Number from a syntactic perspective: Why plural marking looks 'truer' in French than in Korean[*]
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1.   Introduction

This paper is a contribution to a general theory of grammatical number, based on comparative evidence from French and Korean, two languages whose noun phrases exhibit plural marking but otherwise differ in many respects: for instance, French has both definite and indefinite determiners which find no counterparts in Korean; and Korean, unlike French, is a generalised-classifier language. As witnessed by our bibliographical references, a number of linguistic works have already been devoted to the interesting properties of the Korean plural. Recent linguistic literature dealing, more generally, with plural marking is mostly written from a semantic perspective (cf. Schwarzschild 1996) in connection with the vast corpus of research on bare nouns, genericity, and the mass/count distinction. In this study we shall approach the issue from a morphosyntactic perspective – attempting to derive from morphosyntax the distributional and semantic similarities and discrepancies between the French and Korean plural markers. We shall first (section 2) briefly show how plural marking may seem less 'genuine' in Korean than it does in French, due to its apparent optionality, and shall argue (section 3) that Chierchia's (1998) semantic theory does not satisfactorily account for the observed data. Using French-Korean comparison, we shall show (section 4) that French plural marking actually exhibits the same apparent optionality as its Korean homologue, with similar semantic effects, and we shall propose a syntactic analysis in keeping with the distributional and semantic data. We shall then (section 5) focus on the French-Korean contrasts, which we shall propose to derive from the fact that the Korean plural marker *deul* (unlike the French plural) triggers a *rigidity* effect, a discrepancy we shall in turn correlate with the inflectional vs. noninflectional nature of the French and Korean plural markers.

2.   The issue

2.1.   Where the Korean and French plurals look different

Korean has a plural marker transcribed below as *deul*[1], which occurs for instance in the external argument of (1a). What makes this morpheme peculiar for an English or French speaker is that it may also fail to appear in such examples as (1b) :

(1)a. *manheun*   *hagsaeng*   *-deul*   *-i*   o   -ass   -da.
        many   student   PL   NOM   come   PST   DEC
        'Many students came.'
   b. *manheun*   *hagsaeng*   *-i*   o   -ass   -da.
        many   student   NOM   come   PST   DEC
        'Many students came.'
        [adapted from Kang (1994 :10); transcription our own, cf. fn.1]

This pair of examples suggests that plural marking is 'optional' in a Korean noun phrase denoting a plural referent (cf. Roger-Yun 2002), or that Korean has two types of plural, one with and one without plural morphology (cf. Kwak 1996, 2003, who calls this latter type *bare-formed plurals*). In the French translations of (1), plural marking is obligatory, as shown by the ungrammaticality of (2b) :

(2)a. Il   est venu *beaucoup*   *d'*   {*étudiants/amiraux*}.
        it   came   a lot   of   student.PL/admiral.PL
        'Many students came.'
   b. *Il   est venu *beaucoup*   *d'*   {*étudiant/amiral*}.
        it   came   a lot   of   student /admiral

The semantic contrasts between Korean (3) and French (4) below further confirm that the plural markers have different distributions in these two languages :

(3)a. i   kape-ui   *uija-deul*-eun peulaseutig   i   -ne !
        DM   café GEN   chair PL TOP   plastic   COP   EXCL
        'The chairs (which are) in this café are made of plastic !'
   b. i   kape-ui   *uija*   -neun peulaseutig   i   -da.
        DM   café GEN   chair   TOP   plastic   COP   DEC
        lit. 'The chair of this café is made of plastic.'
        = 'The chairs of this café are made of plastic.'
(4)a. Les   chaises de ce   café sont   en plastique.
        DF.PL   chair.PL of DM.M café be.PRS.3PL   in plastic
        'The chairs of/in this café are made of plastic.'
   b. La   chaise de ce   café est   en plastique.
        DF.F   chair of DM.M café be.PRS.3SG   in plastic
        'The chair of/in this café is made of plastic.'

In (3a), the pluralised noun phrase *uija-deul* is construed as denoting a closed set anchored at T0 ('the chairs which happen to be in this café'), while only nonpluralised *uija* in (3b) allows a Kind reading denoting an open set ('whatever chairs may be found in this café'). The semantic effects

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associated with (4a) and (4b) in French seem somewhat reversed: the Kind reading is only available under plural marking in (4a), while nonpluralised *la chaise* in (4b) may only denote an extensional referent construed as a singleton.

2.2.   A semantic account: the Nominal Mapping Parameter

An interesting semantic theory developed by Chierchia (1998) and other scholars (cf. Kurafuji 2001 on Japanese) inspired by Carlson (1977) and Krifka (1995), predicts that the Korean-type plural should contrast with the French-type plural because Korean is a generalised-classifier language, while French is not.

The leading assumption is that in languages such as French, nouns are subdivided into so-called Count nouns, such as *étudiant* 'student', *cheval* 'horse', *livre* 'book', which combine with a cardinal without a classifier; and so-called Mass nouns, e.g., *eau* 'water', *bétail* 'cattle' or *sable* 'sand', which require a classifier or a measure noun when combined with a cardinal:

(5)a.   Marie cherche   trois   {étudiants /chevaux/livres}.
         Mary   look for.PRS.3SG   three {student.PL/horse.PL/book.PL}
         'Mary is looking for   three {students/horses/books}.'
  b.   *Marie cherche   trois {eaux   /bétails /sables }.
          Mary look for.PRS.3SG   three {water.PL/cattle.PL/sand.PL}
          'Mary is looking for three {waters/cattles/sands}.'
(6)a.   *Marie cherche   trois {individus   d'   étudiant /
         Mary   look for.PRS.3SG   three {individual.PL   of   student
          têtes   de cheval/volumes   de livre}.
          head.PL of horse/volume.PL of book}
  b.   Marie cherche   trois {bouteilles/litres}   d'eau   /têtes   de bétail/
         Mary look for.PRS.3SG three {bottle.PL/litre.PL}   of water/head.PL of cattle/
         {unités /sacs   } de sable}.
         {unit.PL/sack.PL}   of sand}.
         'Mary is looking for three {bottles/litres} of water/heads of cattle/{units/sacks}
         of sand.'

In Korean, on the other hand, all nouns require or at least accept a classifier when they combine with a cardinal, including those which mean 'student', 'horse' or 'book' (see Roger-Yun 2002 for a detailed description). Consequently, Korean is identified as a *generalised-classifier* language:

(7)a.   Minna-neun *se   (myong-ui) hagsaeng* -eul chodaeha   -yeoss-da.
         Minna TOP three   CL   GEN   student ACC invite   PST DEC
         Lit. 'Minna invited three individuals of student.'
         = 'Minna invited three students'.
  b.   Minna -neun *se   *(mali-ui)   eollu-mal*   -eul   chag -go   iss   -da.
         Minna TOP   three   CL   GEN   stripe horse   ACC   look for PROG EX   DEC
         Lit. 'Minna is looking for three {heads/units} of zebra.'
         = 'Minna is looking for three zebras.'

c.	Minna -neun	*se*	*(gwon-ui) tongwachaeg*	*-eul*		sa	-ss	-da.
	Minna TOP	three CL	GEN fairy-tale-book	ACC		buy	PST	DEC

Lit. 'Minna bought three volumes of fairy-tale book.'
= 'Minna bought three books of fairy tales.'

The contrast between (6a) and (7) has led some scholars (among whom Chierchia 1998, followed by Mizuguchi 2001) to the assumption that in a generalised-classifier language such as Korean all nouns have a mass-type denotation in the lexicon: in Chierchia's terms they denote *Kinds*, rather than *Objects,* and this he takes as a semantic primitive. The Kind-denoting nature of Korean nouns is empirically supported by such examples as (3b) , where the external argument (*i kape-ui uija* '(the) chair of this café') may indeed be construed as denoting a kind ('the open CHAIR class as it manifests itself at all times in this café').

It follows that the Mass/Count distinction, which is crucially relevant in French as exemplified by (5) and (6), is not relevant in Korean, as witnessed by (7). The assumed optionality of the Korean plural marker suggested by (1) and (3), contrasting with the non-optionality of its French homologue suggested by (2) and (4), is hence correlated with the different lexical denotations of nouns in Korean and French: generalised-classifier languages cannot have a 'true' plural since they have no Object-denoting nouns, i.e. no Count nouns.

