des* (*de les*); les partitifs: *de la* (*de l'*) et *du* (*de la* ou *de l'*). Nous considérons que les trois détermineurs ont une nature identique: ils sont formés de la préposition *de* et d'un article défini générique (Artg) : nous les qualifierons tous trois de partitifs.

'We are more specifically interested in certain indefinites : the plural indefinite: *des* (*de les* 'of the'); the partitives: *de la* 'of the.fem' (*de l'*) and *du* 'of.the.masc' (*de la* or *de l'*). We consider that the three determiners are identical in nature: they are formed with the preposition *de* 'of' and with a generic definite article (Artg): we will qualify the three of them as partitive.'

The discussion of (66b) reminds us of clausal facts. Recall that the structure of nominals is (mostly) parallel to the structure of the clause (Abney, 1987; Szabolcsi, 1994 and many others). We would like to propose here that the difference between (66a) and (66b) can be compared to aspectual properties of the clause. Kupferman (1979:3) also noticed that the co-occurrence of *du/des* 'of.the' on the one hand and *un* 'a/one' on the other hand, and aspectual modifiers of the type *in x hours, for x hours* is restricted. Consider the examples he gives:

- (67) a. ?? Il a bu de la bière en deux heures.  
 he has drunk of the beer in two hours  
 b. Il a bu une bouteille en deux heures.  
 he has drunk a bottle in two hours  
 c. Il a bu de la bière pendant deux heures.  
 he has drunk of the beer for two hours  
 d. ?? Il a bu une bière pendant deux heures.  
 he has drunk a beer for two hours
- (68) a. ?? Il a mangé des pommes en une minute.  
 he has eaten of.the apples in one minute  
 b. Il a mangé une pomme en une minute.  
 he has eaten an apple in one minute  
 c. Il a mangé des pommes pendant une minute.  
 he has eaten of.the apples for one minute  
 d. ?? Il a mangé une pomme pendant une minute.  
 he has eaten an apple for one minute

Sentences in which *du/des* 'of.the' constituents co-occur with *for*-adverbials, (67c) and (68c), are better than those in which they co-occur with *in*-adverbials, (67a) and (68a). Similarly, sentences in which *une* 'a' constituents co-occurs with *in*-adverbials, (67b) and (68b), are better than those in which they co-occur with *for*-adverbials, (67d) and (68d). The use of *in*- and *for*- adverbials in (66) leads to similar results as (69) shows.

- (69) a. J'ai mangé une bonne viande en 10 minutes.  
 I have eaten a good meat in 10 minutes  
 b. ?? J'ai mangé de la bonne viande en 10 minutes.  
 I have eaten of the good meat in 10 minutes  
 c. J'ai mangé une bonne viande pendant 10 minutes.  
 I have eaten a good meat for 10 minutes  
 d. ?? J'ai mangé de la bonne viande pendant 10 minutes.  
 I have eaten of the good meat for 10 minutes

All the relevant DPs in (66-8) are indefinite. That aspectual properties of the clause do not depend on the (in)definiteness of the DPs it contains has also been demonstrated by Verkuyl (1993:71ff.). He gives the following examples:

- (70) a. Judith ate those three sandwiches.  
 b. Judith ate three sandwiches.  
 c. Judith ate sandwiches.  
 d. Judith ate that sandwich.  
 e. Judith ate a slice of bread.

(70a,b) and (70d,e) are terminative in Verkuyl's terminology (in opposition to durative). In other words the event is bounded, i.e. completed. Yet, *those three sandwiches* in (70a) and *that sandwich* in (70d) are definite whereas *three sandwiches* in (70b) and *a slice of bread* in (70e) are indefinite. The difference between singular and plural leads to similar observations: number does not have any influence on the aspectual properties of the event. Although the direct objects in (70a) and (70c) are plural, the former is terminative and the latter durative.

(70a) and (70d) on the contrary share the same aspectual properties, even if the direct object of the former is plural and the one of the latter singular.

What we propose is that *de* ‘of’ in indefinite *du/des* ‘of.the’ constructions is the head of a nominal aspectual projection. If the structure of nominals is (mostly) parallel to the one of the clause as assumed here, the nominal AspP should be close to the lexical NP. (71a) is a partial representation of the clausal structure.

- (71) MoodP > AgrP > NegP > TP > AspP > vP/VoiceP > VP  
(Alexiadou, Haegeman and Stavrou, undated ms, p.14)

Our purpose here is not to justify all these projections. However, (72) is a Greek example which supports the postulation of a clausal Aspect Phrase.

