Definites and floating quantifiers" (tous/all), linguista sum. Mélanges offerts à Marc Dominicy

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DEFINITES AND FLOATING QUANTIFIERS (*TOUS* / *ALL*)

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A typical property of definite NPs is that they can be modified by floating expressions with a strong quantificational flavour. *Tous*, in French, *all* in English are expressions of that kind, as exemplified in (1) and (2) :

(1) The students are all asleep.
(2) Les étudiants sont tous endormis.

The combinability of these two kinds of expressions – definites and markers of universal quantification – raises difficulties for standard theories of definite NPs, since most of these theories take for granted that the meaning of definiteness involves some form of maximality. And this association between definiteness and maximality surfaces in very different and unrelated approaches, especially when plural definite NPs are taken into account. Hawkins (1978) for instance proposes a pragmatic approach to definiteness (including plural references) based on *exhaustivity*, and the very influential work of Link (1983) in formal semantics provides an analysis of definite reference as the *maximal* element of a lattice.

There are at least three problems for these theories:

1. Definiteness is seen in many analyses of natural languages as something very different from quantification, something that is related, instead, to indexicality and information sharing.
2. There are many situations in which definiteness does not imply maximality, as exemplified in (3) :

(3) A: The students touched this freshly painted wall.
B: Many of them?
C: No, of course, but at least one did.

3. It is difficult to explain that items implying maximality can combine with other lexical expressions which are commonly seen as expressing some form of universal quantification.

None of these problems remains unnoticed, but, as far as I know, most proposals put forward to solve them have their own difficulties. For space considerations this paper will not discuss these approaches at any length, but will instead sketch a new solution.

In my view the existing literature focuses mainly on problems 2 and 3 above. Two main strategies have been attempted. Dowty's (1986) focus is on 3. What he tries to explain is that some predicates *cannot* combine with floating expressions like *all*, which he analyzes as a genuine first-order quantifier. Another line of approach is represented by Lasersohn (1999). In this approach the focus is on problem 2; it is seen as a special case of a more general problem having to do with the degree of precision of assertions in pragmatic contexts, a problem solved in terms of

"pragmatic halos". I think that the general issue addressed by Lasersohn is very important, but does not solve problems 2 and 3, which involve the relation between definiteness and quantification. Lasersohn makes a good point in showing that expressions like *all* and *exactly* can play the same pragmatic role, but the semantic basis of the association between definites and quantifier-like expressions remains to be properly dealt with.

This is why the line I will follow in this paper is more in the spirit of Dowty's approach: I think it is important to explain why some predicates do not combine with floating quantifiers in order to understand the association when it is licensed. However, my proposal will try to avoid some problems encountered by Dowty's, and will try to relate a plausible non-quantificational theory of definiteness with the behaviour of definites and floating expressions.

1. Definites as referring terms

The basis of my analysis is that definite NPs are not quantifying expressions. They are referring terms, like proper names. I will not go into details, taking this as a working hypothesis.

Definites are used for picking out individuals in an "interpretation domain" (Corblin 1987). The reason why they have something to do with maximality, in this respect, comes from the way they pick out their referents in such a domain : to this end, they use their descriptive content as the only selection criterion. It follows that they will pick out all the individuals which match their descriptive content in the domain.

The only way open for non-exhaustivity (of reference) comes from the fact that interpretation domains are pragmatically delimited. When talking of *the students*, it might be the case that I mean the students in general, in France, at my University, in my class, or those mentioned in the previous discourse. An important point I will not discuss here is that interpretation domains are different from quantification domains for quantifiers. Both are pragmatically restricted in a dynamic way as discourse proceeds, but the two categories and processes are distinct.

For the present purposes, it is enough to say that a plural definite NP will pick all the *x*'s matching its descriptive content in the relevant interpretation domain.

All this is just a matter of reference, of what one means by saying *the x's*, irrespective of what one says *of* them. In what follows, I will admit that it is possible to neutralize this variable. In other words, I will suppose that the reference of *the x* can be delimited without any imprecision. For instance it will be convenient, for testing the examples with *the students* up to now, to assume that the interpretation domain is perfectly clear : for instance, we are talking of the students in our joint programme, and there are twenty of them. Or I show someone a group of students and say: "Look at these twenty students. Is it true that these students touched the freshly painted wall?"