Kurafuji (2001), who looks at Japanese, argues that Chierchia's theory correctly applies to non-human nouns, but should be slightly amended to incorporate the following two observations:
(i) classifiers are not thoroughly generalised in Japanese-type languages, as illustrated in Korean by (7a), where the classifier is optional with a [+human] noun;
(ii) Japanese-type languages do have plural morphology: however, the Japanese plural marker *tachi* only selects [+human] nouns.
Kurafuji's conclusion is that Japanese nouns basically have Kind denotations, as argued by Chierchia, but that [+human] nouns may be idiosyncratically construed as [+count]. Despite this small amendment, Kurafuji essentially accepts Chierchia's semantic approach to number, which parameterises the lexical denotation of nouns.

2.3. Problems

However, even if we should focus on [-human] nouns in keeping with Kurafuji's amendment, it is possible to show that Chierchia's theory does not correctly predict the distribution of plural marking in Korean. Example (3a), for instance, contains a pluralised [-human] noun phrase. And in the following Korean examples, we see that plural morphology on the BOOK noun phrase is required in (8), where the BOOK referent is preconstrued as plural, and disallowed in (9) where it is preconstrued as a singleton, exactly as in the English translations :

(8)	[Minna-neun	oneul-achim	-e	chaeg	se	gwon-	gwa
	Minna TOP	today morning	LOC	book	three	CL	and
	sinmun	han	bu-leul	sa	-ss	-da.]	
	newspaper	one CL	ACC	buy	PST	DEC	

'Minna bought three books and one newspaper this morning.'

a.	*Chaeg -deul*	-eun	naengjanggo	-wi	-e	noh-yeo	-iss	-da.
	book PL	TOP	fridge	top	LOC	lying	EX	DEC

'The books are on top of the fridge.'

b.   %*Chaeg*   -eun   naengjanggo -wi   -e   noh-yeo   -iss   -da.
      book   TOP   fridge   top   LOC   lying   ex   DEC
      'The book is on top of the fridge.'

(9)   [Minna-neun oneul-achim - e   chaeg han   gwon -gwa
      Minna TOP   today morning LOC   book one   CL   and
      sinmun   se   bu   -leul   sa   -ss   -da.]
      newspaper   three   CL   ACC   buy   PST   DEC
      'Minna bought one book and three newspapers this morning.'

a.   %*Chaeg*   -*deul* -eun   naengjanggo -wi   -e   noh -yeo   -iss   -da.
      book   PL   TOP   fridge   top   LOC   lying   EX   DEC
      'The books are on top of the fridge.'

b.   *Chaeg*   -*eun* naengjanggo -wi   -e   noh-yeo   -iss   -da.
      book   TOP   fridge   top   LOC   lying   EX   DEC
      'The book is on top of the fridge.'

These data are counter-evidence to the claim that Korean nouns such as *chaeg* 'book' have a Mass denotation in the lexicon. In (8) and (9), Korean *chaeg* seems to behave with respect to plural marking exactly as English *book* or French *livre* : if the preidentified BOOK referent is construed as a set of atomic entities, a pluralised noun phrase is called for. But if we cast aside Chierchia's Nominal Mapping Parameter, we must find an alternative explanation for the French-Korean contrasts exemplified in (1)-(2) and (3)-(4). To get a grasp on the apparent optionality of Korean plural marking, we shall first look at some French data which suggest a similar situation. We shall propose a syntactic account of this phenomenon in French and shall argue that it may be extended to the Korean 'bare-formed plurals' exemplified in (1b) and (3b). We shall then attempt to understand what draws apart the French and Korean plural markers.

3.   Towards a syntactic approach to number

3.1.   Plural optionality and Kind denotation in French

If plural marking should be viewed as 'optional' in such Korean examples as (1a,b), the same could be said about plural marking in French in at least two classes of examples respectively illustrated in (10) and (11) :

(10)a. *Le   panda* aime   le   bambou.
       DF.M   panda likes   DF.M   bamboo
       'The panda likes bamboo.'

b. *Les   pandas*   aiment le   bambou.
   DF.PL   panda.PL   like   DF.M   bamboo
   '(The) pandas like bamboo.'

(11)a. Achetez *ma   (délicieuse)   tomate   italienne* !
       buy   my.F (delicious.F)   tomato.F   Italian.F
       Lit. 'Buy my delicious Italian tomato.'

b. Achetez *mes (délicieuses)   tomates   italiennes* !
   buy   my.PL delicious.PL   tomato.PL Italian.PL[2]
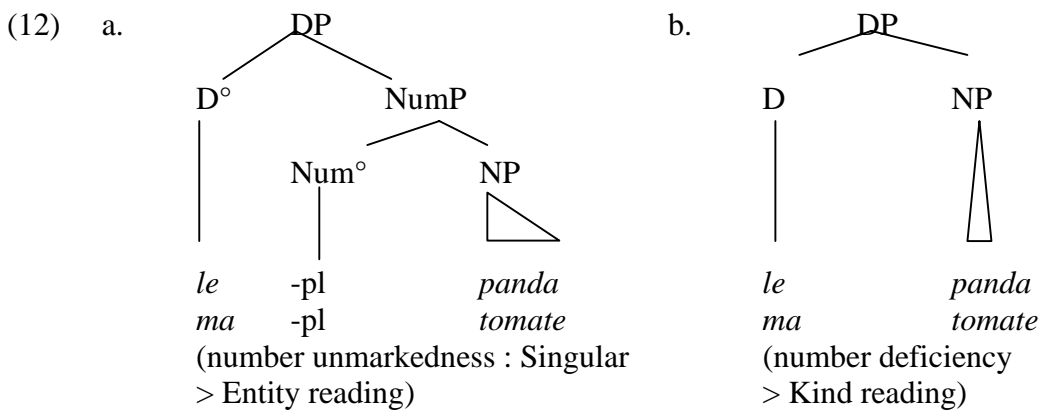   'Buy my (delicious) Italian tomatoes!'

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[2] Gender and number marking occur in complementary distribution on the French D head: when gender is morphologically specified, number is unmarked (*le*=M, *la*=F), and conversely (*les*=PL).

In both (10a) and (10b), the italicised subject may be read either as Entity-denoting ('definite') or as Kind-denoting ('generic'), and the same is true of the italicised object of (11a) and (11b). Under the Entity reading, the object noun phrase of (11b) *ma délicieuse tomate italienne* 'my delicious Italian tomato' is construed as denoting a single TOMATO item. Under the Kind reading, the sentence is felicitous regardless of the number of tomato-items which are actually available for sale (there may be one tomato for sale OR several, the sentence doesn't say).[3]

Under the definite/entity readings, plural marking appears as nonoptional in both (10) and (11), in the sense that the plural sharply contrasts semantically with the nonplural: *le panda* and *ma délicieuse tomate italienne* in (10a)-(11a) denote a single preidentified PANDA creature or TOMATO item, while *les pandas* and *mes délicieuses tomates italiennes* in (10b) and (11b) denote preidentified sets comprising at least two PANDA creatures or TOMATO items.

Under the Kind reading, on the other hand, plural marking may at first glance appear as optional in (10) and (11), since both the plural and the nonplural denote a class of atomic entities construed as <u>open</u>, i.e. unspecified for the number of atomic entities it comprises.

We shall however argue that plural marking is never semantically vacuous in French,[4] and that plural optionality is an illusion triggered by two factors : (i) the French-type plural is open to an intensional reading (involving an open set) – a property which fails to be matched by the Korean plural, as we shall see below ; (ii) the French-type nonplural is syntactically ambiguous between number unmarkedness and number deficiency,[5] as represented in (12), with number deficiency triggering a 'Kind' semantic effect :

(12)   a.

le   -pl   *panda*
ma   -pl   *tomate*
(number unmarkedness : Singular   (number deficiency
> Entity reading)   > Kind reading)

Since the French-type plural is semantically intensional, and the nonplural may spell out number deficiency, it follows that both the plural and the nonplural may denote Kinds, thus creating the illusion of plural optionality. We shall however argue that the Kind denotations triggered by the plural and the nonplural are not semantically synonymous. We shall also provide empirical evidence in support of the idea that the Kind reading of (10a) and (11a) correlates with Number deficiency in syntax.