- (72) a. O Janis            diavaze            to vivlio.  
The John.Nom read.**IMP**:3sg the book.Acc  
‘John was reading the book’  
b. O Janis            diavase            to vivlio  
the John.Nom read.**perf**:3sg the booc.Acc  
‘John read the book’  
(Alexiadou, 1997:86, in Alexiadou, Haegeman, and Stavrou p. 14, bold ours)

As (72) shows, Greek has overt aspectual markings. In (72a), the reading is in progress whereas in (72b) it is finished and the verb forms differ. The idea of an aspectual phrase in nominals is not new. Alexiadou, Haegeman and Stavrou (p.27) show that at least event nouns attest such a projection. Consider their (63):

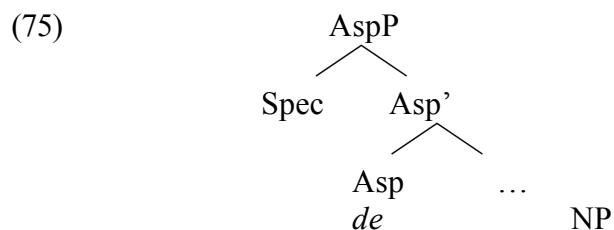
- (73) a. The examination of the papers in three hours is impossible.  
b. \* The exam in three hours is impossible.  
c. The teacher examined the papers in three hours.

(73a) shows that *examination*, which is considered as an event nominal, is parallel to the verb *examine* in (73c) in that it allows that same aspectual PP, *in three hours*. In (73b) however, the result noun *exam* and *in three hours* cannot co-occur. On the basis of such evidence the authors conclude that at least event nominals should project an Aspectual Phrase hosting aspectual modifiers. They also mention languages such as Greek and Polish which have overt morphological reflexes of this functional category. Their Polish example (68) is reported below:

- (74) a. ocenienie            studentow            przez nauczycieli  
evaluation.pf    the students.gen    by teachers  
b. ocenianie            studentow            przez nauczycieli  
evaluation-impf    the students            by teachers

The Polish nominal system displays the same distinction between perfective and imperfective aspect as the verbal system, thus bringing evidence for a nominal Aspectual Phrase. What we propose is that in French indefinite *du/des* ‘of.the’ constructions *de* ‘of’ realises the head of this projection:





As a consequence, it is the unbounded reading which is responsible for the 'undetermined quantity' denoted by indefinite *du/des* 'of.the' constituents (Section 2.1). This means that the latter do not involve an empty category, contrary to their partitive counterpart. Such an analysis accounts for the difference of grammaticality between the partitive and the indefinite constructions in subject positions. Recall that the former are not possible as subjects (Section 3.1.2), contrary to the latter illustrated in (31b) and (32b) (mentioned in Section 2.2.2 and repeated below as (76))

- (76) a. De la corde / de cette corde traînait par terre.  
 of the rope of this rope was.lying by ground  
 b. De l'eau /de cette eau boueuse recouvrait la route.  
 of the water of this water muddy was.covering the road

Interestingly, in Finnish bare plural and mass nouns, which correspond to indefinite *du/des* 'of.the' constituents in French, also lead to an unbounded reading of the event. In Finnish, unboundedness is characterised by partitive case (which therefore does not mark a part-of meaning). Indefinite bare plural or mass nouns get partitive case when 'they have a *quantitatively indeterminate* denotation' and accusative case if 'they denote a conventionally delimited set' (Kiparsky, 1998:5). Consider (77) from Kiparsky (1998:5-6(8c-f)):

- (77) a. Aki-lla on iso-t silmä-t / viikse-t  
 Aki-Adess have-3Sg big-PlAcc eyes-PlAcc / mustache-PlAcc  
 'Aki has big eyes / a mustache'  
 b. Aki-lla on iso-j-a silm-i-ä / viiksi-ä  
 Aki-Adess have-3Sg big-PlPart eyes-PlPart / mustache-PlPart  
 'Aki has big eyes / mustaches in his possession'  
 c. Vauva-lla on pitkä-t hiukse-t  
 Baby-Adess have-3Sg long-PlAcc hair-PlAcc  
 'The/a baby's hair is long'  
 d. Vauva-lla on pitk-i-ä hiuks-i-a  
 Baby-Adess have-3Sg long-PlPart hair-PlPart  
 'the/a baby has (some) long strands of hair' (on its head, in its hand, etc.)

