Partitive constructions and antisymmetry

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0.   Introduction

This paper is concerned with the analysis of partitive constructions, e.g. *three of his books*, in the framework of Kayne's (1994) Antisymmetry Theory.[1] We will argue that the partitive construction has a clausal structure (1), more precisely, a structure that comes close to the clausal structure that has been proposed by Hulk & Tellier (2000) for the possessive construction (2).

(1)   deux *pro*$_i$ [$_{FP}$ t$_i$ [$_F$ de]$_j$ [$_{PP}$ t$_i$ [$_P$ t]$_j$ ses amis]]
                 'two of his friends'

(2)   le livre$_i$ [$_{FP}$ t$_i$ [$_F$ de]$_j$ [$_{PP}$ t$_i$ [$_P$ t]$_j$ Jean]] (Hulk & Tellier 2000)
                 'John's book'

We will show that besides conceptual similarities between the partitive and the possessive construction, there is empirical evidence for the parallel clausal structures, viz. extraction facts. We will base our argumentation on data from French.

        The paper is organized as follows. Section 1 concerns the drawbacks of some previous non-clausal analyses of the partitive construction w.r.t. Antisymmetry Theory. In section 2, a first argument is given against a non-clausal analysis of the partitive construction that has been proposed by Kupferman (1999) and that is compatible with Antisymmetry Theory. We suggest that the partitive construction has a clausal structure, to be specified in the rest of the paper. We also show that agreement facts point to this direction. In sections 3 and 4, we defend a clausal analysis that resembles the clausal structure for the possessive construction proposed by Hulk & Tellier (2000). In section 5, we show how the agreement facts discussed earlier can be accounted for. Finally, in section 6, the results are summarized.

1.   Previous analyses of the partitive construction

The partitive construction has been analyzed within the framework of generative grammar in various ways. In Jackendoff's (1977) and Milner's (1978) analyses, the partitive construction is analyzed as an NP with an empty nominal head, whose complement is the partitive PP (3). Moreover, in Milner's analysis, the partitive PP is moved to this complement position. In the underlying structure it is the complement of the specifier in Spec,NP (4).

(3)   [$_{NP}$[$_{QP}$ trois] [$_{N'}$ ø [$_{PP}$ de ses livres]]]

(4)   [$_{NP}$[$_{QP}$ trois t$_i$] [$_{N'}$ ø [$_{PP}$ de ses livres]$_i$]]
                 'three of his books'

Movement to the right in (4) is not in line with Antisymmetry Theory. A problem both with (3) and with (4) is that, from a semantic point of view, the partitive PP seems to be an adjunct rather than a complement of N (see e.g. Grimshaw 1991 for the distinction between complements of the noun and adjuncts). However, if we analyze the partitive PP as an

adjunct, as in (5), antisymmetry is also violated, because right-hand adjuncts are not allowed in Kayne's theory.

(5) $[_{NP}[_{NP}[_{QP}$ trois $]$ $[_{N'}$ ø $]]$ $[_{PP}$ de ses livres $]]$

Note that the adaptation of these structures in a DP-framework does not solve these problems, because the PP would still be the complement of N (6)-(7) or an adjunct (8).

(6) $[_{DP}$ D° $[_{QP}$ trois $[_{NP}$ ø $[_{PP}$ de ses livres $]]]]$

(7) $[_{DP}$ D° $[_{QP}$ trois t_i $[_{NP}$ ø $[_{PP}$ de ses livres $]_i]]]$

(8) $[_{DP}$ D° $[_{QP}$ trois $[_{NP}[_{NP}[$ ø $]$ $[_{PP}$ de ses livres $]]]]]$

In Cardinaletti and Giusti's (1991) analysis, given in (9), the partitive PP is a kind of specifier to the right of Q', which is also problematic in the light of Antisymmetry Theory, because specifiers are not allowed on the right-hand side.

(9) $[_{QP}[_{Q''}[_{Q'}[_{Q°}$ trois $[_{NP}$ ø $]]]$ $[_{PP}$ de ses livres $]]]$

Consequently, we hypothesize that the analysis of partitives requires an alternative and more articulate syntactic structure.