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[3] Interestingly, the ambiguity observed in French in (11a) does not obtain in the English example (i) , where the italicised noun phrase may only denote a single TOMATO item , even if it is uttered by a vegetable grocer:
(i) Buy my delicious Italian tomato.
This contrast between French and English would certainly deserve further probing.

[4] This assumption is independently made by Farkas & De Swart (2003), basing themselves on Hungarian.

[5] Independent evidence supporting this general idea is given in Zribi-Hertz & Mbolatianavalona (1999) and Zribi-Hertz & Glaude (to appear).

3.2.   Optional plural in French

Under its Kind reading, the object noun phrase of (10b) involves an unspecified, open quantity of separate TOMATO items. A very similar semantic interpretation is productively available for the italicised object of such examples as (13), which may either denote an unspecified, open quantity of atomic instances of the Kind (let us call this the *Collective* effect), or a referent reduced to a mass of continuous matter — let us call this the *Pulp* effect, involving what Link (1983) calls *grinding* of the referent:

(13)a. On   trouve toujours *de la*   *Granny Smith* dans   ce   marché.[6]
       one   finds   always   *de* DF.F   Granny Smith in   DM.M   market
       Lit.'One always finds Granny Smith apple on this market.'
       (i) 'One always finds Granny Smith apple mush on this market.'
       (ii) 'One always finds Granny Smith apple produce on this market.'

  b. Il   y   avait   *du*   *chien* partout.
      it   LOC   had   *de*.DF.M   dog   everywhere
      Lit.'There was dog everywhere.'
      (i) 'There was dog pulp everywhere.'
      (ii) 'There were dog creatures everywhere.'

  c. Il   y   avait   *du*   *clébard*   dans   tous   les   coins.
      it   LOC   had   *de*.DF.M   mutt   in   all   DF.PL   corners
      Lit. 'There was mutt all over the place.'
      (cf. (12b))

  d. Il   y   avait   *du*   *maire* dans   tout   le   quartier.
      it   LOC   had   *de*.DF.M   mayor in   all   DF.M   neighbourhood   (i)
'There was mayor pulp all over the neighbourhood.'
      (ii) 'There were mayor creatures all over the neighbourhood.'

  e. Il   y   avait   *du*   *flic* partout.
      it   LOC   had   *de*.DF.M   cop   everywhere
      (i) 'There was cop pulp all over the place.'
      (ii) 'There were cop creatures all over the place.'

In each of these sentences, the Pulp and Collective readings are both productively available for the italicised noun phrase . Under the Pulp reading, the APPLE, DOG, MAYOR or COP referent is construed as a mush/a stew/a liquid. The Collective reading, thus labelled under analogy with so-called *collective nouns* (e.g. *cattle, furniture*, etc.),[7] does not involve liquefaction, but only a blurring of the atoms which constitute the Kind : under the Collective reading, the COP referent in (13e) is construed as a group of indistinct COP entities. The Collective reading is stylistically marked in French: it either pertains to the language of trade (as explicit in (11a) and (13a), which involve vegetable produce available for sale) or it has a derogatory flavour, enhanced in (13c) and (13d) by the slang lexicon: *clébard* ('mutt'), *flic* ('cop'), rather than standard *chien* 'dog' and *policier* 'policeman'). Take (13b): the Pulp reading (*du chien* = 'dog mush') is available in any type of communicative context;   the Collective reading (*du chien* = 'an unspecified quantity of DOG

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[6] We leave unglossed the morpheme *de* which partakes in the French determiner system. *De* is an uninflected item which, combined with the definite determiner, gives rise to the so-called 'partitive' and 'indefinite plural' determiners : *de la*, *de le>du*, *de les>des*.

[7] Cf. Flaux (1999) on French *noms collectifs*.

entities') involves the construal of the referent as a set of separate but non-individualised dogs, which immediately suggests either a heap of dog produce available for sale (e.g. at a pet fair, considered from a pet-dealer's perspective), or a set of indistinct creatures forming a cattle-type throng (hence the strong pejorative effect with an animate or, worse, human referent). In spite of these special stylistic effects, the Collective reading is productively available in (13a) through (13e). Any noun denoting a concrete physical entity (thing, animal, human) productively allows both the Pulp and the Collective readings in the syntactic context exemplified in (13).[8]

Note, however, that what triggers the Pulp and Collective effects in (13) is not the partitive marker *de*. This is shown by (11a), where the Collective effect obtains though *de* does not occur, by (14), where the Pulp effect obtains though *de* does not occur, and by (15), where the Pulp and Collective effects do not obtain although *de* does occur:

(14)   *Le   panda* est recommandé   aux   estomacs sensibles.
         DF   panda is recommended   DAT.DF.PL   stomachs sensitive
         'Panda (meat) is recommended for sensitive stomachs.'

(15)a.   On   trouve toujours *des   Granny Smith* dans ce   marché.
         one   finds   always *de*.DF.PL   Granny Smith in   DM.M   market
         'One always finds Granny Smith apples on this market.'

   b.   Il   y   avait   *de nombreux {chiens/clébards}*   dans   la   ville.
         it   LOC   had   *de* numerous   dog.PL /mutt.PL   in   DF.F   town
         'There were a large number {dogs/mutts} in town.'

   c.   Il   y   avait   *des   maires*   dans   tout   le   quartier.
         it   loc   had   *de*.DF.PL mayor.PL   in   all   DF.M   neighbourhood
         'There were mayors all over our neighbourhood.'

   d.   Il   y   avait   *des   {policiers/flics}*   dans   tout   le   quartier.
         it   loc   had   *de*.DF.PL policeman.PL/cop.PL in   all   DF.M neighbourhood
         'There were {policemen/cops} all over our neighbourhood.'

The italicised subject *le panda* respectively triggers in (10a) and (14) the two semantic effects labelled above Collective and Pulp. On the other hand, the italicised noun phrases in (15) fail to exhibit both the Pulp and the Collective readings. The unavailability of the Pulp reading is immediately clear – none of these noun phrases allow us to construe their referent as a mush or a stew. In order to perceive the unavailability of the Collective reading in (15), consider the subtle semantic contrast between (13a) and (15a): if the addressee needs to make a huge apple pie and the speaker knows there is likely to remain only one Granny Smith apple at the market, (15a) is less truthful than (13a), for the plural specification on *des Granny Smith* in (15a) suggests that more than one Granny Smith apple should be available, while (13a) doesn't hint anything as to the available quantity of apple-tokens - it only means that the Granny Smith species should have *at least one* representative at the market, which the speaker assumes to be true. Furthermore, none of the

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[8] Our description departs from the idea that such nouns as *chien* 'dog', being +Count, cannot denote 'continuous referents', cf. : « Count nouns such as *chimpanzé* 'chimpanzee', *tabouret* 'stool', etc., are compatible with such determiners as *un* 'a(n)', *des* (indefinite plural), *les* 'the.PL', as well as with cardinals and indefinite adjectives (e.g. *quelques* 'some, a few', *plusieurs* 'several', etc.), but they cannot combine with partitive determiners (e.g. *du, de la*, etc.). » [translated from Kleiber 1994, p.12]. The assumption that any count noun may be *coerced* into a mass denotation is similarly based on the idea that such nouns as *dog* should be primarily, basically, canonically, lexically, preferably... associated with atomic ('count') entities. We believe this view to be incorrect from a *linguistic* point of view. That the noun *dog* should be more frequently associated with a +count, or a –count, referent, is an effect of our cultural habits regarding dog(s), whatever they may be.

italicised noun phrases in (15) trigger the special stylistic effects (trade language, derogatory massification) which typically correlate with the Collective reading.

Basing ourselves on the above data, we propose that the Pulp and Collective readings of French noun phrases are crucially correlated with number deficiency, as represented in (12b). The *de* noun phrases italicised in (13) and (15) in effect include Kind-denoting DPs headed by the definite article,[9] which are either pluralised (*les N*) and construed as intensional atomised sets, or number-neutral (*le/la N*) and construed as intensional nonatomised sets read as either Collective or Pulp. As suggested by Carmen Dobrovie-Sorin (p.c.), the so-called partitive marker *de* of French could be analysed as the spell-out of Chierchia's (1998) 'Up' operator, which converts Kinds into Properties — these two complementary semantic types being independent from number marking in a language such as French.

