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# SOME NOTES ON FLOATING QUANTIFIERS\*

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## 1. INTRODUCTION

The linguistic behavior of quantifiers has been a topic of major interest for several decades, as attested by the extremely abundant literature on the semantics of quantification. It is obviously impossible to cite everything, and very hard to decide simply on what should count as basic references (for an overview, see e.g. Bach et al. 1995 and references therein). But there has also been, since May (1979, 1985), a significant set of careful syntactic analyses of quantification (Diesing 1982, Cooper 1983, Beghelli 1995, Kennedy 1997, Szabolcsi 1997, Svenonius 2000, to cite only a few). And among the very many studies, some have closely investigated the properties of Floating Quantifiers (henceforth FQs), as early as Kayne (1975) for French and Maling (1976) for English, (but see also Dowty and Brodie 1984). The topic has since then been regularly revamped (see Sportiche 1988, Shlonsky 1991, Obenauer 1994, Bobaljik 1995, Junker 1995, Doetjes 1997, Brisson 1998, Benmammoun 1999, McCloskey 2000, Boskovic 2004, Miyagawa 2005, Fitzpatrick 2006). Most of what has been proposed focuses on the nature of the FQ. Researchers have split into two subgroups: advocates of an adverbial approach *versus* supporters of (some) nominal approach. The umpire seems to have been Fitzpatrick, who, in his 2006 dissertation, calls the game a tie: some FQs are adverbial and others are nominal.

My main concern here will not be yet another re-analysis of the nature of FQs. Although my inquiry does have consequences on some of the issues discussed in previous literature, I will approach the question from a slightly different angle, exemplified below. Indeed, most of the discussions about FQs have been driven by the more or less explicit claim that (1), which involves canonical quantification (henceforth CQ) and (2), which involves FQ, are semantically/interpretively equivalent.

- (1) a. All the magicians have turned the clowns into pianos.  
b. Tous les magiciens ont changé les clowns en pianos.  
'All the magicians have turned the clowns into pianos.'

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\*This paper is based on the Latsis talk I presented during the 19<sup>th</sup> ICL, held in Geneva in July 2013. The topic and research questions had been at the back of my mind for years. I had given it occasional thought, intended to work on it more thoroughly when exchanging views and thoughts with Vidal Valmala (whom I would like to warmly thank here), but never got to the point where it could really develop into a full-fledged research paper. Recently, I again found myself working on quantifiers. So when Jacques Moeschler suggested that the Latsis talk relate with what we were doing at the time of the prize, it almost naturally occurred to me that it might be a good opportunity to try a new grip on some of the questions that had come up regularly with respect to quantifiers. My warmest thanks therefore go to Jacques Moeschler, who not only organized the conference but also pushed me to rethink quantification. I think this is just one small example of the enthusiastic driving force he proved to be. My thanks also go to Fabienne Reboul and the organizing team of the ICL, and to the audience of the talk. I am also indebted to Lena Baunaz, Adriana Belletti, Luigi Rizzi, Ur Shlonsky, for relevant and helpful comments. Finally, thanks to Joanna Blochowiak for being available for all kinds of minor and major issues.

- (2) a. The magicians have all turned the clowns into pianos.  
 b. Les magiciens ont tous changé les clowns en pianos.  
 ‘The magicians have all turned the clowns into pianos.’

Such an assumption poses a fundamental problem: apparently, languages which have FQ also have (by default) a non-floated version. But the (apparent) optionality of these two constructions seems to violate standard considerations about economy of linguistic systems.

The research questions I will address in this paper are:

- (3) Why do quantifiers float? Put in a slightly different perspective, are there some identifiable interpretive properties which trigger Floating?  
 (4) Is there syntactic evidence that Floating is indeed movement?

On the basis of some old and new data, mainly from French, I will propose that

- FQs may (or may not) start out as one constituent with the DP. However, they surface in a dedicated quantifier position, undergoing overt QR.
- QR is not a free phenomenon: it is motivated by interpretive properties (see Chomsky 2001) and subject to feature-checking mechanisms. I argue that the relevant feature is distributivity.

## 2. PROSODIC CUES

A fact that has drawn relatively little attention is the prosodic pattern associated with FQs. Indeed, as opposed to standard CQ, an FQ associated with a subject comes with some prosodic prominence, which I signal with the diacritic “˘”. Compare (5a) and (5b):<sup>1</sup>

- (5) a. Tous les clowns ont dansé˘ sur le piano.  
 ‘All the clowns have danced on the piano.’  
 b. Les clowns ont “tous dansé˘ sur le piano.  
 ‘The clowns have all danced on the piano.’  
 c. Les (“)clowns ont tous dansé sur le (“)piano.