2.   The simple complement analysis

An analysis of the partitive construction that is compatible with Antisymmetry Theory has been proposed by Kupferman (1999). In his analysis, the partitive construction involves a DP selected by a quantificational head, as in (10-11). Kupferman's analysis is reminiscent of other simple complement analyses that have been proposed in the literature, viz. the ones in which the partitive complement is a PP or KP (see e.g. Abney 1986, Battye 1991, Mallén 1992 and López 2000).

partitive
(10) $[_{QP}$ beaucoup $[_{Q°}$ de $[_{DP}$ mes livres $]]]$
           'many of my books'
(11) $[_{QP}$ trois $[_{Q°}$ de $[_{DP}$ mes livres $]]]$
           'three of my books'

In this way, the partitive construction minimally differs from the quantitative construction which involves an NP selected by Q° as in (12-13).

quantitative
(12) $[_{QP}$ beaucoup $[_{Q°}$ de $[_{NP}$ livres $]]]$
           'many books'
(13) $[_{QP}$ trois $[_{Q°}$ $[_{NP}$ livres $]]]$
           'three books'

Although these two constructions are structurally very similar under Kupferman's analysis, they behave differently w.r.t. agreement, which should be accounted for. If the

quantificational element is the numeral *un*, the DP in the partitive construction is plural (14), whereas the NP in the quantificational construction is singular (15). This suggests that in the partitive construction there is not simply syntactic agreement between the numeral and the complement of Q°, as in the quantitative construction. On the other hand, in both constructions, the numeral agrees in gender with the noun.

(14) [$_{QP}$ une [$_{Q°}$ de [$_{DP}$ mes soeurs]]]
        'one of my sisters'
(15) [$_{QP}$ une [$_{Q°}$ [$_{NP}$ soeur]]]
        'one sister'

With respect to the agreement with the verb there are also differences. In the partitive construction in (16) the verb always agrees with the quantifier.

(16) Un de mes livres a été retrouvé par Paul.
        'One of my books has been found back by Paul.'

As for the quantitative construction in (17), it is at first sight not clear whether the verb agrees with the quantifier or the noun. Doetjes & Rooryck (2000) observe however that in the quantitative construction in (18) the verb generally agrees with the noun and not with the quantifier. Their analysis of this quantitative construction is similar to Kupferman's in (12).

(17) Un livre a été retrouvé par Paul.
        'One book has been found back by Paul.'
(18) Une foule d'étudiants se sont succédé.
        'A crowd of students have come in one after the other.'

However, with respect to (18) they notice that the verb can also agree with the singular quantifier, *une foule*, as in (19).

(19) Une foule d'étudiants est dans le couloir.
        'A crowd of students is in the hallway.'

Doetjes & Rooryck claim that in this case *une foule* corresponds to the predicate of a small clause, and that the order *une foule d'étudiants* in (19) is the result of predicate inversion (cf. Den Dikken 1998).

(20) D° [$_{CP}$[$_{DP}$ une foule]$_i$ [$_{C°}$ d' [$_{SC}$[$_{NP}$ étudiants] t$_i$]]]
        'a crowd of students'

Doetjes & Rooryck do not discuss the partitive construction. However, since it is the first part of the partitive construction that determines verbal agreement (16), one might wonder whether a predicate inversion analysis as in (20) would also be conceivable for the partitive construction, a possibility which will be discussed in the next section.

3.   Towards a clausal analysis

A clausal analysis of the partitive construction with predicate inversion has been proposed by Martí i Girbau (1999) for Catalan, where D/PP is a kind of nominal variant of CP (see Kayne 1994).

(21) $[_{DP}$ molts$_i$ $[_{D/PP}[_{D/P°}$ de $[_{DP}$ els $[_{FP}[_{NP}$ llibres $[_{F°}[_{XP}$ t$_i$]]]]]]]]
            'many of the books'

However, since most of the quantifiers that appear in the partitive construction cannot generally figure as predicates, witness (22-23), a predicate inversion analysis seems highly implausible.[2]

(22)   *   Ce livre est un.
            'This book is one.'
(23)   *   Ces livres sont trois / plusieurs / beaucoup.
            'These books are three / several / many.'

Although it is our contention that the partitive construction does not involve predicate inversion, we support a clausal analysis on the basis of French data. We present several arguments in favor of a clausal analysis (without predicate inversion) in the following. These arguments will also be used as counterevidence against Kupferman's analysis in (11) and Martí i Girbau's analysis in (21).