3.3. Korean 'bare-formed plurals' have a Collective reading

We next wish to argue that the so-called 'bare-formed plural' noun phrases of Korean exemplified in (1b) trigger the Collective-type Kind reading just described in association with some French nonpluralised DPs including the definite article (cf. (10a), (11a), (13)). This descriptive assumption is in keeping with the semantic literature discussing such examples as (1b). Song (1975), for example, considers a sentence similar to (1b), where the nonpluralised noun *hagsaeng* 'student' is construed as denoting a set of students : ' *Hagsaeng* 'student' in sentence [...] does not refer to a particular student but rather a category of status. It contrasts with faculty or staff, for instance'. Kang (1994), Kwak (1996, 2003) and Song (1997) also phrase the intuition that Korean 'bare-formed plurals' actually have a Collective-type Kind reading (which Kwak, following Link 1983 and Landman 1989 labels *group reading*). Kwak (1996) emphasises the fact that bare-formed plurals do not license a distributive reading, as witnessed by (15):

(15) *Hagsaeng   -i   gagja seonsaengnim -gge   jilmun -eul
       student   NOM   each   teacher   DAT   question ACC
       hae   -ss   -da.
       ask   PST   DEC
       Lit. 'The student each questioned a teacher.'
            [adapted from Kwak 2003 :8]

The ill-formedness of (15) in Korean may be compared to that of French (16a) or (16b):

(16)a. *Le   personnel   a   chacun interrogé   un   professeur.
        DF.M staff   have.PRS.3SG each   questioned   one.M teacher
        Lit. 'The staff each questioned a teacher.'[10]
   b. *Le   panda se   mord les uns les autres.
       DF.M panda REF   bites one another
       Lit. 'The panda bites one another.'

We propose the generalisation phrased in (17) :

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[9] For a discussion of French partitive *de*, see Kupferman (2003) and Zribi-Hertz (2003).

[10] The French example in (16a) is completely ungrammatical, more sharply so than its English translation which is judged as acceptable by some speakers. Unlike English, French does not allow the combination of a plural predicate with a collective subject, e.g. *My family were not happy about this, The staff have decided that...*, etc.

(17) Assumption I
      a. In French as in Korean, an argument noun phrase may be left <u>un</u>specified for
      number (i.e. may be *number-deficient* in syntax).
      b. Number-deficient noun phrases (represented in (12b)) typically allow
      a Pulp or Collective construal of their referent.

This claim (a variant of which was developed by Jun 1999) is in conflict with several assumptions which have been put forward in the linguistic literature. One of them is Chierchia's Nominal Mapping Parameter: under our own assumption, the lexical content of Korean *gae* 'dog' is roughly the same as that of French *chien*, neither noun is specified with respect to the count/mass distinction until it is merged in syntax, and the 'Collective' effect correlates with the number-deficient syntax sketched in (12b). In contrast with Kwak (1996, 2003), we propose that Korean's 'bare-formed plurals' are not plural, since they are not specified as plural at any level of grammatical representation: they are unspecified for number. Our assumption further leads us to discard Bouchard's (2003) idea that Number is a necessary ingredient in an argument noun phrase: we are on the contrary claiming that number deficiency is productively licensed in French as in Korean and triggers similar semantic effects in both languages. Focusing here on the Collective reading, we shall try to understand where the French-Korean contrasts lie.

4.   Number specification and number deficiency

4.1.   The Collective-read nonplural in Korean and French: a reminder

Leaving aside the Pulp reading of number-deficient noun phrases, let us concentrate on the Collective reading, which, as argued above, is available in both French and Korean, a point further exemplified by Korean (18) and (20) and their French analogues (19) and (21):

(18) [i   gage   -neun sweta -wa yangmal -eul   pa   -n   -da.]
      DM   store TOP   jumper and sock   ACC   sell   PRS   DEC
      'This store sells jumpers and socks.'
      sweta-neun   wis   -ceung -e   *yangmal*   -eun
      jumper TOP   top   floor LOC   sock   TOP
      alaes -   ceung-e   iss   -da.
      bottom   floor LOC   EX   -DEC
      Lit. '(The) jumper is upstairs and (the) sock downstairs.'
      = 'Jumpers are upstairs and socks downstairs.'

(19) [Ce   magasin vend   du   pull   et   de la   chaussette.]
      DM.M   store   sell.PRS.3sg   *de*.DF.M sweater and   *de* DF.F   sock
      'This store sells jumpers and socks.'
      Le   pull   est   en haut et   *la   chaussette*   en bas.
      DF.F   jumper   is   upstairs and   DF.F   sock   downstairs.
      Lit. 'The jumper is upstairs and the sock downstairs.'
      = 'Jumpers are upstairs and socks downstairs.'

(20) i   gage   -e   -neun   *saengjwi*   -ga   iss   -da.
      DM   store LOC   TOP   mouse   NOM   EX   DEC
      Lit. 'In this store there is (some) mouse.'
      = 'In this store there are mice.'

(21) Il y a   de *la*   *souris* dans ce   magasin !
      there is *de* DF.F   mouse in   this   store
      Lit. 'There is mouse in this store !'
      = 'There is some atomised instantiation of the MOUSE species in this store!'

In these examples, the nonpluralised italicised noun phrase is open to the Collective reading in both languages. In other contexts, however, the Collective interpretation seems licensed in Korean, but not in French. One such contrast appears above between (3) and (4) , another one is exemplified by (22)/(23):

(22) [i   haggyo-neun namnyogonghag   i   -da.]
       DM   school TOP   co-ed   COP   DEC
       'This is a co-ed school.'
       yeohagsaeng -eun   wis   -ceung -eseo,
       schoolgirl   TOP   top   floor LOC
       namhagsaeng -eun   alaes -   ceung-eseo   gongbuha   -n   -da.
       schoolboy   TOP   bottom   floor LOC   study   PRS   DEC
       Lit. '(The) female student studies upstairs and the male student downstairs.'
       = 'Female students study upstairs and male students downstairs.'

(23)   [Cette école est   un   établissement mixte.]
       DM.F school be.PRS.3SG   an   institution   co-ed
       'This is a co-ed school.'
       Toutefois,   *le*   *professeur femme* prépare   ses   cours   en haut
       however   DF   teacher   female prepares   their classes   upstairs
       et   *le*   *professeur homme*   en bas
       and   DF   teacher   male   downstairs
       (i) '(...) However, the female teacher prepares her classes upstairs and the male teacher
        prepares his downstairs.'
       (ii) * '(...) However, female teachers prepare their classes upstairs and male
       teachers downstairs.'

In this case the nonpluralised DPs *le professeur femme* ('the female teacher') and *le professeur homme* ('the male teacher') are naturally construed in French as Entity-denoting, i.e. as syntactically singular (diagram (12a)), rather than Kind-denoting, while their italicised analogues in Korean (22) may quite naturally be construed as Kind-denoting.[11] Under our own assumption phrased in (17), we have to understand why number deficiency associated with the Collective reading seems more restricted in French than it is in Korean. We believe that a part of the answer lies in the properties of the plural marker, which are not the same in these two languages.

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[11] According to our own intuitions, the Kind-reading however becomes possible in (i) below, where an epistemic modality has been inserted :
(i) Le professeur-femme doit préparer ses cours en haut, et le professeur-homme en bas.
This judgement, if correct, suggests that whatever factor makes the Kind-reading unnatural in (23) is not inherent to the noun phrase itself.

4.2.   The plural in French and Korean: where does the difference lie ?

4.2.1. Our proposal

Borrowing the notion of *rigidity* from Tovena & Jayez (1999), who draw their own inspiration from Fine (1995), we first propose the double assumption phrased in (24), and then provide empirical evidence to support it:

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(24)   <u>Assumption II</u>
       The French-type plural in a noun phrase does not trigger a *rigid* construal of the referent.
       The Korean plural marker *deul* in a noun phrase triggers a *rigid* construal of the referent.