Note that a possible, but rather marginal, prosodic pattern may appear when another element, e.g. the subject DP, is assigned stress (5c). In this case, the remnant of the sentence occurs with some echoic flavor.

Object *tous* may appear with a flat intonation (6b) or with a stress (6c):

- (6) a. Le magicien a invité tous les clowns à une soirée pyjama.  
 ‘The magician has invited all the clowns to a pajama party.’  
 b. Le magicien les a tous invités à une soirée pyjama.  
 The magician them has all invited to a pajama party.  
 c. Le magicien les a “tous invités à une soirée pyjama.  
 The magician them has all invited to a pajama party.

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<sup>1</sup> I will ignore the question of the “association” with DP. Although I will argue that FQs undergo movement, I am not committed either to the view that it forms a constituent with the DP, from which it is then stranded, or to the view, defended e.g. in Doetjes (1997), that the FQ is adjoined to the DP and co-referential with some pronominal element within the DP. Following Valmala (2008), I will refer to the DP which is interpreted as the restriction of the quantifier as the “associate DP”.

Finally, it is worth mentioning that post-past participial *tous* always comes with a relatively strong stress.<sup>2</sup>

- (7) Les magiciens les ont invités “tous.  
The magicians them have invited all  
‘The magicians invited them all’.

### 3. INTERPRETATION PUZZLES

FQs (see Sportiche 1988, Bobaljik 1995) occupy a structural position in the clause which is adjacent to that of subject-oriented adverbs. While Bobaljik claims that they are in free distribution with these adverbs, Sportiche adopts the view that they occur below them. The data below not only confirms Sportiche’s claim but may shed a new light on the question:

- (8) a. **Tous** les suspects ont sciemment/délibérément menti.  
‘All the suspects have knowingly/deliberately lied’  
b. Les suspects ont sciemment/délibérément **tous** menti.  
‘The suspects have knowingly/deliberately all lied’  
c. ≠ les suspects ont **tous** sciemment/délibérément menti.  
‘The suspects have all knowingly/deliberately lied’

(8a) and (8b) are both fine. Moreover, it has repeatedly been claimed in the literature that they have the same meaning (but see Junker 1995). Note that (8c), where the FQ precedes the adverb, is only possible with a manner reading, hence the diacritic.

Consider now (9):

- (9) a. # **Tous** les suspects ont sciemment raconté une version différente.  
‘All the suspects have knowingly told a different version’.  
b. Les suspects ont sciemment **tous** raconté une version différente.  
‘The suspects have knowingly all told a different version’.  
c. ≠ ?Les suspects ont **tous** sciemment raconté une version différente.  
‘The suspects have all knowingly told a different version’.

Compared to (9b), which is perfectly natural, (9a) is more difficult to compute. Obviously, (9b) offers a straightforward path to the expected reading, namely that there is a different version for each of the suspects. (9b) thus naturally calls for the interpretation that each suspect

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<sup>2</sup> I will not further look at FQs in the post-participial position. Note that there has been repeated claims (see Déprez 1986, Boskovic 2004, Fitzpatrick 2006 citing these authors) that final subject floated *tous* is unacceptable, but may improve with modification. The classical data is the following:

- (i) a. Les enfants ont dormi \*tous/ ?presque tous.  
The children have slept all/almost all  
b. Les enfants ont vu ce film \*tous/ ?presque tous.  
The children have seen this film all/almost all

However, there is clear contrast between the two : (ia), even without the modification, is salvageable, while (ib), for me, remains unacceptable. An acceptable version of (ib) would be (ii) below:

- (ii) Les enfants ont vu tous/presque tous ce film.  
The children have seen all/almost all this film

Here again, the presence of some ‘stress’ makes the sentence perfectly acceptable.

has his own story. In other words, the context favors a distributive reading. I assume that (9a) is odd, but not ruled out, because we can accommodate and allow distribution over e.g. events of telling the story (for example, all the suspects may have been questioned several times, and have come up with different stories each time). Incidentally (9c) confirms that the adverb below *tous* gets a manner interpretation, which, in this context, is rather odd.

We must now ask what difference there is between the examples in (8), where the *a* and *b* readings are equally acceptable and those in (9), which offer the described contrast. While the sentences in (8) may have a collective or a distributive reading (the distributive version being more difficult to grasp because one needs to recuperate a distributee, probably a set of events), the context of (9) forces a distributive reading. I will propose that the apparently optional positions actually correspond to two different “versions” of *tous* : a collective and a distributive one.