First, according to Kayne (1994), *celui* can only combine with a (reduced) relative clause. The reason he gives is that *celui* is an XP in which no further material is possible.

(24)   *   celui jaune

Kayne states that presumably because of its internally defective character, the XP *celui* cannot be interpreted in isolation, that is, (25) is not grammatical.

(25)   *   Jean a vu celui.
            'Jean has seen the one.'

The XP *celui* can only be combined with a clause or a reduced clause.

(26)   celui que j'ai envoyé à Jean
            'the one that I have sent to John'
(27)   celui envoyé à Jean
            'the one sent to John'

This means, according to Kayne, that *celui* can only be interpreted in the specifier position of a clausal constituent, as illustrated in (28).

(28)   D° $[_{CP}$ celui$_i$ [que $[_{IP}$ j'ai envoyé t$_i$ à Jean]]]

The grammaticality of (29) suggests, in Kayne's view, that *de Jean* also involves a clausal structure, which has the D/P *de* as its head (30).

(29)   celui de Jean
            'the one of John'
(30)   D° $[_{D/PP}$ celui$_i$ $[_{D/P°}$ de $[_{IP}$ Jean t$_i$]]]

According to Kayne, D° is necessarily empty with *celui* in standard French. Sleeman & Verheugd (1998) propose an alternative analysis, presented in (31), in which *celui* selects a CP containing an empty category that moves to Spec,CP.[3]

(31)   [$_{DP}$ celui [$_{CP}$ *pro*$_i$ [$_{IP}$ t$_i$ envoyé à Jean]]]

We will motivate the analysis in (31) hereafter. The crucial point at this stage is that in all analyses, *celui* involves a clausal structure.

   Since *celui* can also figure as the first part of a partitive construction, as in (32), it is plausible to adopt a clausal analysis for the partitive construction as well.[4]

(32)   celui de ses livres que j'ai lu
              'the one of his books that I have read'
(33)   [$_{DP}$ celui [$_{CP}$[$_{FP}$ *pro* de ses livres]$_i$ [$_{C°}$ que [$_{IP}$ j'ai lu t$_i$]]]]

It should be noted that the presence of the second clause, *que j'ai lu* in (32), is necessary to make the use of *celui* in the partitive construction possible.

(34)   *   celui de ses livres

This is reminiscent of Kayne's (1994) analysis of possessive constructions that require the presence of a relative clause (35-36).

(35)   I found the (two) pictures of John's *(that you lent me).
(36)   [$_{D°}$ the [$_{CP}$[$_{DP}$ (two) pictures of John's]$_i$ [$_{C°}$ that [$_{IP}$ you lent me [t]$_i$]]]]

In (36) the determiner selects a CP, which contains the possessive construction, involving a clausal constituent, in its specifier position. The internal structure of the possessive construction is as in (37), where *John* occupies Spec,IP and *'s* corresponds to I°.

(37)   [$_{DP}$[two pictures]$_i$ [[$_{D°}$ of] [John ['s [t]$_i$]]]]

In a similar way, we propose that in (33), *celui* also selects a CP in which a clausal constituent, the partitive construction, moves to Spec,CP (cf. Kayne's 1994 analysis of stacked relatives).
   This analysis is in line with the conception of relative clause formation as the selection by a determiner of a clause containing a noun in Spec,CP, as in (38):

(38)   [$_{DP}$ le [$_{CP}$[$_{NP}$[livre]$_i$ [$_{C°}$ que [$_{IP}$ j'ai lu t$_i$]]]]]
              'the book that I have read'

Instead of the simple nominal predicate *livre* in (38), there is a more complex nominal predicate in Spec,CP in (33), viz. a nominal predicate in which a subset out of a larger domain is formed. The difference between the determiner *le* in (38) and the determiner *celui* in (33) is that *le* can also select an NP, instead of a CP with an NP in its specifier position:

(39)   [$_{DP}$ le [$_{NP}$ livre]]

Celui, on the other hand, cannot select a purely nominal domain, not even a complex one, as in (34). It exclusively selects a CP with a nominal domain in its specifier position. This nominal domain can be complex as in (33) or simple, as in (31). Note that the data in (32) and (34) provide another argument against the predicate inversion analysis presented in (21),

according to which *celui* would be the predicate of the embedded clause underlyingly. In this scenario, it is unclear how to account for the selection of the relative clause by *celui* in (33).