2. Definites and individual predication

If definites are referring terms, like proper names, they can saturate a predicate argument slot, and the resulting interpretation is that the individual denoted by the

definite NP is a satisfier of the predicate. Let us call this kind of predication an *individual* predication.

(4) La robe de Marie était rouge.
Marie's dress was red.

Building on many classical studies on plurals, we shall assume that definite plural NPs can refer to a collection viewed as a single individual – a group – and can be the basis of an *individual* predication.

But it is also possible to associate to the definite NP a quantifying expression as in (5) :

(5) La robe de Marie était entièrement (partiellement) rouge.
Marie's dress was entirely (partly) red.

In this case a generalized quantifier takes the denotation of the referring expression as its restrictor, and states which proportion of this denotation verifies the predicate. Let us call this kind of predication a *quantificational* predication.

The relation between the individual predication and the corresponding universal predication is not trivial, as shown by (6) :

(6) La robe de Marie était rouge, mais pas entièrement.
Marie's dress was red, but not entirely.

2.1. Individual predication and inferences to parts

Many studies have shown that starting from an individual predication it is in general impossible to infer which proportion of the parts of the individual satisfies the predicate. It has been shown that it is the individual meaning of each predicate which specifies which inference is warranted.

Consider for instance the verb *toucher* (to touch). It is part of its meaning that if an entity *touches something*, all we can infer for sure is that at least a part of the entity touches the thing in question. But consider the predicate *être grand* (to be large). It is part of the meaning of the predicate *to be large* that there is no inference from the satisfaction of the predicate by the individual to the satisfaction by any of its parts.

Many typologies have been proposed for grouping predicates in a few relevant classes. See Carlson (1977), and many others (Dowty 1987, Kamp & Roßdeutscher 1992, Yoon 1996, Loebner 2000, Rotstein & Winter 2004). In what follows I shall make use of the typology used in Corblin (2008), a typology set up on the basis of these previous studies, which distinguishes:

1. Holistic predicates[1] (a set of predicates including the "pure-cardinality" predicates of Dowty 1987, like *to be numerous*, but also many other predicates like *to be tall*)
2. Universal-most-parts predicates ("UMP" predicates for short) : *to gather, to be red*

[1] See Brisson (2003), Comorovski (2003), and Comorovski & Nicaise (2004) for work focussing on such predicates.

3. Existential predicates : *to touch*

In this typology, holistic predicates have two distinctive properties :

A) No inference to the parts is warranted on the basis of an individual predication.

B) No combination with floating quantifiers is allowed.

The B property is illustrated by (7)-(10) :

(7) *Les étudiants étaient tous nombreux.
The students were all numerous.

(8) *La plupart des étudiants étaient nombreux.
Most students were numerous.

(9) *La cuisine était entièrement grande.
The kitchen was entirely large.

(10) *La majeure partie de la cuisine était grande.
The major part of the kitchen was large.

To my knowledge, Dowty (1987) was the first to point out the link between these two phenomena, although he defined the relevant properties in a different way. Dowty's proposal holds that the floating quantifier *all*, seen as a distributive quantifier (first-order universal quantifier), is licit if it can be interpreted to mean that each individual in the set satisfies some property specified by the predicate itself (what he called *sub-entailments).* He defines a predicate like *to be numerous* as having no sub-entailment, which means that from knowing that a set is numerous, one cannot infer *any property* which any element of the set should satisfy. On the contrary, a predicate like *to gather* has sub-entailements: for a set of elements to gather, these elements must, say, move to some common point.

In my definition of holistic predicates, it is standard entailment which is intended, not Dowty's sub-entailment. I try to dispense with the notion of sub-entailment, which raises problems of its own.

In a nutshell, Dowty's view is that *all* in (7) is illicit because it would require distributing sub-entailments on every element of the set, which is impossible since the predicate has no sub-entailments. Like Dowty, I am convinced that the A and B property are related, but I think that the relation between them is different.