Puskás (2002) already pointed out that both collective and distributive readings are available, but erroneously concluded that distribution is a purely semantic/pragmatic effect. The data here shows that the apparent flexibility in the interpretation is an illusion. This observation is corroborated by (10) below :

- (10) a. **Tous** les clowns ont présenté un gros cadeau au magicien  
 ‘All the clowns have presented a big present to the magician’  
 a’ ...sauf le clown triste, qui n’était pas là.  
 ‘except the sad clown, who was not there’  
 a’’ ?...sauf le clown triste, qui en a présenté un minuscule.  
 ‘except the sad clown who presented a tiny one’  
 b. Les clowns ont **tous** présenté un gros cadeau au magicien  
 ‘The clowns have all presented a big present to the magician’  
 b’ ?...sauf le clown triste qui n’était pas là.  
 ‘except the sad clown who was not there’  
 b’’ ...sauf le clown triste qui en a présenté un minuscule.  
 ‘except the sad clown who presented a tiny one.’

Example (10a) is fine in its original form, but the two versions of the continuation are not equally acceptable. While (10a’), in which the sad clown contrasts with all the clowns in not belonging to *the group* is a perfectly acceptable continuation, (10a’’) is not so straightforward. Indeed, here, the sad clown contrasts with all the clowns in view of his *individual contribution* (bringing a present). So while (10a’) leads to the collective interpretation of *tous*, (10a’’) points toward a distributive reading. In a parallel way, (10b) with a floated *tous* may be completed with two different continuations. Here, (10b’), which forces the group reading, is degraded, but (10b’’) which offers the individual contribution reading is natural. Thus, the most natural interpretation of (10a) is that of a collective reading, where all the clowns together give a present to the magician. The interpretation of (10b) is preferably distributive, meaning that all the (different) clowns gave each a different present. This confirms that CQ favors a collective reading, while FQ yields a distributive reading<sup>3</sup>.

I will therefore propose that the two positions for quantifiers, namely the canonical Q subject position and the FQ position above manner adverbs correspond to two interpretations. CQ yields a collective reading while FQ contributes a distributive interpretation.

Turning now to object FQs, we observe that the patterns are again rather intriguing<sup>4</sup>:

<sup>3</sup> Note that the readings with a ? are not totally impossible. I assume that accommodation might function as a repair strategy. But this obviously requires more work, especially to test the differences in terms of processing load.

<sup>4</sup> As is well known French object Qs float only when the DP in their restriction is a clitic pronoun.

- (11) a. Les clowns ont désaccordé **tous** les pianos.  
The clowns have untuned all the pianos.  
b. les clowns les ont **tous** désaccordés.  
The clowns them have all untuned  
c. les clowns les ont désaccordés **tous**.  
The clowns them have untuned all.

Obviously, as also noted by Kayne (1975), object *tous* can float either to the left of the past participle (11b) or occur after it (11c). However, again, a closer look shows that *tous* occupies a fixed position:

- (12) a. un clown les a probablement **tous** désaccordés *modal*  
a clown them has probably all untuned  
b. ??Un clown les a **tous** probablement désaccordés  
a clown them has all probably untuned  
c. ?Un clown les a soigneusement **tous** désaccordés *manner*  
a clown them has carefully all untuned  
d. Un clown les a **tous** soigneusement désaccordés  
a clown them has all carefully untuned  
e. Un clown les a **tous** complètement désaccordés *completive*  
a clown them has all completely untuned  
f. \*Un clown les a complètement tous désaccordés  
a clown them has completely all untuned

As illustrated in (12), while pre-participial *tous* must follow modal adverbs like *probablement* ('probably') (12a, b), it must precede completive adverbs (12e,f). It seems to co-exist with manner adverbs, very much like subject FQ apparently co-habited with subject-oriented (or modal) adverbs (12c,d). But again, we can zoom in and find out what is really going on:

- (13) a. (? Le clown les a soigneusement **tous** désaccordés.  
The clown them has carefully all untuned  
b. Le clown les a **tous** soigneusement désaccordés.  
The clown them has all carefully untuned
- (14) a. Un clown les a **tous** désaccordés.  
A clown them has all untuned  
b. Trois clowns les ont **tous** désaccordés.  
three clowns them have all untuned

As in (12), the pair in (13) exhibits a contrast: While the order FQ>manner is absolutely fine (13b), the order manner>FQ in (13a) is odd, mainly because the expected reading (namely that the untuning was done carefully) is not a natural one given the context. Rather, the interpretation tends to push towards a subject-oriented reading, in which the clowns had a careful attitude in their activity. This seems to show that object FQs do not actually have an optional distribution with respect to manner adverbs.