The combination of the partitive constituent with *celui* is the first argument in favor of a clausal analysis. It might be objected that Kupferman's analysis of the partitive constituent as a DP (see 11) can also account for the possibility of combining *celui* with a partitive constituent. In this analysis, the CP selected by *celui* would contain a DP in its specifier position.

(40)   celui de [$_{CP}$[$_{DP}$ ses livres]$_i$ [$_{C°}$ que [$_{IP}$ j'ai lu t$_i$]]]

A problem with this analysis, however, is that it is unclear how to account for the fact that the verb in the relative clause does not agree with *ses livres*.

(41)   celui de [$_{CP}$[$_{DP}$ ses livres]$_i$ [$_{C°}$ que [$_{IP}$ j'ai lu(*s) t$_i$]]]
         'the one of his books that I have read (MASC PL)'
(42)   celui de [$_{CP}$[$_{DP}$ ses livres]$_i$ [$_{C°}$ qui [$_{IP}$ t$_i$ a/*ont gagné un prix]]]
         'the one of his books that has won a prize'

In our analysis presented in (33), the verb in the relative clause agrees with *pro*, which agrees with *celui* after movement of *pro* out of the clausal constituent.

A second argument in favor of a clausal analysis is indirectly provided by the morphology of the first element of the partitive construction. In certain cases, the morphological form of the determiner in the partitive construction differs from its counterpart in quantitative constructions with a lexical noun. For instance, the determiner *quelques* in the quantitative construction with a lexical noun in (43), corresponds to *quelques-uns* in the partitive construction in (44). In our view, this means that there is an empty NP in the partitive construction. Notice that we also find the form *quelques-uns* in constructions like (45), which contain an empty category corresponding to the trace of the quantitative pronoun *en*.

(43)   quelques [$_{NP}$ livres]
         'some books'
(44)   quelques-uns [$_{NP}$ *pro*] de ses livres
         'some of his books'
(45)   J'en$_i$ ai lu quelques-uns [$_{NP}$ t$_i$].
         'I (of them) have read some.'

In the same way, *celui* is the form the demonstrative takes if it is followed by an empty category, as in (31), whereas the form *ce* is used if the demonstrative is followed by a lexical noun.

(46)   ce [$_{NP}$ livre]
         'that book'
(47)   ce [$_{CP}$ livre qui te plaît tellement]
         'that book that you like so much'

It is not clear how an analysis like Kupferman's accounts for the morphological variation. In the simple complement analysis, in which *ses livres* is the complement of Q, there is no position available for *pro* in constructions like (44). In the next section, we will propose a clausal analysis of the partitive construction in which *pro* is the subject of the clause, which is selected by a quantifier such as *trois* or *quelques-uns*, or by *celui*.

A third argument in favor of the claim that the partitive construction involves a clausal structure is provided by the following data taken from Milner (1978) and Corblin (1995).

(48)   Quatre (peintures) de celles qui avaient été volées ont été retrouvées
            'Four paintings of those that had been stolen have been found back.'
(49)   J'(en) veux une de celles-ci.
            'I (of them) want one of these.'
(50)   J'(en) ai vendu trois des plus beaux.
            'I (of them) have sold three of the most beautiful ones.'
(51)   J'(en) ai lu plusieurs des vôtres.
            'I (of them) have read several of yours.'
(52)   J'(en) ai vendu trois des bleus
            'I (of them) have sold three of the blue ones.'

If the partitive complement does not contain a lexical noun itself, the determiner can optionally be followed by a lexical noun (48) or the quantitative clitic *en* (49-52), which moves to a verbal host. In our view, these are the lexical realizations of the empty pronoun that we claim to be present in the partitive construction in (53).

(53)   Je veux une [$_{NP}$ *pro*] de ces pommes.
            'I want one of these apples.'

The data in (48)-(52) motivate the assumption of a clausal structure for the partitive construction in which either the quantitative pronoun *en* or the lexical noun is in the specifier position of a clausal structure, FP, with further movement of the clitic *en* to a verbal head:

(54)   J'en$_i$ veux une [$_{FP}$[$_{NP}$ t$_i$] de celles-ci].
            'I (of them) want one of these.'

Up to this point we have argued that the partitive construction should be analyzed as a clausal structure, selected by a determiner, with an NP in its Spec. In the next section we propose a more precise analysis of the second part of the partitive construction.