What (7)-(10) show is that there is a class of predicates which cannot be used in quantificational predications, but only in *individual* predications. The reason why this is so is that *holistic* predicates refer to properties which are satisfied by an individual "taken in all of its parts". The intuition behind this approach is that holistic predicates have a built-in quantificational restriction stipulating that the predicate holds of an individual iff all of its parts are taken into account. As a consequence no quantificational predication can distribute the property on the parts of an individual. I do not think that anything important for the present discussion hinges upon the way A and B are connected (for more details on holistic predicates, see Corblin (2008)).

2.2. Collective predicates and the interpretation of all

Another departure from Dowty's view is the analysis of *all.* In the present approach, *all* is analyzed as a generalized quantifier, and not as a first-order universal

quantifier. When combined with a reference to an individual (a plurality seen as a group), it means that all the parts of the individual are satisfiers of the predicate. The semantics of *all* is close to that of expressions like *entirely* when used with singular NPs.

On this view, the combination of *all* with intrinsically "collective" predicates like *to gather* does not commit to the distribution of some property to any *atomic* element of the group.

Let us assume that such predicates select pluralities as their arguments. Without a floating quantifier, we get an individual predication :

(11) The students gathered in the hall.

The "parts" relevant for the inferences can only be pluralities. Suppose this predicate is defined as a UMP predicate. Then the inference associated with the individual predication is that most parts of the group of students satisfy *gather*.

If a quantifier occurs, we get a quantificational predication :

(12) The students all gathered in the hall.

What it means is that all the (plural) parts of the group of students satisfy *gather*. As required by the predicate, all the relevant parts are pluralities, at least pairs of individuals. An interesting question – one which remains open – is the way the relevant partitions are built. Although I will not discuss this point at any length, let us consider an example in order to show that this approach is on the right track.

Take the French expression *être de taille différente* (to be different in size). There are good grounds for claiming that it is an *existential* predicate. Look for instance at the following set of characters :

(13) a a a a a a a

For all speakers I asked, the following sentence is true :

(14) Ces caractères sont de taille différente.
These characters are different in size.

In other words, *x's sont de taille différente* iff there is at least one pair y of x's, such that y is a satisfier of *be different in size*. This inference can be grounded if one defines this predicate as an *existential* predicate.

Now consider:

(15) Ces caractères sont tous de taille différente.
These characters are all different in size.

In our view, *tous* is a generalized quantifier, and means that any plural part of the set satisfies the predicate *être de taille différente*. An interesting consequence of this proposal is that (15) should not be true of (13), which is confirmed by all the speakers I asked. Only situations like (16) can satisfy (15), i.e. a situation in which any pair of individuals satisfies the predicate:

(16) a a a a a

This example illustrates two general points:

1) A floating quantifier like *all* can be interpreted as a generalized quantifier over the parts of an individual which indicates that any part of this individual satisfies the predicate. It can combine with inherently plural predicates, and quantifies in that case on any plural part of the individual. But it cannot combine with holistic predicates, since such predicates are true only of an individual considered in all of its parts and warrant no inference to its sub-parts.
2) For *existential* predicates, there is a dramatic difference between the truth conditions of an individual predication and the truth conditions of a quantificational universal predication using *all.* This is not only true of inherently plural predicates, but also of other existential predicates like *to touch,* as we will see later. In contrast, UMP predicates will not give rise to a major meaning difference. If we are right to define *gather* as such a predicate, the only difference between (11) and (12) is that only (12) implies that any pair of students gathered, while (11) tolerates exceptions.

3. Distributivity

Although this assumption is not uncontroversial (see Bennett 1974, and Scha 1981, for instance), a widely accepted idea is that what precedes is not enough to deal with plural definite NPs: the common wisdom is that a special notion of "distributive" interpretation is needed for interpreting certain sentences involving plural definite NPs (see Roberts 1987, Link 1983, and many others).

To do without this would amount, for instance, to assuming that:

(17) The students touched the wall.

is an individual predication (a predication about a group), and that the lexical inferences associated with *touch* require that at least one member touched it, but admit that any member did (something equivalent to what is usually called a distributive interpretation).