This assumption runs against any theory claiming (cf. Kang 1994) that Korean *sagwa-deul* 'apple.PL' has the same semantic denotation as English *apples.* We on the contrary believe that the English plural is semantically similar to the French plural, and that *sagwa-deul* and *apples* therefore have different semantic contents. Following Tovena & Jayez (1999), we understand *rigidity* as involving an extensional denotation: a *deul*-noun phrase (hereunder: *deul-NP*), in Korean, is construed as denoting a closed set of entities, therefore it cannot be associated with an intensional class; the French plural, on the other hand, does not trigger a rigidity effect, i.e. it is compatible with an open, intensional reading. We believe that this important difference accounts for a series of distributional and interpretive contrasts between French and Korean pluralised noun phrases, and we shall argue below that it also sheds some light on the more restricted distribution of Collective-read nonplurals in French.

      The double generalisation proposed in (24) may be assessed with respect to three available theories contrived to account for the semantic contrasts between the Korean-type and the English-type plural markers. Kurafuji (2001), working on Japanese, argues that the plural marker *tachi* spells out both plural and definiteness, but is similar to the English plural as regards its plural semantics. Mizuguchi (2001:532) claims that 'Japanese plurals are functions that individuate a set into atoms, while English plurals are functions that form a set from atoms'. Kim (2003) claims that *deul*-NPs in Korean are semantically similar to plural noun phrases in English. The empirical evidence presented below seems to us to be globally in keeping with Mizuguchi's idea, but to run against the other two theories.

4.2.2. Empirical evidence
4.2.2.1.   Korean *deul* disallows an open Kind reading
      A first piece of empirical evidence in support of (24) is that Korean *deul*-NPs may not denote intensional Kinds, while French plurals can, as first exemplified by analytical generic sentences such as (25)-(26) :

(25)a. *pendeo-gom* -eun   poyudongmul i   -da.
     panda bear   TOP   mammal   COP   DEC
     'The panda is a mammal.'
  b. **pendeo-gom   -deul* -eun   poyudongmul i   -da.
     panda bear   PL   TOP   mammal   COP   DEC
     Lit. 'The (various) members of the panda species are mammals.'
(26)a. *Le   panda* est un mammifère.
     DF.M   panda is a   mammal
     'The panda is a mammal.'

b. *Les   pandas*   sont   des   mammifères.
   DF.PL   panda.PL   be.PRS.3pl   *de*.DF.PL   mammal.PL
   'Pandas are mammals.'

The main point here is the contrast between (25b), which is completely ungrammatical in Korean, and (26b), which is perfectly natural in French. The contrast between Korean (25b) and French (26b) also seems predicted under Mizuguchi's (2001) assumption that Japanese-type plural markers individuate sets into atoms while French-type plural markers form sets from atoms, if we should understand that 'individuating sets into atoms' involves a rigidity effect (the atoms being construed from an extensional set), while 'forming sets from atoms' involves an intensional effect (the set formed from atoms standing as an open class).

    Our description of (25) is at odds with Kim (2003: ex. (23a)), who claims that a *deul*-subject is compatible in Korean with a kind-level predicate, and illustrates this point with (27):

(27)   gonglyong   *-deul* -eun   myeoljong   -doe   -eoss   -da.   dinosaur
     PL   TOP   extinction   become PST   DEC   [Kim's gloss]
    'Dinosaurs became extinct.'   [Kim's translation]
    'The (various) members of the dinosaur species were eradicated.'[12] [our own transl.]

As hinted by the double translation, we believe that Kim's semantic account is incorrect, and that although the external argument may be described as 'kind-denoting' in (27), it is crucially read as extensional, i.e. as denoting a closed set (e.g. 'those dinosaurs which used to walk about our planet'), rather than an open class construed intensionally. We hope to make this point clearer below.

    In generic sentences such as (28), the *deul*-subject is acceptable in Korean (28a), as the plural subject in French (28b) :

(28)a. *pendeo-gom   -deul   -eun   julo   daenamu   -leul   meog-neun-da.*
    panda bear   PL   TOP   mainly bamboo   ACC   eat   PRS DEC
    (i) 'The pandas mainly eat bamboo.'
    (ii) 'The members of the panda species mainly eat bamboo.'
  b. *Les   pandas* mangent   principalement du   bambou.
    DF.PL   pandas eat   mainly   *de*.DF.M   bamboo
    (i) 'The pandas mainly eat bamboo.'
    (ii) 'Pandas mainly eat bamboo.'

However, Korean (28a) and French (28b) do not have the same semantic contents, as hinted by the tentative English translations. Korean (28a) generalises over a set of pandas which must be construed as extensional, both under the specific reading glossed in (28a-i) (preidentified set of pandas) and under the Kind reading glossed in (28a-ii) (the various members of this world's panda species). French (28b) may contrastively be read as a generalisation about the panda class construed as intensional, as glossed in (28b-ii). Suppose the speaker has just returned from a scholarly trip to China during which (s)he spent a month with two pandas, living in their tree and taking notes about their behaviour. In this pragmatic context, sentence (28a/ii) is not optimally felicitous in the zoologist's report to the Korean Zoological Society, because it implies that (s)he must have based

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[12] The morpheme *doe*, which Kim glosses as 'become', is a verbalising suffix which suggests that the extinction process was caused by some external, rather than internal, factor.

his/her generalisation on more than just two pandas. French (28b/ii), on the other hand, is optimal in the same pragmatic context, unproblematically suggesting that the zoologist has inductively generalised to the intensional panda species the eating behaviour of his/her two subjects of study. This contrast follows from (24) and is also in keeping with Mizuguchi's (2001) analysis of plural semantics.

We again disagree with Kim (2003), who gives (29) as a Korean generic sentence interpreted on a par with the author's English translation:

(29) Italia-salam -deul -eun myeonglangha   -da.
       Italy person PL   TOP cheerful   DEC
       (i) 'Italians are cheerful.'   [Kim's translation]
       (ii) 'The people of Italy are cheerful.'   [our own translation]

Here as above, we believe that the semantic content of Korean (29) is not accurately captured by Kim's translation, which incorrectly suggests an intensional construal of the ITALIAN referent. According to our own intuition, the occurrence of the plural marker *deul* in (29) forces us to construe the referent extensionally ('the (various) people of Italy'), rather than intensionally ('whoever is Italian').

4.2.2.2.   Korean *deul*-NPs disallow inalienable binding

Another interesting class of French-Korean contrasts illustrated in (30) involves noun phrases denoting inalienable plural body-parts :

(30)a. Minsu -neun *pal*   -eul deuleoolyeo -ss   -da.
       Minsu TOP arm   ACC raise   PST   DEC
       Lit. 'Minsu raised arm.'
       = 'Minsu raised his arm(s).'
    b. Minsu -neun *pal*   -deul -eul deuleoolyeo -ss   -da.
        Minsu TOP arm   PL   ACC raise   PST   DEC
        Lit. 'Minsu raised arms.'
        * 'Minsu raised his arms.'
        = 'Minsu raised the arms.'
(31)a. Marie a levé le   bras.
       Mary raised DF.M arm
       Lit. 'Mary raised the arm.'
       = (i) 'Mary raised the arm.' (ii) 'Mary raised her arm(s).'[13]
    b. Marie a levé   les   bras.
       Mary raised DF.PL arms
       Lit. 'Mary raised the arms.'
       = (i) 'Mary raised the arms.' (ii) 'Mary raised her arms.'

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[13] Note that in French (31a) read as inalienable, the nonplural bodypart nominal does not force the construal of the ARM referent as a singleton (cf. Guillaume 1919, Kayne 1975, Guéron *passim*, Vergnaud & Zubizarreta 1992, among others). The predicate *lever le bras*, literally 'to raise the arm', refers to a conventional gesture made by a member of a group to indicate that they wish to be allowed to speak. Under this reading, sentence (31a) may describe a body gesture actually involving both arms. French (31a) thus contrasts with our English translation *Marie raised her arm*, in which *her arm* must be construed as a singleton. French nonplural inalienable nominals interestingly share their number deficiency with their Korean homologues.