4.   The analysis of the clause

In this section we claim that there is a strong parallelism between partitive constructions and possessives. More precisely, we show that partitive constructions can be analyzed along the lines of various recent proposals concerning the syntax of possessive constructions, in particular the analysis made in Hulk & Tellier (2000).
        The syntactic similarity we assume for possessive and partitive constructions is based on the intuition that they are also similar from a semantic point of view: both can be paraphrased by predicative constructions of the BELONG type, with the order possessee-possessor, as shown in (55) and (56).

possessive
(55)   le livre de Jean   =   le livre est (=appartient) à Jean
            the book of John   the book is to John
            'John's book'   'the book is John's'

partitive
(56)   trois de ses livres   =   trois livres appartiennent à (l'ensemble de)
                                                 ses livres
            'three of his books'   'three books belong to (the set) of his books'

Inspired by Kayne (1994), Hulk & Tellier (2000) attribute a clausal analysis to the possessive construction in (55), see also Den Dikken (1998). But whereas Kayne's analysis is of the HAVE type (with the order possessor-possessee), as in (57) (cf. 30), Hulk & Tellier adopt a BELONG type of analysis (with the order possessee-possessor), as in (58). Furthermore, in Kayne's analysis *de* is a D/P head, whereas in Hulk & Tellier's view, *de* is the lexicalization of an empty preposition (with the BELONG reading) moving to a functional head. The possessive moves from Spec,PP via Spec,FP to Spec,NumP.

(57)   le [$_{D/PP}$ livre$_i$ [$_{D/P}$ de [$_{IP}$ Jean t$_i$]]]   (Kayne 1998)

(58)   [$_{DP}$ le [$_{NumP}$ livre$_i$ [$_{FP}$ t$_i$ [$_F$ de]$_j$ [$_{PP}$ t$_i$ [$_P$ t]$_j$ Jean]]   (Hulk & Tellier 2000)

We will follow Hulk & Tellier and adopt an underlying BELONG order for the partitive construction:

(59)   deux [$_{FP}$ F° [$_{PP}$ *pro* P° ses amis]]
            'two of his friends'

The BELONG order is motivated by the fact that underlyingly the quantifier seems to take the predicate *de ses amis* as its complement. This is also reflected in Milner's (1978) analysis, see (4), repeated here as (60). In Milner's analysis, the partitive complement is generated as the complement of the quantifier in Spec,NP in the underlying structure and subsequently moves to the complement position of the empty noun.[5]

(60)   [$_{NP}$ deux t$_i$ [$_{N'}$ ø [$_{PP}$ de ses amis]$_i$]]

The derivation we propose for the partitive construction is given in (61). Notice that it strongly resembles the derivation of possessives in (58).

(61)   deux *pro*$_i$ [$_{FP}$ t$_i$ F° [$_{PP}$ t$_i$ P° ses amis]]

        Our analysis is further supported by extraction facts. Possessive and partitive constructions show a similar behavior with respect to extraction, as shown by the following examples taken from Milner (1978) (see also Gaatone 1980).

possessives
(62a)   J'ai lu la première page du chapitre premier de ce livre.
             'I have read the first page of the first chapter of this book.'
(62b)   *   J'en ai lu la première page du chapitre premier.
             'I (of it) have read the first page of the first chapter.'
(62c)   *   De quel livre as-tu lu la première page du chapitre premier?
             'Of which book have you read the first page of the first chapter?'

partitives
(63a)   J'ai lu un des chapitres de ce livre.
             'I have read one of the chapters of this book.'
(63b)   *   J'en ai lu un des chapitres.
             'I (of it) have read one of the chapters.'
(63c)   *   De quel livre as-tu lu un des chapitres?
             'Of which book have you read one of the chapters?'

We also see that partitives clearly differ from quantitative constructions as in (64).

quantitatives
(64a)   J'ai lu six chapitres de ce livre.
                 'I have read six chapters of this book.'
(64b)   J'en ai lu six chapitres.
                 'I (of it) have read six chapters.'
(64c)   De quel livre as-tu lu six chapitres?
                 'Of which book have you read six chapters?'