I shall not take this road, and like many others I will instead assume that something special must be added to generate a special kind of interpretation called distributive.

The classical strategy for so doing is to postulate an invisible operator D (cf. Link) which is interpreted as a first-order quantifier over the set referred to by the definite NP.

(18) Les étudiantes sont enceintes
The students are pregnant
$\forall$ x $\in$ {the female students referred to by *les étudiantes*} pregnant (x)

Most authors think that this interpretation is due to an ambiguity of the predicate, not of the definite NP. In Corblin (2008) it is assumed that there is an ambiguity of the plural NP, which can be seen as referring to an individual (a group) or to a set of members. It is for this special “set” interpretation of the NP that the distributive

interpretation is open. I do not want to discuss this view here, but only to point out some weaknesses in the classical analysis.

The classical analysis has to make three arbitrary claims:

1. There is an invisible quantificational operator.
2. This invisible operator shows up as an option for some predicates.
3. This operator is a first-order universal quantifier.

Moreover, this bunch of arbitrary claims does not seem to be needed anywhere else in the semantics.

As an attempt to fix this, I have proposed in previous work (Corblin 2002, 2008) the following line of explanation, which draws on Lewis's analysis of conditionals with missing adverbs of quantification.

A plural NP can be interpreted as an individual, i.e. a group. If it is then combined with a predicate, it gives rise to an individual predication. But it can also be interpreted as a mere set of individuals. In that case there is a type mismatch for individual predication, which is therefore not licensed. But a set can be interpreted as a restrictor (a set of cases), and a combination with a predicate will give rise to a generalized quantification. In the absence of an adverb of quantification, the interpretation will work as if a universal or quasi-universal adverb of quantification were present.

Let us recall briefly the analysis of Lewis (1975). A sentence like (19):

(19) If it rains I take my umbrella.

is seen by Lewis as a mere stylistic variant of (20):

(20) If it rains I always take my umbrella.

In both cases, the *if* clause provides a set of cases, a restrictor, and the sentence asserts that in all of these cases, the *then* clause is true. An interesting aspect of this analysis, left undeveloped by Lewis, is that, even if there is no lexical expression of any lexical quantifier, there is a quantificational interpretation, and this interpretation is universal or almost universal. And between the interpretation of the version without any quantifier and the explicitly quantified version, we observe a kind of relation we have already noticed for definite references :

(21) – If it rains, I take my umbrella.
– Always?
– No. But in most cases I do.

The Lewisian account of distributive interpretation does not raise the issues encountered by the traditional analysis:

1. What we need is needed elsewhere.
2. We need it only if there is no other way to build a predication.
3. The invisible quantifier is no more a first-order quantifier than the Lewisian invisible quantifier.

4. Some shared properties of invisible quantifiers are useful for explaining the data, namely that an invisible quantifier is of the UMP kind, not of the "strictly universal" kind.

Consider a strictly atomic predicate like "to be pregnant" combined with a plural subject as in (18). There is no way to consider an individual predication (with the female students, as a group, satisfying the property : pregnant (x)). The reason is that such "atomic predicates" have, as part of their meaning, a constraint that they cannot enter into an individual predication with a group. The only accessible interpretation, then, is that an invisible UMP quantifier distributes this property over the members of the set. In other words, the only way to interpret (18) is as a quantificational predication distributing over the atoms of the sets. This does not mean that *all* should be interpreted as a lexical realization of a first-order distributive quantifier. As in any use of *all*, it is interpreted as a generalized quantifier meaning that any part of the set referred to by the subject is a satisfier of the predicate. A property of atomic predicates is that only the partition into atoms is relevant.

The contrast with sentences containing a lexical quantifier (*all)* is that in that case all of the students should be pregnant. A prediction of this analysis is that for inherently atomic predicates, i.e. predicates which cannot be attributed to pluralities, the contrast between bare definites and definites modified by *all* should not be dramatic, a prediction which is borne out.

In my view, Lasersohn's work on pragmatic halos could be useful for discussing the UMP interpretation of implicit operators. A strong intuition is that an invisible quantifier is interpreted as "universal up to the degree of precision tolerated by the ongoing activity".