Let us now turn to the examples in (14). Because of the prosodic properties of sentences containing object FQs, there are several realizations of both (14a) and (14b). If the sentences

are uttered with a flat intonation on *tous*, the collective reading emerges. In other words, one clown untuned all the pianos in (14a). (14b) yields several possible readings, the most salient of which seems to be that three clowns contributed in some unspecified way in the untuning of the pianos.<sup>5</sup>

On the other hand, if the FQ bears a stress, the interpretation of (14a) is that each piano was untuned by a possibly different clown.<sup>6</sup> The same is true with (14b), where each piano is untuned by a group of three clowns (but not where different clowns worked on (different) pianos). The same distributive reading might appear more clearly in (15), where each piano has its own bag:

- (15) Un clown les a ‘**tous** rangés dans un sac.  
A clown them has all put into a bag

Very similarly to what was observed about the examples in (14), the unstressed version yields a collective reading:

- (16) Un clown les a **tous** rangés dans un sac.  
A clown them has all put into a bag.

Here, there is only one bag for all the pianos. Putting the observations of (13) and (15-16) together, the following pattern emerges:

- (17) a. Le clown les a ‘**tous** soigneusement rangés dans un sac.  
The clown them has all carefully put into a bag  
‘The clown put them all carefully into a bag.’  
(= distribution over different bags/events)
- b. Le clown les a soigneusement **tous** rangés dans un sac.  
The clown them has carefully all put into a bag  
(= collective reading, with one bag for all the pianos)

It appears that *tous* preceding the manner adverb tends to bear a stress, and is singled out for distribution (17a), in contrast with *tous* following the manner adverb, which is unstressed and has a collective reading.

We are now in a position to propose an intermediate conclusion. The prosodic and interpretive patterns related to the occurrence of floated *tous* converge towards the following:

- subject FQs are stressed, occur in a medial position above manner adverbs, and give a distributive reading.
- object FQs are (i) stressed, occur in a medial position above manner adverbs and give a distributive reading or (ii) are unstressed, occur below manner adverbs and have, by default, a collective reading.

#### 4. A LITTLE INCURSION INTO SPANISH

Prosodic constraints on FQs have been observed for Spanish by Valmala (2008). Valmala notes that FQs in Spanish also occur in different positions:

- (18) Los estudiantes de física son todos inteligentes.

<sup>5</sup> Actually, possible readings vary with respect to the ‘exactly’ or the ‘at least’ interpretation of three clowns. Other intonational variations on the subject may yield a specific versus indefinite interpretation of *trois clowns*.

<sup>6</sup> Note that the distribution might also be over events of untuning.

the students of physics are all intelligent

According to Valmala, a FQ can appear in final position, with an emphasis, if it conveys what he labels ‘information focus’:<sup>7</sup>

- (19) A: ¿Qué estudiantes de física consiguieron beca?  
Which students of physics got grant  
B1: Los estudiantes de física consiguieron beca TODOS.

The FQ can also receive Contrastive Focus:

- (20) A: Juan dice que sólo dos estudiantes de física consiguieron beca.  
Juan says that only two students of physics got grant  
B1: No. Los estudiantes de física TODOS consiguieron beca.  
no. The students of physics all got grant  
B2: No. Los estudiantes de física consiguieron TODOS beca.  
B3: No. Los estudiantes de física consiguieron beca TODOS.

The contrastive Focus interpretation is available when the FQ occurs in a medial position, preceding the inflected verb (20B1), when it follows the inflected verb (20B2), but also when it is sentence final (20B3). So the sentence final position seems to be able to host FQs bearing emphasis associated with different types of Foci. Interestingly, Valmala also mentions that the FQ can be interpreted as ‘neutral’, that is, associated with neither a focus nor a topic interpretation:

- (21) A: ¿Qué consiguieron todos los estudiantes de física?  
What got all the students of physics?  
B1: Los estudiantes de física consiguieron todos BECA.

However, the question in (21A) already includes *todos*, even if it is not floated. This seems to suggest that *todos los estudiantes* (‘all the students’) is present in the context in which (21B1) is uttered. This may speak in favor of a topic interpretation, a fact also mentioned by Valmala.

Summing up, the different configurations in which FQ occurs are as follows (where *CF* stands for contrastive focus, *IF* for information focus and *n* for neutral):

- (22) ... FQ<sub>(CF)</sub> verbal complex FQ<sub>(n/CF)</sub> object FQ<sub>(IF/CF)</sub>

Another important aspect of the FQ construction which Valmala examines is the status of what he calls “the associate” (AS), that is, the DP which corresponds to the restriction of the quantifier in the canonical quantification versions. He claims that when a quantifier is floated away, the subject associate is always interpreted as carrying some non-neutral information: it can occur sentence finally as information focus, with the Q in neutral position; it can occur as contrastive focus in different positions, the FQ being in the same neutral position; or it can occur as a topic, with the Q in either neutral or focus position. To summarize, a subject associate in preverbal position may be a contrastive focus or a topic, and in postverbal final position it can be contrastive or information focus:

<sup>7</sup> Information Focus is considered to convey new information without introducing contrast or exhaustivity (see a.o, E.Kiss 1998)

(23) ... AS<sub>(CF/Top)</sub> ... verbal complex object AS<sub>(IF/CF)</sub>

What emerges from these two generalizations is that in an FQ configuration, the associate necessarily carries some non-neutral discourse-related information, and that the floated Q usually also carries focus-related information. Crucially, Valmala claims, floating occurs in Spanish when the Q and its associate have different discourse-related features.