The difference in grammaticality suggests that partitives are syntactically different from the quantitative construction in (64). In early generative approaches, the ungrammaticalities in (62-63) were attributed to a violation of the A-over-A principle (Kayne 1975) and later to the ECP (Kayne 1981). In Chomsky's Barrier-theory (1986), the extraction is ungrammatical because two barriers are crossed: DP is a barrier because it is not theta-marked by P and PP is a barrier by inheritance. In a clausal analysis, the ungrammaticality of (63b-c) can be accounted for as follows. We analyze (63) in the way Kayne (1994) analyzes stacked relative clauses: the partitive clause including the possessee moves out of Spec,PP to Spec,FP. The empty nominal moves out of the partitive clause in order to agree with the quantifier. Just like Kayne (1994: 101), we assume that this operation is movement to a functional head and consequently strands the second part of partitive clause (*des chapitres*). The possessor (*ce livre*) is the complement in PP. This is illustrated in (65):

(65)   un pro_i [$_{FP}$[$_{FP}$ t_i des chapitres]$_j$ [$_{F'}$ de [$_{PP}$ t_j ce livre]]]

The ungrammaticality of (63b-c) results from the fact that the movement of the possessor does not involve a constituent, but F'. In (64), the possessor alone can be moved by means of FP-movement, because Spec,FP will be empty after the movement of *chapitres* (cf. 58). In (65), however, Spec,FP is still filled by *des chapitres*, which will have to be moved along with the possessor.[6]

        We now turn back to the agreement data presented in section 2, and show how they can be accounted for in the proposed clausal structure for the partitive construction (61).

5. On agreement

We have shown that it is unclear how several differences in agreement between the partitive and the quantitative construction can be accounted for in the simple complement analysis. First, an account has to be given for the fact that the quantifier *un* agrees in number with NP in the quantitative construction, but not with DP in the partitive construction. In our analysis, underspecified *pro* only gets its gender feature from the DP that refers to the superset (66), just as in noun ellipsis constructions (67), cf. Corblin (1995: 144).

(66)   une [$_{FP}$ *pro* de mes soeurs]
                 'one (FEM.) of my sisters'
(67)   J'ai deux soeurs. Une *pro* est dentiste.
                 'I have two sisters. One (FEM.) is a dentist.'

Apparently, gender is a feature of N^o elements, such as lexical nouns like *soeurs* and non-lexical nouns like *pro* (which receive their gender features from a contextual antecedent). Number, however, is a feature of a superior functional projection (NumP or DP). Consequently, we

assume that it is the determiner *une* in (66) that transmits its number feature to *pro* after movement of *pro* out of FP.[7] Obviously, also gender agreement is checked between the determiner and the empty pronominal. This is reminiscent of determiner-noun agreement in relative clauses under Kayne's analysis:

(68)   la [CP soeur [C° que je préfère]]
           'the (FEM.) sister that I prefer'

In our analysis there is no direct relation between the quantifier and the partitive phrase, as in Kupferman's analysis. A subset is formed by means of *pro*, and the number of elements in this subset is indicated by the quantifier.

        Second, we have shown that in the simple complement analysis it is unclear how to account for the agreement of the verb in a relative clause with the first part of a partitive construction and not with the second part, see (41-42) repeated here as (69-70).

(69)   celui de [CP[DP ses livres]$_i$ [C° que [IP j'ai lu(*s) t$_i$]]]
           'the one of his books that I have read (MASC PL)'
(70)   celui de [CP[DP ses livres]$_i$ [C° qui [IP t$_i$ a/*ont gagné un prix]]]
           'the one one his books that has won a prize'

In our analysis, the verb in the relative clause agrees with *pro*, which agrees with *celui* after movement of *pro* out of the clausal constituent.

(71)   celui *pro*$_j$ [CP[FP t$_j$ de ses livres]$_i$ [C° que [IP j'ai lu(*s) t$_i$]]]
(72)   celui *pro*$_j$ [CP[FP t$_j$ de ses livres]$_i$ [C° qui [IP t$_i$ a/*ont gagné un prix]]]

This means that, indirectly, the determiner outside the small clause triggers the agreement with the verb. This also holds for the agreement between the partitive subject and the verb in the main clause in (73).

(73)   un *pro*$_j$ [FP t$_j$ de mes livres] a été retrouvé par Paul.
           'One of my books has been found back by Paul.'