For instance, when doing mathematics, an implicit principle of interpretation is that any such quantifiers are strictly universal, just because this kind of activity is exclusively concerned with strictly universal sentences. But of course this is different if one is talking about human behaviour.

There is another story about invisible quantifiers (see Schwarzschild 1994, and for discussion Lasersohn 1995): that story says that the invisible quantifier is strictly universal, but that it comes with a permission to exclude some individuals from the domain of discourse (including some admissible cases for the restrictor). In other words, *the students* (without an explicit quantifier) would be interpreted as a universal quantifier not committed to taking into account every student of the discourse domain. Lasersohn (1995) points to some empirical problems with an unconstrained version of this approach. I would like to point out, in addition, some theoretical problems with this view.

In a nutshell, we face the following alternative: considering a sentence that most views want to analyse as involving quantification without a quantifier, one approach assumes that the quantifier is strictly universal, but that the domain of quantification in not exhaustively quantified over; the other one assumes that the quantifier is universal or almost universal, and says nothing about the domain. It seems to me that the first approach has to make at least two assumptions (the quantifier is universal, and the domain is not maximal), whereas the second one does not appeal to restrictions on the domain and is restricted to surface manifestations: how are we to interpret a quantified sentence with no explicit quantifier? The answer "as a

universal-or-almost quantifier" has the advantage of preserving the rule that only *all* "means" universal quantification, and that a silent quantifier has a different meaning. Actually, the main problem for these approaches (see Brisson 2003 for a recent version) is the meaning of *all*. If the meaning of definiteness is universal quantification plus non-exhaustive domain, the meaning of *all* is reduced to ruling out the non-exhaustive domain constraint. Then, *all* is, by and large, a slack regulator, in the sense of Lasersohn (1999). In my opinion, it is much more natural to stick to the idea that *all* means "all", and to assume that an implicit universal quantification is less strict and means "all or almost", even though the domain-flexibility approach will produce extensionally the same result.

4. Mixed predicates

Some predicates, when combined with a plural subject, can be interpreted either as an individual predication (the group is a satisfier of the predicate) or as a quantificational (distributive) interpretation. Such predicates allow their argument to be a group, or to be an atom.

Individual predication :

(22) Mes étudiants m'ont offert un présent.
My students gave me a present.

If the subject is interpreted as referring to a group, there is only one quantifier in the sentence (corresponding to the indefinite), and at least (and preferably) one present has been given by the group.

Quantificational predication :

(23) Mes étudiants m'ont tous offert un présent.
My students all gave me a present.

The most natural interpretation gives wide scope to the universal generalized quantifier over the existential quantifier. This is not equivalent to what is usually called a distributive interpretation, but is closer to the tentative paraphrase (24):

(24) Each student was an agent of a giving-me-a-present action (individual or collective).

It says that there is at least one partition of the group such that for any subpart p of this partition, p gives a present. With no exception, any student is a member of a group giving a present.

The classical distributive interpretation is only a highly preferred interpretation for sentences like (23), and there is no way to interpret *tous* as the realization of the distributive operator, for a simple reason: there is a natural candidate for the realization, or for the selection of a strictly distributive (i.e. first order) quantifier, namely *chacun*, which is perfectly[2] compatible with the occurrence of *tous*:

[2] For some speakers (I am grateful to P. De Brabanter for this comment), the sentence is perceived, out of the blue, as involving a redundancy. A natural context of use would be, for instance, a dialogue like :
- Mes étudiants m'ont fait un cadeau
- Tu as donc reçu un cadeau ?

(25) Mes étudiants m'ont tous offert un cadeau chacun.
My students all gave me a present each.

The difference between (23) and (25) is that, if present, *chacun* implies that the predicate must be interpreted as an atomic predicate (applying only to atoms). In contrast, *tous* implies that any part of the subject is a satisfier. This is why (23) is equivalent neither to (25) nor to (26):

(26) Mes étudiants m'ont offert un cadeau chacun.
My students gave me a present each.