## 5. NEW SOLUTIONS TO OLD PROBLEMS

### 5.1 ...eppur si muove

Recall that the debate about FQs revolved essentially around the question of the movement or base-generation of the quantificational element, the “floated” quantifier. One of the crucial assumptions of the floating-as-movement analysis (*à la* Sportiche 1988), is that the quantifier is merged with the associate-DP. And one of the counterarguments to this analysis (e.g. Bobaljik 1995) is the claim that the “floated” Q cannot have merged with the DP, as it does not behave like an argument (see also Fitzpatrick 2006 for discussion).

There is no doubt that the surface position of the floated Q is not a theta-position. The distribution of FQs with respect to various adverbials, as discussed above, is just another confirmation of this claim. However, I will depart from the standard adverbial analysis and propose that the FQ does not occur in just any adverbial position. Rather, it surfaces in a quantifier-like position. That this is a dedicated position, possibly attained by movement, can be shown if we look at the interaction of FQs with each other.

Consider Rizzi’s (2002) definition of Relativized Minimality:

- (24) Y is in a Minimal Configuration (MC) with X iff there is no Z such that
- (i) Z is of the same structural type as X, and
  - (ii) Z intervenes between X and Y

Where “structural type” is defined for locality in terms of a typology of specifiers licensed by the substantive featural content of their heads:

- (25) a. Argumental: person, number, gender, case  
 b. Quantificational: Wh, Neg, measure, focus...  
 c. Modifier: evaluative, epistemic, Neg, frequentative, celerative, measure, manner,....  
 d. Topic

Clearly, the locality constraints as defined in (24) (25) above push the traditional A/A-bar distinction further, by dividing the standard category of A-bar positions (and hence of the elements occupying them) into more fine-grained classes. What is relevant for us here is that the Quantificational class includes quantifiers proper as well as other elements which have some quantificational component, such as focus, negation, *wh*-elements. Intervention effects are thus predicted to operate on exactly these categories, provided that the elements occupy a non-argumental position. In other words, quantifiers are predicted to block the extraction/movement of other quantifiers, provided that the intervener occupies a quantificational (A-bar) position. This is indeed confirmed by the examples below:

- (26) a. Chacun des magiciens a transformé tous les clowns.  
Each of-the magicians has transformed all the clowns.  
b. Tous les magiciens ont transformé chacun des clowns.  
All the magicians have transformed each of-the clowns.
- (27) a. Les magiciens ont **tous** transformé chacun des clowns.  
The magicians have all transformed each of-the clowns  
b. Tous les magiciens les ont **chacun** transformés en un instrument bizarre.  
All the magicians them have each transformed into an instrument strange  
'All the magicians have turned them each into a strange instrument.'  
c. \*Les magiciens les ont **tous chacun** transformés en un instrument bizarre.  
The magicians them have all each transformed into an instrument strange  
(int: the magicians have all transformed each one of them into a strange instrument)

In (26a) *chacun* is part of a (quantified) DP occupying the subject position, which we can assume to belong to the class of Argumental positions (specifiers). Similarly, the object quantified DP *tous les clowns* occupies an argument position. The same holds for (26b). In (27) the two quantifiers have been floated. (27a) illustrates the fact that floating only subject *tous* is perfectly fine. Since the object *chacun des clowns* occurs in its canonical object position, no intervention effect is expected. Similarly, in (27b), *chacun* is floated, but *tous* occurs in a canonical quantification configuration in the subject position, and occupies an Argumental position. It is again expected not to intervene. In (27c), both quantifiers have been floated, and the sentence is ungrammatical. A possible conclusion can be that indeed, the movement of *tous* to some quantificational position is blocked by the intervention of *chacun*.

Obviously, an immediate objection to this conclusion is that the ungrammaticality of (27c) might "simply" be due to the fact that the two quantifiers compete for the same position. However, the kind of intervention effect observed in (27) has hardly ever been observed, to my knowledge at least. Indeed, most co-occurrences of FQs are presented in the configuration given in (28) below:

- (28) a. Les magiciens ont **chacun** transformé tous les clowns.  
The magicians have each transformed all the clowns.  
b. Chacun des magiciens les a **tous** transformés.  
each of the magicians them have all transformed  
c. ? Les magiciens les ont **chacun tous** transformés (en instruments bizarres)  
The magicians them have each all transformed (into instruments strange)  
'The magicians have each transformed them all into strange instruments.'