The accusative case in (77a) implies inalienable possession. In other words the eyes and the mustache must be Aki's and there must be two of the former and one of the latter (speaking of 'normal' human beings in our world). (77b), in contrast, implies 'an indeterminate number of alienably possessed objects, such as glass eyes or anatomical samples in a vat, false mustaches (of which there must now be several), etc.' (Kiparsky:1998:6), hence the partitive case. Similarly, (77c) refers to the totality of hair belonging to the baby, whereas (77d) refers to some hair which could belong to the baby, or to loose strands of hair in the baby's possession whose number is indeterminate. Here again, the difference of case assigned to the

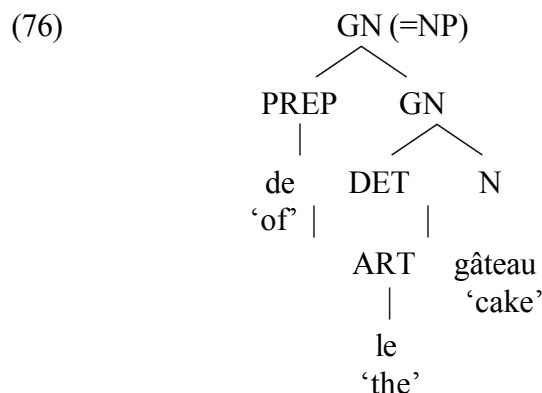
relevant objects depends on the (un)boundedness of the set: when the set is clearly delimited, it bears accusative case, and when the quantity is indeterminate, it bears partitive case.

On the basis of the evidence provided in this section, we conclude that *de* ‘of’ in indefinite *du/des* ‘of.the’ constructions is a functional head in the inflectional structure of nominals. It is used to mark aspectual properties of French nominals and more precisely unboundedness. In the next section, we turn to the second component of the element *du/des* ‘of.the’, namely *le/les* ‘the’.

### 3.2.2. The *le/les* ‘the’ component

One question that arises is the position and role of the ‘definite’ article in the data attesting the aspectual *de* ‘of’, as this element does not have a definite interpretation. Milner (1978:25ff.) treats *le/les* ‘the’ in *du/des* ‘of.the’ as a kind of generic determiner similar to the one found in *les chiens mordent* ‘the dogs bite’, corresponding to the English bare plural *dogs bite*.<sup>24,25</sup>

One possibility is to assume that the generic determiner is generated with the lexical noun (Milner, 1978:27), although this does not tell us the position of the determiner. Another possibility is to treat *le/les* ‘the’ in our indefinite constituents as non-specific (Kupferman, 1979:10). Again, this does not help us with their syntactical position in a nominal extended projection parallel to the clausal one (71). Kupferman’s structure (his 29) is reported below (glosses ours):



In Kupferman’s framework *de* ‘of’ is adjoined to the NP *le gâteau* ‘the cake’. A welcome result, which will have to be captured in an extended projection of type (71), is that nothing can intervene between *de* ‘of’ and *le/les* ‘the’:

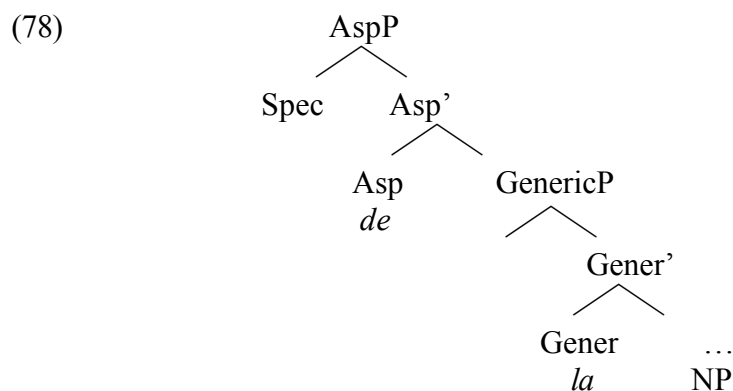
- (77) a. J’ai acheté de la farine. I have bought of the flour  
 b. \* J’ai acheté de bonne la farine. I have bought of good the flour  
 c. \* J’ai acheté de (un) kilo la farine. I have bought of (a) kilo the flour  
 d. \* J’ai acheté de beaucoup la farine. I have bought of a.lot the flour

To account for the adjacency of *de* ‘of’ and *le/les* ‘the’ one would have to stipulate that the latter sits in the projection immediately below AspP, and that nothing can fill spec,GenericP, maybe because of a constraint along the lines of the Doubly-Filled-Comp Filter.<sup>26</sup>

<sup>24</sup> Gross (1967) also considers this determiner as generic as the quote p.22 shows.

<sup>25</sup> Contreras (1986) and Casalegno (1987) show that mass or plural definites are used in Romance languages where bare singular mass or bare plural count nominals with a ‘kind’ or ‘generic’ reading are used in English.

<sup>26</sup> The reason of the incorporation of *le/les* ‘the’ to *de* ‘of’ with a masculine count noun has to be determined.



Another possibility would be to adopt Androutsopoulou and Echevarria's (2001) analysis. They propose that the generic determiner is an expletive determiner which is not generated in D but in a lower position. However, in the structure they advocate, the NP is no longer dominated by some functional material but sits in the specifier of the lowest functional projection. Consider (79) where DP\*1, DP\*2 and DP\*3 represent projections hosting nominal  $\phi$ -features.