The correct descriptive generalization seems to be that the determiner outside the small clause triggers the verbal agreement in the constructions under consideration. We assume that the small clause itself is defective in the sense that it has no phi-features and, consequently, it fails to determine the agreement of the main predicate. In Kupferman's analysis of the partitive construction, DP has phi-features and hence we would expect that it determines agreement with the verb, a prediction that is not borne out by the facts.

(74)   *   [QP un [Q'[Q° de] [DP mes livres]]] ont été retrouvés par Paul.
           'One of my books have been found back (MASC. PL.) by Paul.'

In quantitative constructions, on the other hand, which contain an NP instead of a clause, agreement with the verb is determined by the nominal element which is specified for phi-features under standard assumptions. We analyze the quantitative construction in the same way as Kupferman, see (75), and Doetjes & Rooryck (2000), see (76) (cf. 13 and 18).

(75)   [QP un [Q' Q° [NP livre]]] a été retrouvé par Paul.
           'One book has been found back (MASC. PL.) by Paul.'
(76)   [QP une foule [Q'[Q° d' [NP étudiants]]] se sont succédé.
           'A crowd (SG.) of students (PL.) have come in one after the other.'

We conclude therefore that agreement with a verb is determined by a subject containing a lexical NP with phi-features. Number features on a determiner can be transmitted to an empty category, which may be the specifier of a subject clause, as in our analysis of the partitive construction.

6. Conclusion

In this paper we have provided an analysis of the partitive construction in the spirit of Kayne's Antisymmetry Theory. As we have shown, previous analyses of partitives are problematic in the light of this theory. We have adopted a small clause analysis, which has also been proposed for possessive constructions like *le livre de Jean* in French.

Empirical evidence for a clausal analysis comes from partitive constructions involving the element *celui*, like *celui de ses livres que j'ai lu*, which we analyze as a stacked relative construction.

We have suggested that partitive and possessive constructions are also similar on a conceptual level. We have proposed that the clausal analysis adopted for both constructions is of the BELONG type. Furthermore, data from French involving extraction support our claim that partitives and possessives are syntactically similar.

Finally, we have provided an account for the fact that, in the partitive construction, the main verb agrees with the external determiner outside the small clause, whereas in the quantitative construction it agrees with the NP.

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[1] A preliminary version of this paper was presented at the Prep An 2000 colloquium at the University of Tel Aviv in September 2000 and at the annual meeting of the Linguistic Society of the Netherlands in February 2001. We would like to thank the audiences for their comments. We are also grateful to the two reviewers of an earlier version of this paper for their critical remarks and helpful suggestions.

[2] Notice that numerals and quantifiers can be used predicatively in constructions like *nous sommes trois / plusieurs* 'we are three / several'. However, these cases are severely limited, always requiring a pronominal subject referring to humans.

[3] A third possibility, suggested by one of the reviewers, would be that *celui* consists of two parts: *ce* 'that' and *lui* 'him'. *Ce* would select a CP and *lui* would move to Spec,CP:

(i) $_{DP}$[ce $_{CP}$[lui$_i$ $_{IP}$[t$_i$ envoyé à Jean]]]

We follow Corblin (1995), who analyzes *celui* as a "determiner without a noun". Corblin shows that "determiners without a noun" crucially differ from personal pronouns like *lui*, e.g. because the former allow the combination with a right-dislocated noun, whereas the latter do not.

(ii)   Je n'ai lu que celui-là, de livre.
           'As for books, I only have read that one.'
(iii)   *   Je ne connais que lui, d'étudiant.
           'As for students, I only know him.'

[4] We simply use the neutral label FP for the partitive clause, instead of CP or D/PP as in Kayne's analysis.

[5] Nowadays this latter operation is not permitted anymore. Moreover, we noticed that the partitive PP cannot be a complement of N. In our analysis the partitive PP (or rather the functional projection containing it), with the empty pronominal in its specifier position, is only a complement of the quantifier.

[6] Notice that in Hulk & Tellier's analysis, noun movement takes place to a specifier position, more specifically to Spec,NumP, as illustrated in (58). However, under this analysis, the whole partitive clause would be moved to Spec,NumP, vacating Spec,FP, so that nothing would block movement of the possessor in (63b-c).

[7] The hypothesis that *pro* gets its number features from the determiner also explains the ungrammaticality of **pro de mes soeurs est dentiste*. This example is ungrammatical due to the general assumption that DP has to be specified for number.