(28) is an example parallel to (27), differing from the latter only in the fact that the two quantifiers have been reversed. The subject FQ is *chacun*, and it can float exactly like *tous* (28a). Similarly, object *tous* floats, provided that its associate DP is pronominalized (28b). However, contrary to what was observed in (27c), a combination of the two FQs is at worst slightly degraded. This confirms that the two quantifiers do not compete for the same position. But at the same time, it raises another question. If (27c) is ruled out because of RM, why is (28c) not assigned the same level of ungrammaticality?

I will here build on the analysis of French quantifiers developed in Baunaz (2011). Baunaz examines different types of quantifiers and proposes to decompose them into more atomic features. Although *chacun* and *tous* both belong to quantificational elements, as defined in Rizzi (2002), they can further be distinguished. Baunaz argues that *tous* is a

quantificational element which bears a feature she labels “partitive” in that it yields an interpretation in which the set it quantifies over must be exhausted but with no precise specification as to the individual identity of the members of the set. *Chacun*, on the other hand, has a component which yields a specific interpretation.<sup>8</sup> Therefore, although they both belong to the class of quantificational elements, I will assume that *tous* and *chacun* have different feature compositions, or rather that while *tous* is [quant] and [part], *chacun* has a richer set, namely [quant], [part] and [spec]. Indeed, an element which yields a specific interpretation, namely that of pointing to a specific entity, also has to include the interpretation that there is a given set of entities (non-null and possibly singleton) from which it draws its unique referent.

This approach, developed in Baunaz (2011), has strong implications for the interaction between elements bearing similar feature sets. Baunaz’ approach is itself based on a version of RM developed in Starke (2001). Given a feature set  $\alpha, \beta, \gamma$ , the movement of an element bearing a subset of this feature set will be blocked by any element bearing the same feature subset (this corresponds to standard RM), but also by any element endowed with a larger subset of the same features. On the other hand, an element bearing a larger (sub)set of the relevant features will not be blocked by some element with a smaller subset of features.<sup>9</sup> This is illustrated in (29):

- (29) a. \* $Q_{\beta, \gamma} \dots Q_{\beta, \gamma} \dots Q_{\beta, \gamma}$   
 b. \* $Q_{\beta, \gamma} \dots Q_{\alpha, \beta, \gamma} \dots Q_{\beta, \gamma}$   
 c.  $Q_{\alpha, \beta, \gamma} \dots Q_{\beta, \gamma} \dots Q_{\alpha, \beta, \gamma}$

Baunaz also argues that these features are hierarchically organized and are in a containment relation: all specific Qs are also partitive, and all partitive Qs are also Q:

- (30) given  $Q < Q_{\text{partitive}} < Q_{\text{specific}}$   
 $*Q_i \dots Q_n \dots Q_i$  iff  $Q_n \geq Q_i$   
 [Baunaz 2011:219]

The prediction is then that *chacun* should block movement of *tous*, but *tous* should not intervene in the movement of *chacun*. This is exactly what (27), (28) show.

I conclude thus that floating *tous* moves to a position which counts as an intervening position for another quantifier. Note that the ban on A-bar movement with respect to FQs, discussed in the literature, can be accounted for straightforwardly. Fitzpatrick (2006) claims that only A-movement is licensed with (French type) FQs. However, he gives this curious contrast:

- (31) a. \*les livres que j’ai **tous** lus sont sur la table.  
 The books that I-have all read are on the table  
 b. J’ai vendu les livres que j’ai **chacun** lus au moins trois fois  
 I-have sold the books that I-have each read at least three times  
 [Fitzpatrick 2006]

To account for the contrast in (31), Fitzpatrick has to resort to particular movements of Qs in French. In the current approach, the contrast may be explained: while floated *tous* bears a

<sup>8</sup> By specific, Baunaz means that the speaker has some specific entity in mind within the set *chacun* quantifies over.

<sup>9</sup> Actually, whereas Starke’s 2001 original proposal only mentions larger (or heavier) feature sets, later work has developed, very much in the way Baunaz (2011) does as well, the idea that these features are hierarchically organized.

feature set maximally including the feature [partitive], the set of *chacun* is larger, as it also contains [specific]. Under the assumption that relativization involves some quantificational chain, one might consider that the quantificational chain includes an operator with (at most) the same feature set as *tous*, but lacks the feature [specific], allowing *chacun* to move without creating any intervention effect.<sup>10</sup>

## 5.2 Move...but where? and why? or the Focus illusion

In this section I propose that QF involves movement to designated positions. However, contra Valmala, I will argue that quantifiers can only surface in designated quantifier positions, the properties of which are essentially related to the effects these positions have on the interpretation of the quantifiers. It will turn out that this creates the illusion of Focus in some cases, while leading to apparent “neutral” readings in other cases.