(79) [ DP [D les<sub>i</sub>] ] [DP\*3 [D\*3 t<sub>i</sub>] ] [DP\*2 [AP bons] ] [DP\*2 t<sub>i</sub>] [DP\*1 [NP crayons] ] [D\*1 t<sub>i</sub> ]

In a structure like (79), our AspP would be located between DP and DP\*<sup>3</sup>. The reason is that the *du/des* 'of.the' component can be followed by pre-nominal adjectives as in *du bon pain* 'of.the good bread'. In addition, the presence of *de* 'of' in Asp would block the movement of *le/les* 'the' on its way to D in D\*<sup>3</sup>, thus accounting for the adjacency of the two elements. As head-movement must be cyclic, *le/les* 'the' cannot cross *de* 'of', without violating the HMC (Head Movement Constraint). The relevant part of the structure would be similar to (78), in the sense that AspP would immediately dominate DP\*<sup>3</sup>, hosting *le/les* 'the'.

Finally, there is a last possibility we would like to mention. It assumes that *le/les* 'the' is a grammatical marker signalling DefP, without implying a definite reading (Lyons, 1999). *De* 'of', the head of AspP, would head-move to one of the highest projections (to be determined) of KP/θP, and form a complex head *de-le/les* 'of-the' with Def on its way to this higher projection. Such an analysis would account for the adjacency of the two components of the *du/des* 'of.the' constituents. As for the moment we have no evidence supporting either of the analyses mentioned, although the last one seems attractive, we leave the question open.

#### 4. FURTHER DISCUSSION

Many issues have not been addressed in Section 3. Below we will only mention two of them. The first one is directly linked to our topic, bare partitives in French, whereas the second one concerns partitives in general. Both questions are thus to be related to the analysis presented in Section 3.1.2.

The first problem occurs with numerals. Consider (80).

- (80) a. manger trois de ces quatre pommes eat three of these four apples  
 b. manger trois des quatre pommes eat three of.the four apples  
 c. manger e des quatre pommes eat of.the four apples

(80a) is perfectly fine. (80b) is acceptable but improves with a relative clause as in *J'ai mangé trois des quatre pommes que tu as achetées hier* 'I have eaten three of.the four apples that

you have bought yesterday'. (80c) however is only possible if one assumes that a part of each of the four apples has been eaten. This means that in (80c) we are dealing with apple-parts whereas in (80a) and (80b) we are dealing with subsets of whole apples.<sup>27</sup> Nothing in our analysis of partitives predicts this result. A speculative explanation could be that the empty element quantifies over each individual of the set although the mechanisms involved and the reasons to differentiate overt quantifiers from non-overt ones have to be specified.

The second problem concerns modification. As the structure proposed in Section 3.1.2 postulates an empty N(P), dominated by several functional projections, the ungrammaticality of (81) is unexpected.<sup>28</sup>

- (81) \* Trois grandes de ces fenêtres étaient sales. (Kupferman, 1999 :37(26i))  
 Three big of these windows werer dirty

We have no solution to this problem and leave it to further research. The only remark we can make is that maybe the items in the set and the subset must be identical (Milner, 1978; Cardinaletti and Giusti, 1992; 2002:40ff.: cf. their lexical non-distinctness requirement). In (81), the set is *ces fenêtres* 'these windows', and not *ces grandes fenêtres* 'these big windows'. How this could have an impact on the syntax remains to be determined.

## 5. CONCLUSION

This paper examines the syntax of *du/des* 'of.the' constituents in French. We first establish the difference between the partitive and the indefinite reading. We then suggest that the former does not involve a PP contrary to what was claimed at first. The analysis we propose for such constructions involves movement of the QP to the specifier of the highest projection and the realisation of the head of that projection as *de* 'of'. As for the indefinite *du/des* 'of.the' constructions, we propose that the 'indeterminate' quantity implied does in fact denote an unbounded reading where *de* 'of' is the head of a nominal Aspect Phrase.

Many issues are still obscure. To understand *du/des* 'of.the' constructions, complex concepts and problems such as genericity, aspectuality, so called EN-extraction and bare nouns have to be better understood, in addition to questions strictly related to partitivity.

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<sup>27</sup> Example (i), involving the verb *lire* 'read', leads to similar results, i.e. that in (c) a part of each of the books has been read.

- |     |    |                                 |                                |
|-----|----|---------------------------------|--------------------------------|
| (i) | a. | lire trois de ces quatre livres | read three of these four books |
|     | b. | lire trois des quatre livres    | read three of.the four books   |
|     | c. | lire des quatre livres          | read of.the four books         |

<sup>28</sup> This problem does not occur in Kupferman (1999) as in his analysis *de* 'of' is the head of the QP, i.e. it is adjacent to the quantifier.

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