A Theory of Floating Quantifiers

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A THEORY OF FLOATING QUANTIFIERS[1]

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Koopman & Sportiche (1985), (1987) propose that the structure of
S=IP be assumed to always be as in (1), linear order aside.[2]

(1)
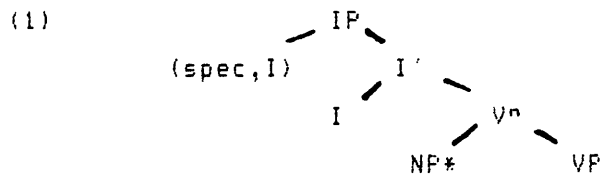
where NP* is the canonical subject position (of VP), and V^n some
projection of V in the X-bar system.[3]
They furthermore argue that in languages like French or English, or
Dutch... (but not in languages like Japanese, Chinese, Irish or
Italian...) an overt NP subject, although it is base generated in
the position NP*, must appear in (spec,I) position at S-structure.
In other words, it must be "moved" from NP* to (spec,I). The
parametric variation between the two classes of languages mentioned
stems from whether or not this movement is obligatory.

Here, I outline a treatment of the floating quantifiers phenomenon.
I claim that its properties receive an explanatory account if the
structure in (1) is assumed. Although I will discuss mostly
floating quantifiers in French, this treatment is meant to have
much wider relevance, naturally.

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1. Floating quantifiers in French are illustrated in (2):

(2)   i. Tous les enfants ont vu ce film
      ii. Les enfants ont tous vu ce film

In (ii), a quantifier--Q or the floated Q--appears non-adjacent and
to the right of some NP--which we will note NP^--here *les enfants*.
Floating quantifiers are so called because they appear in structures
like (i) and in structures like (ii) above. This juxtaposition is
not accidental: it seems rather obvious that any syntactic analysis
of this construction hold some implicit or explicit view about the
semantic properties of *tous* in each sentence of (2). For some
syntactic analyses, including those juxtaposing (2i) and (2ii), the
two sentences are closely related or identical at some level of
syntactic representation precisely because Q universally quantifies
over the set denoted by NP^ in both of these sentences: the Q is of
the same logical type in both. This is in fact the view I adopt,
which is the most common view held by generative grammarians.
However, another course is conceivable. One could maintain that
even though the quantificational properties of (2i) and (2ii) are
identical, there is no syntactic correlate of this identity. The
very same conclusion can be reached from a different point of view:
if it is held that no semantic identity of the relevant sort relates
(2i) and (2ii), it would then seem natural to assume that no
syntactic identity of the relevant sort holds either. The truth
conditions of the members of pairs related as in (2) are in most
instances identical (more on this in section 6.2) but it could be
claimed that their semantic representations are nevertheless
different. This is, for example the view put forth in Brodie & Dowty
(1984), who propose that Determiner Q's are NP quantifiers, while
floated Q's are VP quantifiers, a different logical type.
I discuss briefly in section 7 this view, according to which there
is no syntactic relation between (2i) and (2ii).
I have used the term determiner Q's. It ambiguously refers to Q's
like *each* both in *Each man left* and in *Each of the men left*. The
latter, we might call partitive Q's. French suggests that floated
structures correspond to partitive structures: the first *each*
translates as *chaque* which does not float, while the second one
corresponds to *chacun* which does float. This is what I will assume
throughout: the related pairs are of the type *Each of the men left /
The men each left* and not *Each man left /The men each left*.[4]

2. Let us begin by what we need to say about floating quantifiers.
Typically, quantifiers appear (in French) in initial position
(perhaps specifier position) of NP's. Floating quantifiers form a
strict subset of this set: they both appear in NP-initial position
and by themselves. Minimally, then, we must state:

(3)   (Floating) quantifiers may appear in NP-initial position

This statement might itself be derivable from other considerations
regarding the lexico-semantic properties of quantifiers. We put
this question aside here. Regardless of what is thought of the
semantic properties of (2i) and (2ii), it is quite clear that the

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best possible analysis of floating quantifier structures is one in
which nothing needs to be said beyond (3). This is precisely what I
will argue the adoption of (1) makes possible. In effect, then, I
will argue that there is no process of Q-Float. Quantifiers simply
appear adjacent to NP's.