Recall that Valmala proposes that FQs in Spanish appear in a focus-related position. There seem to be several problems with this proposal with respect to French FQs.

First, the range of possible landing sites for the FQ does not correspond to what is recognized as possible Focus positions in French. (Contrastive) Foci occur “in situ”, that is in the subject position (32a) or the object position (32b). Corrective Focus may also apply to canonical quantification in subject position (33), even if the correction targets a subpart of the constituent, namely the quantifier itself (33b):<sup>11</sup>

- (32) a. Est-ce que les magiciens ont reçu une cravate?  
‘Did the magicians receive a tie?’  
b. Non, LES CLOWNS ont reçu une cravate.  
No THE CLOWNS have received a tie  
c. Non. Les magiciens ont reçu une BAGUETTE MAGIQUE.  
No. The magicians have received a MAGIC WAND.
- (33) a. Il paraît que certains clowns n’ont pas reçu de cravate.  
‘It seems that some clowns have not received a tie’.  
b. Faux. TOUS les clowns ont reçu une cravate.  
Wron. ALL the clowns have received a tie.

Second, that FQs would only sit in a dedicated Focus position is also problematic. Recall that Valmala proposes that FQs surface in (at least) three different positions:

- (34) FQ<sub>(CF)</sub> verbal complex FQ<sub>(n/CF)</sub> object FQ<sub>(IF/CF)</sub>

Although one could make use of a “low” Focus position *à la* Belletti (see Belletti 2004), it seems difficult to associate FQs, and in general quantificational material with a dedicated post object Focus position. Moreover, the alternation between the CF and neutral interpretations

<sup>10</sup> A full analysis of relative clauses from this perspective is well beyond the scope of the paper, and I have not fully examined the consequences of any such analysis, but the data in (31), with its characteristic contrast, seems to fit.

<sup>11</sup> Actually, if the CQ is contrastive, as in (33b), there is a strong accent on *tous* followed by deaccenting on the restriction, showing that the contrast targets part of the subject constituent, namely *certain*s versus *tous*.

of the FQ in the middle position seems to suggest that it is not actually a Focus position (or, as one might want to extrapolate, that there may be two FQ positions).

I will rather offer an alternative motivation, based on the interpretive properties of FQs. I have established that FQs trigger a distributive reading. The distributive versus collective reading is not a matter of pragmatic effect, but seems to be associated with given positions. *Tous*, associated with a DP, is by default collective. It can occur in a subject position and in base-generated argument positions. However, distributive *tous* is only licensed in some positions. I will propose that clausal structures include one or several clause-medial quantificational position(s). As also noted in Cinque (1999), quantifiers do not occur in regular adverbial positions, but appear to have their own hierarchy. These positions, which seem to interleave with adverbial positions, host a Dist(ributive) operator (see e.g. Brisson 1998). They license FQs with a feature [dist] and assign them wide scope (note that a similar lower DistP is also proposed in Szabolcsi (1997) for Hungarian).

Under such an analysis, the motivation for FQ appears quite clearly. *Tous* floats when it has a [dist] feature. The absence of a [dist] feature yields a collective interpretation (by default), which is available in positions in which the quantifier can occur associated with a DP. That the default reading is indeed collective is reinforced by data from Hungarian, a language which makes liberal use of its left periphery for various interpretive encodings. Consider the pair in (35):

- (35) a. Egy varázsló eltüntetett **minden bohócot**.  
 A magician-nom part-made-disappear all clown-acc  
 ‘A magician made all the clowns disappear’. (=collective).  
 b. **Minden bohócot** eltüntetett egy varázsló.  
 all clown-acc part-made-disappear a magician  
 ‘Some magician made all the clowns disappear’. (= distributive)  
 [= for all clowns, some magician made him disappear]

In (35a), the quantified DP *minden bohócot* (‘all the clowns’) occurs in a post-verbal position.<sup>12</sup> In (35b), the same quantified DP occurs in a preverbal position, in the left periphery. However, it is not a Focus position, as is attested by the order particle-verb.<sup>13</sup> Rather, it is a left-peripheral quantifier position, dedicated to quantifiers with a distributive reading (see also Szabolcsi 1997). Quantifiers occurring in a CQ in an object position will then receive a default collective reading. A distributive reading, that is, a situation in which the quantifier is endowed with a [dist] feature, will only be licensed in a dedicated quantificational position associated with the feature [dist].