In both languages, the nonpluralised body-part object may be read as inalienable. The plural-marked body-part object, on the other hand, only allows an alienable reading in Korean (30b), while it may be construed as inalienable in French (30b). We take these data as an effect of the contrast phrased in (24), assuming that the inalienable reading of the body-part nominal crucially involves a binding relation and hence precludes any rigidity factor within the noun phrase.[14]

4.2.2.3.   Korean *deul*-NPs disallow narrow-scope readings
Contrary to Kurafuji's prediction regarding Japanese *tachi*, the Korean plural marker *deul* may occur in a noun phrase associated with a discourse-new referent. Like some French or English indefinite objects and unlike bare plural objects, Korean pluralised objects only take wide scope over sentence negation:

(32) Minna -neun *chaeg -deul* -eul   ilgji   -an   -ass   -da.
      Minna TOP   book PL   ACC   read   NEG   PST   DEC
      'Minna didn't read some books.'   [wide scope only]

(33)a. Marie n'   a   pas   lu   *certains livres.*   [wide scope only]
       Mary NEG   have.PRS.3SG   NEG   read   some.PL book.PL
       'Mary didn't read some books.'

   b. Marie n'   a   pas   lu   de   *livres.*   [narrow scope only]
       Mary NEG   have.PRS.3SG   NEG   read *de*   book.PL
       'Marie didn't read books.'

Whereas in Korean (32), the pluralised object only allows a wide-scope reading, French (33b) shows that plural morphology on the object does not preclude the narrow-scope interpretation. The semantic contrast between (33a) and (33b) in French is grounded in determiner selection, not in number specification.

Our semantic description of (32) again departs from Kim (2003), who describes the example reproduced in (34) as ambiguous between (34i) and (34ii):

(34) Cheolsu-neun *jeonjiin-deul*-eul   manna-go   sipeoha-n   -da.
      Cholsu TOP politician PL ACC   meet COMP   want   PRS   DEC
      (i) 'Cholsu wants to meet politicians.'
      (ii) 'Cholsu wants to meet the politicians.'
            [adapted from Kim (2003: ex. (25), translations his]

The interpretation glossed in (34i) incorrectly suggests that the italicised plural object, when construed as discourse-new, has narrow scope with respect to the modal operator. In our view, the narrow scope reading glossed in (34i) is only possible if *deul* <u>fails</u> to occur within the object. The *deul*-object has wide scope in (34) regardless of information structure, and the interpretation which (34i) attempts to capture would be more accurately glossed by *There are some politicians that Cholsu wants to meet*, where the indefinite-read object *jeonjiin-deul-eul* takes wide scope over the modal.

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[14] For the same general reason, a deictic determiner (unlike a pronoun-like determiner) blocks the inalienable reading (cf. Zribi-Hertz & Glaude to appear), as exemplified in French by (i) below, contrasting with (30b) above :
(i) Marie   a   levé   ces   bras.
    Mary   have.PRS.3SG   raised DM.PL arm.PL
    'Mary raised those arms.'

4.2.2.4.   Korean *deul*-NPs cannot be quantifier-bound
          Unlike French indefinite plurals, Korean *deul*-NPs cannot be read as plural-polarity items, in the sense of Spector (2002) – they cannot be licensed by event quantification or generic aspect:

(35)a. i   daehaggyo   -ui   gyosu   -deul -eun   jeonbu *negtai deul*-eul
          DM   university   GEN   professor   PL   TOP   all   necktie PL ACC
          mae   -go   dani   -n   -da.
          tie   COM   walk around   PRS   DEC
          lit. 'In this university, all professors walk around with several neckties tied (around their neck(s)).'
          = 'In this university, all professors wear several neckties.'
     b. Dans   cette   université,   tous les   professeurs   portent *des   cravates*.
          in   DM.F   university   all   DF.PL   professors   wear   *de*.DF.PL neckties
          'In this university, all professors wear neckties.'

In Korean (35a), the italicised *deul*-NP can only denote a rigid set, which triggers an interpretation under which each professor wears several neckties at once. Contrastively, French (35b) favours the pragmatically unmarked reading involving only one necktie at a time around each professoral neck.

4.2.2.5.   Korean *deul*-NPs never instantiate number agreement
          This restriction is exemplified by (35), contrasting with French (36):

(36)a. i   *salam -deul* -eun   *uisa*   i   -da.
          DM   person PL   TOP   doctor COP   DEC
          Lit. 'These people are doctor.'
          = 'These men are doctors.'
     b. *i   *salam -deul* -eun   *uisa   -deul* i   -da.
          DM   person PL   TOP   doctor   PL   COP   DEC
          Lit. 'These men are (several) doctors.'
(37)a. *Ces   hommes   sont   amiral.*
          DM.PL men   be.PRS.3PL   admiral
     b. *Ces   hommes   sont   amiraux.*
          DM.PL men   be.PRS.3PL   admiral.PL
          'These men are admirals.'

In Korean (36), the NP *uisa* 'doctor' in predicate position cannot exhibit plural marking on a par with the *deul*-subject. In French (37), predicate agreement is unmarkedly acceptable in such contexts.[15]

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[15] Predicate agreement is in our opinion obligatory in (37a), at least without further discourse context. Lack of plural agreement on French predicative nominals is however possible in some contexts, as pointed out by A. Kihm. According to our own intuitions, on such case is (i) below:
(i) Tous ces   hommes souhaitent devenir   {amiral/amiraux}.
     all   these   men   wish   (to) become   admiral/admirals
     'All these men wish to become admirals.'
As regards our present issue, the crucial observation in (36)-(37) above is that plural marking on the predicate is strictly impossible in Korean (36), while it is unmarkedly grammatical in French (37).

Contrary to the descriptive assumption put forward in this subsection, Korean *deul* has been claimed (cf. Lee 1991, Park & Sohn 1993) to spell out subject-agreement in such examples as (38a), contrasting with (38b):

(38)a. geu hagsaeng *-deul* -eun Storrs-eseo-*deul* gongbuha -n -da.
DM student PL TOP Storrs LOC PL study PRS DEC
'The students are studying in Storrs.'

b. *geu hagsaeng -eun Storrs-eseo-*deul* gongbuha -n -da. DM
student TOP Storrs LOC PL study PRS DEC
[adapted from Park & Sohn (1993), ex. (23b)]

In sentence (38a), the *deul* marker attached to the right of the locative phrase instantiates what some linguists have called the *Extrinsic Plural Marker* (EPM),[16] which appears within the predicate and, if on a noun phrase, on its right periphery (to the right of the Case marker) rather than inside it. Basing themselves on such pairs as (38), Park & Sohn (1993) have analysed EPM *deul* as a subject-agreement marker. Evidence in support of this idea is that EPM *deul* seems crucially licensed by a plural subject, as witnessed by the ungrammaticality of (38b), contrasting with (38a),[17] as well as by the contrast in (39) below:

(39)a. ø sugje *-deul* ha -yeoss -ni *-deul* ?
(you) homework PL do PST INT PL
(i) *'Have you (SG) done your homework ?'
(ii) 'Have you people done your homework ?'

b. ø sugje ha -yeoss -ni ?
(you) homework do PST INT
(i) 'Have you (SG) done your homework ?'
(ii) *'Have you people done your homework ?'

These examples illustrate a frequent use of Korean EPM, where it cooccurs with a null subject understood as denoting a plural referent. The contrast in (39) further suggests that the occurrence of EPM *deul* is <u>required</u> if the subject is read as plural.

The generalisation just hinted is however too strong, since a plural subject in no way automatically triggers the occurrence of EPM *deul*, whether this subject be overt, as in (1a), (8a), (27), (28a), or phonologically null, as in (40):

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[16] This type of plural marking has received various names in linguistic literature, e.g.: *pluractional marker* (Kwak 1996), *copy plural marker* (Kuh 1987, Lee 1991), *thematic particle* (Prost 1992), *agreement plural marker* (Park & Sohn 1993), *spurious plural* (Kim 1994), *non-nominal DEUL* (Yim 2002), and *extrinsinc plural marker* (Song 1997) – the term we are borrowing here. Some authors (e.g. Kuh 1986, Lee 1991, Prost 1992, Moon 1995) treat the noun-phrase-internal plural marker (*IPM*) and the extrinsic plural marker (*EPM*) as homonymous morphemes, but, following Baek (2002), we believe in the basic unity of *deul*, and that we should try and understand why the same morpheme may occur, as it does, either noun-phrase-internally, or noun-phrase-externally, triggering the observed semantic effects.