3. Let us now consider (2ii). In it, Q appears between INFL
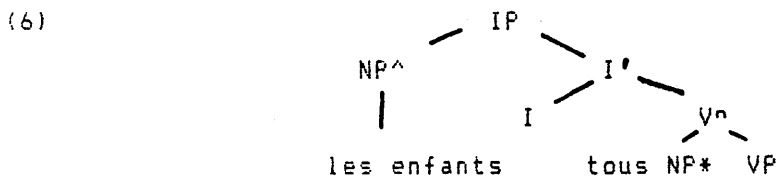material and VP material. This is illustrated by the following
forms:

(4)   i.   Les enfants (*tous) ont (tous) vu (*tous) ce film (*tous)
       ii. Les enfants (*tous) verront (tous) ce film (tous)

Emonds (1976) shows on independent grounds that French tensed verbs
appear in INFL at S-structure. In both examples of (4), the tensed
verb is in INFL and the only allowable position for Q is right after
INFL.

3.1. If nothing else than (3) needs to be stipulated, we are led to
postulate the presence of an empty NP to the right of Q in all of
these cases. Therefore, corresponding to (2ii), we are led to
postulate that (2ii) contains the following substructure:

(5)

```
                        IP
              NP^              I'
              |                 /
           les enfants     I   tous NP* ...
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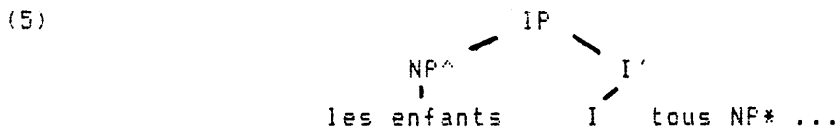
namely, a substructure in which the postulated empty NP* appears
between I and VP and right after INFL. It is clear that Koopman &
Sportiche's hypothesis mentioned in (1) above provides a rationale
for such a structure, namely (6).

(6)

```
                          IP
            NP^                 I'
             |                 /      \
                          I            V^
           les enfants        tous NP*   VP
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In other words, given (1), we expect, quite independently of the
distribution of Q's, to find a NP precisely right after INFL.
Consequently, nothing needs to be added to (3) concerning the
position of Q in (2ii). Naturally, the force of this explanation
rests on two premises. First, the fact that NP* and VP are sisters
as in the structure (1) must be independantly motivated. I believe
that it is, and that the independent motivations are compelling. I
refer the reader to Koopman & Sportiche (1985), (1987), Sportiche
(1987) and the references in footnote 2. Secondly, the fact that in
French, NP* is a left sister of VP must also be independently
motivated. This is simply the question of what the relation of NP*
to V^ in (1) is. Again, it is argued in the references cited that
NP* is either the subject of a small clause with VP head, or in
(spec,V) position. In either case, such an element is initial of
its phrase in French, i.e., NP* precedes VP since the subject of a

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small clause precedes its predicate, and the specifier of a category
X is XP initial.[5]

3.2.1. Let us now examine the alternatives. In order to explain
the appearance of Q between I and VP, it is suggested in all the
syntactic analyses I know of that a Q has adverbial properties (cf.
e.g., Kayne, 1975, Belletti, 1982, Jaeggli, 1982, Klein, 1976...)[6],
and that Q appears between I and VP because adverbs appear there.
The merit of such a proposal cannot be evaluated before further
questions are answered: (i) what kind of adverb is a Q, (ii) what is
the distribution of each kind of adverb, (iii) what is the
distribution of the class of adverbs Q's belong to, and finally and
most importantly, (iv) what governs the distribution of each type of
adverb, i.e why do adverbs appear where they do. Once all this is
established, the assumption that the distribution of Q follows from
it being an adverb can be evaluated.
Adverbs come in several kinds. Borrowing terminology and
observations from Jackendoff (1972), let us restrict our attention
to the following interpretive classes:

        (i)   Sentential adverbs: probably, certainly, possibly
        (ii) Manner adverbs: slowly, painstakingly
        (iii) Subject-oriented adverbs: cleverly, intelligently

If we consider the distribution of these adverbs in French, it turns
out that they may all appear between I and VP. So that assimilating
Q to an adverb does seem to provide at least a descriptively
adequate account, no matter what kind of adverbs Q's are.
However, if we ask why adverbs appear where they do, some further
elaboration is required, which casts doubt on the adverbial status
of Q. Consider for example a sentential adverb like *probably*. From
the equivalence of *John will probably leave* and *It is probable that
John will leave*, it appears that *probably* should be considered as
modifying some constituent equal or larger than IP, since the
propositional content and the modals and Tense are in the scope of
these adverbs. From this, we can predict its distribution by
adopting the principle in (7), a principle implicitly or explicitly
assumed by most syntacticians:

(7)   Adjunct Projection Principle[7]
        If X "modifies" some (semantic) type Y, and X and Y
        are syntactically realized as a and b, a is projected
        as adjacent to b, or to the head of b.