Subject CQs in French, which occupy a default Argumental position, will be associated with a collective reading. In other words, only a quantifier which is not associated with a [dist] feature will be licensed as subject CQ. The quantifier with distributive reading, on the other hand, is licensed in the dedicated quantifier position above manner adverbs which licenses the

<sup>12</sup> We might assume it is an argument position (see e.g. E-Kiss 2002)

<sup>13</sup> In Hungarian, the order of the verbal particle (here, the particle *el* has a completive and directional meaning ‘away’) and the verb itself are used as a diagnostic for the presence of a focus in the dedicated Focus position. When some element occupies the preverbal FocP, the particle follows the verb:

(i) A VARÁZSLÓ tüntette el a bohócot  
 The magician made-disappear part the clown-acc

‘It is the magician who made the clown disappear.’

(ii) A BOHÓCOT tüntette el a varázsló

The clown-acc made-disappear part the magician

‘It is the clown that the magician made disappear.’

[dist] feature. But when the associate of a [dist] bearing quantifier is a subject, it must surface in the canonical subject position. Hence the floating.

A similar analysis can apply to object FQs. When object *tous* occurs in a quantified DP in situ, it can only have a default collective reading. A [dist] bearing *tous* is not licensed. However, as opposed to subject FQs, a quantifier does not seem to be able to strand its full DP restriction. Only when it is associated with a pronoun can the Q float: the pronoun, because of its own properties, cliticises onto T. The quantifier can then move to some Q position (as was already proposed by Kayne 1975).

Recall that object floated *tous* comes in two flavors. It can occur in the mid-clause area (above manner adverbs), have a distributive interpretation and bear an emphatic marking. I will propose that in this case, it occupies the same lower Dist position as the one proposed for subject-associated FQs. But it was also noted that it can occur lower (with respect to adverbials), in which case it does not have the distributive reading. This suggests that there is a second quantifier position, which differs from the previous one in that it does not license distributive Qs.<sup>14</sup> That there are indeed two different quantifier positions in the mid-clause area is confirmed by the following:

- (36) a. **Tous** les magiciens ont transformé **toutes** les colombes en pianos.  
All the magicians have turned all-fem the doves into pianos.  
b. Les magiciens les ont **tous toutes** transformées en pianos.  
The magicians then have all all-fem. turned into pianos

First, the intonation pattern is very clear: the first *tous* gets a stress, while the second one is deaccented. The reverse pattern is not acceptable.<sup>15</sup> Second, the interpretation corresponds to a distributive reading on *tous*, and a default collective reading on *toutes*. In other words, (36b) can only mean that the magicians, individually, turned the doves into pianos (whether the doves, as distributees, were all turned into pianos individually, in small groups or as a whole group, with individual events as distributees is unspecified).<sup>16</sup> Clearly, the stress patterns described here indicate that whenever a quantifier has a distributive reading, it is associated with some stress. I propose that what appears to be Focus marking is actually distributive marking (recall that Focus marking *per se* is not a property of UQs). I take it that, like in many other cases which need to be explored, emphasis is a signal of (or is associated with) some interpretive feature, here distributivity.<sup>17</sup> It turns out thus that the focusing of FQs is in fact an illusion.

## 6. CONCLUSION

<sup>14</sup> This obviously needs to be investigated in more details. Recall however that Valmala observes that FQs in Spanish may have a “neutral” reading in the mid-clause position.

<sup>15</sup> If *tous* object needs to be accented, only the non-floated (default collective) version of subject *tous* is possible :

(i) Tous les magiciens les ont “toutes transformées en pianos.  
All the magicians then have “all-fem turned into pianos.

<sup>16</sup> I am aware of the fact that the data in (36) is a potential problem for the locality approach developed here. However, it is not clear whether (i) the default collective reading low position is an actual quantificational position, and (ii) the collective/distributive properties of quantifiers might not also be considered as resulting from two kinds of featural compositions in a hierarchical relation. This is left for future research.

<sup>17</sup> Typically, focusing does not have to trigger distributivity. Therefore, a blind association of FQ with a Focus position appears to be missing part of the point.

In this paper, I have put some old and new data on Floating quantification in French under close scrutiny. I have focused on some interpretive facts which have up to now remained unnoticed. I have shown that FQs, in addition to bearing intonational marking which may have been interpreted as Focus, also display distributive and (default) collective readings depending on their positions in the clause.

I have proposed that what looks like focusing of FQs is in fact an illusion of Focus, created by the fact that distributive Qs have to occupy a dedicated quantifier position with a distributive property (i.e. which is associated with a distributive reading) and with a non-default accentuation. Languages may vary as to the availability of this kind of position in the left periphery: while Hungarian is a language which seems to make wide use of such a left-peripheral position, French does not. When a quantified DP occurs in a subject or argument-related position, it by default gets a non-distributive (i.e. collective) reading. Distributivity is licensed in the mid-clause quantifier position (as probably in many languages, including Hungarian, see Szabolcsi 1997). However, the constraints on subjects and on clitic objects in French do not allow full DPs to surface in these positions, and only the stranding (floating) of the quantifier can prevent the string from crashing altogether.

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