[17] Kim (1994) and Yim (2002) claim that EPM may occur with a nonplural subject, but we find all their illustrative examples sharply ungrammatical.

(40)   [sajang :]   - Kim gwajang   -gwa Lee gwajang   -eun
       [general manager :]   Kim head of department   and Lee head of department TOP
           yojeum   wae   an   boi - neun   -ga?
           nowadays   why   NEG see PRS   INT
     [General Manager] 'How come Mr Kim and Mr Lee are not seen around the office
       these days ?'

       [biseo]   -   ø Nyuyog   jijeom   -e   (*-deul)   chuljang
       secretary   New York branch   LOC   PL   trip
                           jung i -sibni   -da.
                           in   COP +HON   DEC
     [Secretary]   '(They) are visiting our New York branch.'

Furthermore, the fact that some morpheme within the predicate should be licensed by a plural subject does not prove this element to be a subject-agreement marker, since various predicate-internal expressions similarly select a plural subject without being agreement markers, e.g. English *one another, respectively, together*, and floating quantifiers:

(41)a. The {*child/*children*} sent owls to *each other*.
    b. The {*child/*children*} broke the spell *together*.
    c. Our {*only child/*two children*} *respectively* picked a blue and a red flying broomstick.
    d. Our {*son/*sons*} {*both/all*} bought new flying broomsticks.

The semantic effects associated with EPM *deul* are actually rather similar to those triggered by plural-subject-selecting adverbs and quantifiers. In (42b), for instance, EPM *deul* forces us to understand that the two characters sang and enjoyed themselves together, whereas this effect is absent from (42a), where EPM *deul* fails to occur:

(42)a. Chanu -wa   Minsu-ga   nolae -leul   sinnage -bull -eoss -da.
        Chanu and   Minsu NOM   song   ACC   have-fun sing PST   DEC
        'Chanu and Minsu had fun singing.'
    b. Chanu -wa   Minsu-ga   nolae -leul   sinnage -deul bull -eoss -da.
        Chanu and   Minsu NOM   song   ACC   having-fun PL sing PST   DEC
        'Chanu and Minsu had fun singing together.'
                     [adapted from Yim 2002 :190 ; translations our own]

In (43b), contrasting with (43a), EPM *deul* emphasises the plurality of the subject, thus triggering a distributive-like semantic effect, tentatively captured by our English translation:

(43)a. Hangug   eomma-deul -eun   mad   -jasig -ege   gidae -leul
        Korea   mother PL   TOP   first child DAT   expect ACC
        manhi ha   -n   -da.
        much do   PRS   DEC
        'The mothers of Korea expect much from the eldest child.'

b. Hangug   eomma-deul   -eun   mad   -jasig   -ege   *-deul*   gidae   -leul
    Korea   mother PL   TOP   first   child   DAT   PL   expect ACC
    manhi   ha   -n   -da.
    much   do   PRS   DEC
    'The mothers of Korea all expect much from their eldest child.'[18]
        [adapted from Kim 1994 :317 ; translations our own]

4.2.2.6.   Synthesis

The assumption phrased under (24) correctly predicts the distribution of the plural marker *deul* in all the Korean examples discussed above. In such cases as (8a), where plural specification on the noun phrase is motivated by a preidentified specific (hence rigid) referent involving several atomic entities, the plural marker *deul* naturally occurs, in keeping with (24a). This accounts for the often-noted affinity between *deul*-type plural markers and definite readings (cf. Kurafuji 2001 on Japanese *tachi*). The examples in (32), (34i) and (35a) however show that *deul*-NPs in Korean may also be read as indefinite – always triggering an extensional construal of their referent.

4.2.3.   Inflectional and non-inflectional plural markers
4.2.3.1. The inherent nature of plural morphology

We would now like to relate the above results to a remark made by Ramstedt (1939: 35), who identifies *deul* as a noun which forms a compound with the noun it attaches to, but 'can as well be considered (an) independent word'.

We propose to rephrase this idea as in (44) :

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(44)   Assumption III
       The French plural spells out the positive value of an *inflectional* feature.
       Korean *deul* is a *lexeme*, and as such does not have a *negative value*.

Formally, we propose to characterise *inflectional* features as a subclass of functional features which have a binary value (±). The *negative value* of an inflectional feature may correlate with unmarked morphology. Inflectional features instantiate an advanced stage of grammaticalisation. Examples of inflectional features are the [±Past] specification in French (with [-Past], known as 'Present', generally correlating with zero morphology), and the [±Plural] specification discussed in this article. Due to the inflectional nature of the plural, nonplural morphology — known as *singular* — in French is syntactically ambiguous between number unmarkedness and number deficiency, as represented in (12). With noninflectional features, on the other hand, morphological absence is either interpreted as phonological deficiency (ellipsis) or equated with syntactic absence: thus, the English sentence *John came* is construed as containing no adverb at all rather than as involving a negative value of, e.g., *now* or *tomorrow*. As regards number, (44) predicts that if the plural marker spells out a noninflectional feature, as we assume is the case in Korean, a nonpluralised noun phrase is unambiguously construed as number-deficient – i.e. is always associated with a representation similar to (12b). In other words, while plural morphology occurs in both Korean and French, 'singular morphology' is a relevant concept for French but not for Korean.

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[18] The contextual semantic effects of EPM are a tricky issue which calls for a separate study (see fn. 10). Our examples (41b) and (42b) are only meant to suggest that the semantic import of EPM goes beyond the topicality effects that may correlate with rich subject-predicate agreement.

4.2.3.2. Empirical evidence

In support of (44), we shall now provide some empirical evidence that the Korean plural marker *deul* is more weakly grammaticalised and has more lexical semantic content than does French-type plural morphology.

4.2.3.2.1. Korean 'particles' are lexemes

Most Korean 'particles' have been shown to derive from identifiable lexemes: Kim (1996) thus argues that *ga* (the nominative particle) derives from a noun meaning something like 'set'; *mada* (the distributive translated as 'each') derives historically from a noun meaning 'unit, singular entity'; *buteo* (the morpheme translated as 'from') from a verb (*butda*) meaning 'to stick'), and so on. It is thus likely that *deul* similarly originates as a lexeme, whose exact identity remains an open issue for us at this point.

4.2.3.2.2. Pluralising mass nouns

Korean *deul* may interestingly combine with a noun which denotes a mass of continuous matter such as SAND, OIL, or MONEY, to produce a derived meaning construed as a set of atoms:

(45)   geu   -neun eongdeongi -e   but   -eun *molae-deul*-eul teol   -eoss -da.
         3H   TOP   backside   LOC   stick   REL sand   PL ACC brush   PST   DEC
         Lit. 'He brushed off some *sands* which had stuck to his backside.'
         = 'He brushed off a number of sand particles which had stuck to his backside.'
                  [adapted from an example drawn from the KAIST database]

(46)   gunbam   -jangsa-ha-yeoseo   moa du-eoss-deon   *don   -deul-do*
         roast   chestnut trade do by means   amass   PST REL   money PL   also
         geoui badag   -i   na   -ss   -da.
         almost bottom NOM   appear PST   DEC
         Lit. 'Even the *moneys* which he had put aside by selling roasted chestnuts
         almost let the bottom show.'
         = 'Even the heap of bills and coins which he had put aside by selling roasted
         chestnuts almost let the bottom show.'
                  [adapted from an example drawn from the KAIST database]

(47)   nakksi-ha-l   saenggaghaji-ma !
         fishing do REL   think   NEG.INJ
         'Don't think of fishing !'
         Yeogi-n   *gileum-deul* ppun i   -da.
         here TOP   oil   PL   only COP   DEC
         Lit. 'There's nothing here but *oils*.'
         = 'This place is nothing but a cluster of oily spots.'
                  [adapted from an example drawn from the KAIST database]

These data are especially unexpected under the assumption that all Korean nouns should be parameterised as having mass denotations in the lexicon. In a sense, the Korean nouns *molae, don* and *gileum* would seem less strictly mass-denoting than their English or French homologues *sand/sable, money/argent* and *oil/mazout*, which cannot be made to denote atoms of continuous matter when combined with the plural.[19]

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[19] In English and French, pluralising such nouns as *sand, money* or *oil* at best allows a reading involving the covert insertion of a TYPE classifier, e.g. :
(i)   ?Three oils have leaked from this ship.
            = 'Three different types of oil have leaked from this ship.'