This principle establishes a direct connection between the lexical
meaning of modifiers and the syntactic configuration in which they
appear. It is the analogue of the Projection Principle for thematic
structure: an argument of some predicate is projected as sister of
this predicate (because O-marking requires sisterhood). The Adjunct
Projection Principle states a similar generalization for non-
arguments.[8] It seems rather clear that some such principle must
hold. It can be seen as part of the language learner's apparatus for
the projection of syntactic structures from word properties. (7)
thus appears both natural on syntactic grounds and conceptually
plausible.

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Note that (7) states a necessary but not sufficient condition. It
inventories possible positions for modifiers, but not actual
positions. Note also that (7) does not say anything of adverbs in
general, but only of those the lexical meaning of which make clear
what they can modify (cf. Jackendoff's 1972 discussion of
utterly,...). Note finally that (7) does not specify how adjacency
is realized in terms of constituent structure. Although in general,
it may be sisterhood, it is conceivable that certain adverbs, are
not actually part of a tree structure, but rather only linearly
related to its string (as in the case of parentheticals).
(8) illustrates that (7) correctly predicts the distribution of
sentential adverbs:

(8) i.   Probably, John left   (adjacent to IP)
     ii. John probably will leave   (adjacent to I)
     iii. John will probably leave   ("   "   )
     iv. *John will buy probably shoes (inside VP)

The same can be said of manner adverbials, which we take to be verb
or VP modifiers: manner adverbials can be subcategorized by verbs
(e.g. *to word*) and are often incorporated into verb meanings (e.g.
electrocute, drown...) When an adverb is interpreted as a manner
adverb, it is predicted to appear adjacent to VP or V (the reader
may check the validity of this prediction by consulting, for
instance, the examples in Jackendoff, 1972, chapter 3).
Returning now to our main concern, consider floating Q's. They have
neither the distribution of sentential adverbs, nor that of manner
adverbs. Note in particular that they do not have the distributon of
the subset of manner adverbs which impose restrictions on the nature
of the subject, e.g. *collectively, two by two*... Nor do they have
the distribution of any other kind of adverb (temporal, speaker
oriented...). In terms of distribution, Q's in fact come closest to
subject oriented adverbs. It would seem then that Q's should be
assimilated to subject oriented adverbs (although I think it is
semantically implausible for the reasons mentioned below). However
it is immediately apparent that both subject oriented adverbs and
floating quantifiers constitute exceptions to (7), if the standard
clausal structure is adopted, rather than (1). In other words,
assimilating Q's to subject oriented adverbs yields a descriptively
adequate account, but fails to provide a reason why their
distribution is what it is. If (1) is adopted on the other hand,
the distribution of Q's follows by virtue of (7). Q's appear
adjacent to the NP they modify, namely NP*. However, if (1) is
adopted, there is no need to attribute any adverbial properties to
Q's. (3) and (7) together suffice to predict the distribution of Q.
It also turns out that the a priori plausibility of considering
floated Q's as adverbs in order to describe their distribution is an
artifact of concentrating on French (or English). In other
languages, e.g. Moore, a Gur language form Burkina Fasso, a
floating quantifier may appear between I and VP, but no adverb may,
as Tellier (1986) discusses. Similarly, in Kilega, a Bantu language
from Zaire, only subject modifiers may appear between I and VP, as
Kinyalolo (1986) shows.

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What about subject oriented adverbs? If we follow Jackendoff (1972), subject oriented adverbs "modify" both NP* and the propositional content of their clause: they should, according to (7), appear adjacent both to the subject (i.e. NP* or NP^ in (1)) and to some syntactic constituent equal to or larger than V^n.[9] This is exactly what they do. If the proposal of Jackendoff (1972) (or the one of footnote 10) is correct, it makes the assimilation of Qs and subject oriented adverbs quite suspicious since Subject oriented adverbs and Q's would be of different semantic types.[10]

3.2.2. This account makes predictions about the relative ordering of sentential adverbs, subject oriented adverbs and Q's, and manner adverbs. Given the structure (1):

(1) $[_{I'}$ I $[_{V_n}$ NP* VP]]

If all the above mentioned adverbs appear between I and VP, they must appear precisely in the order: sentential adverbs, subject oriented advers, Q's, manner adverbs. Because manner adverbs and subject oriented adverbs basically differ only in the position they occupy, some care is needed: Consider therefore a case where the presence of a manner adverb is required by the verb, as with *formuler soigneusement* (word carefully). We get the following:

(9)   Les enfants ont probablement intelligemment tous
           soigneusement formule leur demande.