In order to deal with the data and the combinatory possibilities, *chacun* should be analyzed as an argument modifier which transforms the host predicate into an atomic predicate interpreted in the scope of a quantifier over a plurality. It follows that the subject must be interpreted as referring to a set, and that the predication must quantify over atomic individuals. As usual, if present, the generalized quantifier *all* will imply that any part (in that case any individual in the set) is a satisfier of this individual predicate. If there is no lexical quantifier, the interpretation will as usual be a UMP quantifier.

It has been said in passing that the presence of *tous* in a sentence makes the classical distributive interpretation highly preferred. Why is it so? I think that the presence of a quantifier makes salient the partition of the referent, and that the most salient partition of a plurality is into its atoms. This is probably why (23) is most often interpreted as meaning: “every student bought a present”.

But there is a face-value problem with the collective interpretation (27) :

(27) Mes étudiants m'ont tous offert cette sculpture de Dali
My students all gave me this sculpture by Dali.

It is necessary to interpret this sentence with the meaning: all my students *together* presented me with this sculpture. The classical example of piano moving exhibits the same kind of phenomenon:

(28) Mes étudiants ont tous monté le piano à l'étage
My students all carried the piano upstairs.

Although *tous* is present, the interpretation is a classical "collective" interpretation.

A plus point of the present analysis is that *tous* does not *impose* a distributive interpretation, but only displays a preference for it.

One may think, however, that this is a problem, because a simple way of accommodating collective interpretations, in our terms, is to see collective interpretations as *individual* predication. The collective interpretation of (29):

(29) Mes étudiants ont monté le piano à l'étage.
My students carried the piano upstairs.

would be an individual predication: the students, as a group, satisfy the predicate.

But our assumption is that the mere presence of a quantifier involves

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- Non. Ils m’ont tous fait un cadeau chacun.

quantificational predication, and implies that any part of the referent satisfies the predicate.

The question is thus: how can we accommodate the fact that these sentences have a collective reading – i.e. one that normally requires individual predication – even though they contain a quantifier – the hallmark of quantification?

The answer we would like to suggest is that these sentences are actually a special case of quantification. Suppose a, b, c, are working together to move the piano upstairs. Any of them, if asked "Did you carry the piano upstairs?" would probably answer: "Yes, but not alone".

Sentences like (28) can thus be interpreted as asserting that each atom satisfies the predicate, but this does not in general imply that the atom under consideration did it on its own, although such an implicature can be associated with the predicate. Consider (29):

(29) Les étudiants ont tous réglé l'addition.
The students all paid the bill.

There is, of course a distributive interpretation, which would imply some sort of mistake: each student pays the bill on its own; in that case, the bill is paid many times. But there is also another distributive interpretation; each student, if asked, would say : "yes I paid the bill, but not alone". It seems to me that the source of the ambiguity is not the predication, which is distributive, but the interpretation of the predicate. Note that we need to accommodate cases like (30), which are independent of the issues under discussion :

(30) John a financé ce projet.
John funded the project.

On one interpretation, John funded the whole project; on another one, John funded only a part of it: he was a contributor. In order to accommodate the ambiguity, it is necessary to allow a "take part in" operator as an alternative to the basic relation of satisfaction holding between the argument and the predicate. Whatever the correct solution to this problem, it will solve the problems arising with cases like (27)-(29) too.

Both interpretations are distributive, and assert that any member of the group either satisfies the predicate, or takes part in the satisfaction. And the latter case, though close to a true "individual" (i.e. "collective interpretation"), is still different: the individual interpretation states that the group paid the bill, without saying anything about the behaviour of individual students; the distributive "take part in" interpretation asserts that the bill was paid, and that every student made a contribution. It is likely that the licensing of a "take part in" operator makes a difference between predicates. For some it is a natural option, for others it is rather odd.

(31) Les étudiants ont planté cet arbre dans la cour.
The students planted this tree in the yard.
(32) Les étudiants ont planté ce clou dans le mur.
The students drove this nail into the wall.

The individual interpretation makes no difference. Both sentences are natural. But if *tous* is added, the present theory predicts a distributive "take part in" interpretation.

(33) Les étudiants ont tous planté cet arbre dans la cour
(34) Les étudiants ont tous planté ce clou dans le mur.