4.2.3.2.3. *deul* as an enumeration closure

Korean *deul* also occurs to close enumerations, where it is traditionally identified as a 'dependent noun':

(48) sagwa, bae, podo *deul* -i   sigtag wi   -e   nohyeo iss -da.
      apple, pear, grape PL   NOM   table top   LOC   lie   EX   DEC
      Lit. 'Apple, pear, grape, *deul* are lying on the table'.
      = 'Apples, pears, grapes, those things are lying on the table.'

As an enumeration closure, Korean *deul* contrasts semantically with such expressions as English *and so on* or Latin *et coetera*, which crucially point to an open set. Korean *deul* indicates the plurality of an extensional set: thus, in (48), it emphasises the fact that the closed set of objects lying on the table is composed of several different subsets. This semantic property is in keeping with the extensional effect of *deul* described above, and with the assumption that Korean *deul* might be intrinsically referential, hence nominal.

4.2.3.2.4. *deul* as an Extrinsic Plural Marker

The assumption that Korean *deul* is noninflectional in nature is in keeping with its EPM behaviour, briefly discussed above in section 4.2.2.5: EPM *deul* is not obligatory from a *morphosyntactic* point of view, and its semantic effects are those of a lexeme whose nonoccurrence is construed as an absence at all levels of representation, rather than as the unmarked value of a binary feature.

4.2.3.2.5. *deul* and other 'plural' lexemes

In Korean grammars and dictionaries, *deul* is mentioned alongside two other 'plural marking' devices . The morpheme *ne* is listed as a plural marker in, e.g., Ramstedt (1939) and the recent *Standard Korean Dictionary*, and noun reduplication in Ramstedt (1939) and Baek (2002). *Ne* and noun reduplication are far less productive than *deul*, whose distribution is itself, as argued above, more restricted than that of the French/English-type plural. The examples presented below in (49) and (50) bring out the semantic contrasts between the three Korean 'plural' markers: *deul*-NPs are construed as extensional sets, as illustrated by (49b) and (50b); *ne*-NPs trigger an associative-plural effect, cf. (49c); and noun reduplication triggers what we might call a *string* effect, which our translation attemps to capture in (50c):

(49)a. geu   -geos -i   balo *eonni*   -ga   wonha -neun geos -i   -da.
       DM   thing NOM   exactly sister   NOM   want   REL   thing COP   DEC
       'That is exactly what my (elder) sister wants.'
   b. geu   -geos -i   balo *eonni -deul* -i   wonha -neun geos -i   -da.
       DM   thing NOM   exactly sister   NOM   want   REL   thing COP   DEC
       'That is exactly what my (elder) sisters want.'
   c. geu   -geos -i   balo *eonni -ne*   -ga   wonha -neun geos -i   -da.
       DM   thing NOM   exactly sister   NOM   want   REL   thing COP   DEC
       'That is exactly what my (elder) sister and her lot want.'
   d. *geu -geos -i   balo *eonni -eonni* -ga   wonha -neun geos -i   -da.
       DM   thing NOM   exactly sister   NOM   want   REL   thing COP   DEC

Interestingly, this option is not available in Korean without an overt classifier, while pluralisation *is* possible with an atomising effect, as witnessed by (44)-(46).

(50)a. geu   -neun maeul -e   dochagha   -jamaja,
  3MSG TOP   village LOC   arrive   as soon as
  (ø)   *jib*   -eul   bangmunha   -yeoss -da.
  (he)   house ACC   visit   PST   DEC
  'As soon as he arrived in the village, he visited {the/his} house.'

  b. geu   -neun maeul -e   dochagha   -jamaja,
  3MSG TOP   village LOC   arrive   as soon as
  (ø)   *jib*   *-deul* -eul   bangmunha   -yeoss -da.
  (he)   house   ACC   visit   PST   DEC
  'As soon as he arrived in the village, he visited {the/his/some} houses.'

  c. geu   -neun maeul -e   dochagha   -jamaja,
  3MSG TOP   village LOC   arrive   as soon as
  (ø)   *jib*   *-jib* -eul   bangmunha   -yeoss -da.
  (he)   house   ACC   visit   PST   DEC
  'As soon as he arrived in the village, he visited {several houses in a row/
  a row of houses}.'

  d. *geu   -neun maeul -e   dochagha   -jamaja,
  3MSG TOP   village LOC   arrive   as soon as
  (ø)   *jib*   *-ne*   -leul   bangmunha   -yeoss -da.
  (he)   house   ACC   visit   PST   DEC

This competition between *deul*, *ne* and noun reduplication, as plural markers, gives further empirical support to our assumption (44).

5. Conclusion : explaining the French-Korean contrasts

We argued in section 4 that what distinguishes Korean *deul* from the French-type plural morphology is not its 'optionality', but rather its *noninflectional* character. We would now like to suggest that it is the inflectional nature of the French-type plural which accounts for its correlating with intensional readings, which we have shown to be unavailable with Korean *deul*. The central contrast between the Korean-type and French-type plural markers is their rigid vs. nonrigid semantics, not the Collective reading associated with number deficiency – which is common to the two languages. Our prediction is that only inflectional plural markers (as opposed to noninflectional ones) may allow intensional readings, and hence undergo binding, be involved in number agreement or exhibit narrow-scope effects. We assume that the inflectional or noninflectional nature of number marking is a relevant parameter for grammatical typology (to be added to Corbett's 2000 survey of properties), and that it is quite independent from the determiner issue: thus, Russian and Hindi, discussed by Dayal (1992, 1999, 2002), have no articles but have inflectional number; whereas Korean (like Chinese [Iljic 1994, Cheng 1999], Japanese [Ishii 2000, Kurafuji 2001, Mizuguchi 2001], Indonesian [Chung 2000]) combines lack of articles with noninflectional plural marking. French and English, as well as Hungarian (Farkas & De Swart 2003) have inflectional number and articles. Can a language combine (definite and/or indefinite) articles with noninflectional plural marking? We leave this as an open question.

We must now go back to the issue raised in sections 1 through 3: why are Collective-read number-deficient noun phrases more restricted in their distribution in French than in Korean? Suppose that we are correct in assuming that only an inflectionally-pluralised (French-type) noun phrase, as opposed to a lexically-pluralised (Korean-type) noun phrase, is open to intensional readings. It follows that in an inflectional-number language such as French, number deficiency associated with the Collective reading competes with the plural for denoting intensional sets

(whether kinds, or properties). From an interpretive perspective, however, the Collective reading involves a 'massification' effect - the blurring of the individuals which constitute the set - whereas the plural preserves the atomised construal of these individuals. In other words, number deficiency correlates with a mass-type interpretation (the Collective effect), which the plural fails to trigger. When inflectional plural morphology and Collective-read number deficiency are both available in the same language (as is the case in French), Collective-read number-deficiency is hence likely to get restricted to those styles, referents, and contexts which pragmatically motivate the de-atomising (mass) effect: the more the referent calls for an atomised reading, the less felicitous number-deficient syntax appears. On the other hand, in a lexical-plural language such as Korean, the plural triggers a rigidity effect; it follows that number deficiency takes over all intensional readings, including those which call for the plural in French because of its preferred atomising effect: cf. (3b), (22). In Korean, the plural, because of its semantic rigidity, is more restricted in its distribution than it is in French, and correlatively, there is no available grammatical strategy in this language to force an atomised AND intensional construal of a kind.

Summarising, the leading assumptions developed in this article are the following:
• The mass/count distinction is not a semantic primitive rooted in the lexicon but always an effect of morphosyntax.
• Number deficiency in syntax correlates with Mass and Collective readings in both Korean and French.
• Lexical plural markers (such as Korean *deul*) should be expected to be distributed and interpreted differently from inflectional plural markers (such as the French plural).
• In order for a plural marker to grammaticalise into an inflectional feature, it must acquire a *negative value*.

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