(33) is perfectly fine, but (34) is odd. Just because, I think, driving a nail into a wall makes the "take part in" option odd, considering that this is typically something that a single individual does on his/her own.

5. Summary and discussion.

Let us sum up the proposal concerning plural definite NPs. For any kind of predicate (except strictly atomic ones, by definition) an *individual* interpretation is open for pluralities: the plurality satisfies the predicate. Depending on its lexical class (holistic, UMP, existential), a given predicate allows inferences as to the satisfaction of the predicate by the parts of the individual (respectively: no part, most parts, some parts).

When combined with a floating *all* (*tous)* the interpretation is *quantificational* : it says that the predicate is satisfied by any part of a partition of the individual referred to by the definite NP.

For inherently plural predicates (e.g. *to gather)*, the quantifier indicates that any plural part of the partition satisfies the predicate. For mixed predicates (e.g. *to buy*), in any context, the presence of the generalized quantifier (*all*) triggers a quantificational distributive interpretation (quantification over the atoms). But due to the possible intervention of a "take part in" operator in the interpretation of the predicate, there are two distributive interpretations: strictly distributive (every individual satisfies the predicate), or pseudo-distributive (every individual takes part in the satisfaction).

Quantificational interpretations can arise without any lexical quantifier. For atomic predicates, the distributive interpretation is the only accessible option: it is triggered by a silent generalized quantifier, sharing the properties of the Lewisian invisible adverb of quantification needed for the interpretation of conditionals. This quantifier is interpreted roughly as "universal or almost universal". The proposal extends this possibility to mixed predicates. Even if no lexical quantifier is realized, the reference of the subject can be seen as a set of parts (typically atoms), quantified over by an invisible Lewisian generalized quantifier. This is a non-arbitrary way of getting the distributive interpretations, and their relation to strict universal quantification.

One might think that this proposal will produce too many interpretations, precisely because it allows the intervention of a silent quasi-universal generalized quantifier with almost any predicate (with the exception of *holistic* predicates). For this reason, almost any occurrence of a definite NP will be ambiguous between and *individual* interpretation and a *quantificational* one relying on an invisible Lewisian quantifier. This criticism might be correct; note that it can also be made with respect to any proposal that appeals to an invisible D(istributive) operator. Given that the

present approach focuses on the different inferences licensed by different classes of predicates it will have a way of explaining why the postulated ambiguity is sometimes very visible, and sometimes rather invisible. Consider UMP predicates; there is, extensionally, no difference between the individual interpretation and the implicitly quantified one: both lead to the inference that all (or almost all) parts of the plurality are satisfiers. In the first case it is an implication, in the second one it is the meaning of the sentence.

For a sentence like (35):

(35) The students are working in the library.

Once it is admitted that *work* is a UMP predicate, there is no difference between asserting that the group denoted by *the students* is a satisfier and asserting that all or almost all students are satisfiers. The only difference concerns the way one looks at the students: as a group, or as a set of individuals.

It is for existential predicates that the present approach predicts a relevant difference.

(36) Les étudiants ont fait un graffiti dans le hall.
The students made a scribble in the hall

If the sentence is true when a single student made a single scribble, the predicate is existential. But of course, this sentence can be used for asserting that all (or almost all) of them made a scribble. And to generate this interpretation, a silent quantifier is needed.

There are some differences between this proposal and classical approaches based on an invisible D operator. In the present approach, the silent (or explicit) quantifier is a generalized quantifier over the parts of the plural individual, not a first-order quantifier on the atoms. This makes the occurrence of *tous/all* with inherently plural predicates (*to gather*) something which needs no special explanation: the predicate is satisfied by any (plural) part of the collection. It seems to me that it is also a more natural explanation for interpretations which are neither strictly distributive nor collective, but just imply that all parts of x in a partition (not necessarily atoms) satisfy the predicate. This proposal, moreover, tries to make the invisible quantifier less arbitrary. It is seen as close to the invisible adverb of quantification used by Lewis for conditionals, and it is triggered by the representation of a referent as a set (of parts), not as a single individual.

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