The order of the four underscored elements is the only possible one, if they all appear between I and VP and *intelligemment* has the subject oriented reading.

4.1 The relation between NP^ and Q seems to obey two conditions that antecedent/anaphor relations obey. First, Q must be c-commanded by NP^. Corresponding to (10i), we cannot get (10ii):

(10)   i. L'auteur de tous ces livres a vu ce film.
         ii. *L'auteur de ces livres a tous vu ce film.

Secondly, the relation between NP* and Q must be local, as shown in (11), in which NP^ is not contained in the first clause containing Q.

(11)   *Les enfants l'ont persuade [de tous acheter ce journal]

These two properties immediately follow from the analysis we propose. Adopting (1) in French means that there is an NP-movement relation between NP^ and NP*. NP* being the trace of NP^ is independently known to behave like an anaphor whose antecedent is NP^. Because Q is adjacent to NP*, the illusion is created that antecedent/anaphor properties hold of the pair NP^/Q.

4.2. Let us consider proposed alternatives. They all consist in claiming in one form or another that Q is an anaphor (cf. Belletti, 1982, Jaeggli, 1982, Kayne, 1983...). A priori, this is not desirable. Typically, anaphors are elements with a referential

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function which are referentially dependent upon another category (as, e.g., Xself, each other). Q does not seem to fit this description.[11] In any case, holding that Q (or its trace) is an anaphor faces serious difficulties. In French, a quantifier like *tous* can not only "float" rightward, it can also appear to the left of the NP it quantifies over. This construction is extensively discussed in Kayne, 1975 and Kayne, 1983. We have the following paradigm:

(12)   i.   Jean aurait aime oser rencontrer tous les enfants
       ii. Jean aurait ^ aime ^ oser ^ les rencontrer ^

where *tous* may appear in any ^ position. Several observations are relevant here. This process is not limited to *tous*. It may also affect NP's, provided that they exhaustively dominate a noun quantifier, e.g. *tous* (everything) and *rien* (nothing), but not *chacun* (every).[12] *Tous* (or *tout* or *rien*) can appear in its base position. If *tous* appears to the left of its "base" position, it appears at a left VP-boundary. It seems rather clear that there is no way in which *tous* could be treated as an anaphor in these cases since it is not c-commanded by its antecedent. Note furthermore that no argument to the effect that the sequence of verbs in (12) has been reanalyzed as a single unit would be sufficient to circumvent the fact that *tous* does not have to appear in the same clause as its antecedent. (13) demonstrates this point:

(13)   i.   Il faut$_i$ tous [$_{VP}$ e$_i$ [$_{CP}$ qu'ilspartent]] [13]
       ii. Il a tous [$_{VP}$ fallu [$_{CP}$ qu'ils partent]]
       iii. Il a tous [$_{VP}$ fallu [$_{CP}$ qu'on les lise]]

Of course, the question arises of how to analyze this construction and whether it forms a single phenomenon with Q-Float. These two processes clearly have different syntactic properties, for example, the fact that they affect different elements (cf. below for one further example), or the fact that leftward q-float of *tous* can take place only if its NP is empty or a pronominal clitic. One suggestive observation is that although rightward Q-Float is found in many Indo-european languages, leftward Q-Float is, to my knowledge, only found in French (Japanese might be another case). A very natural analysis makes it a syntactic instance of May's (1977, 1985) rule of QR. This would be an overt counterpart of a covert process, a common situation (cf. wh-phrases properties in Chinese-- Huang, 1981). It would also relate the fact that leftward Q-Float is "movement" to a left VP-boundary to the general theory of adjunction put forth in Chomsky (1986), since QR is an adjunction rule, where adjunction is only possible to VP. Let me stress one important aspect of this analysis: there is no need whatsoever to postulate different *tous*. Rightward Q-Float, we propose, is not a process affecting quantifiers. Leftward Q-Float on the other hand is.

This analysis makes a prediction that the facts bear out. It predicts that in a simple clause, a rightward floated Q will always precede a leftward VP-adjoined Q since a rightward floated Q is adjacent to V^n in (1).

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(14)     i.  Les enfants les ont tous tous lu
        ii.  Les enfants ont tous tout lu
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Only the indicated order is possible in the (ii) sentence. In the
first one, the first *tous* must be interpreted as being related to
the subject, the second to the (clitic) object.

5.1. Consider next the following question. What characterizes the
set of NP's Q's can float rightward from? Our analysis offers a
straightforward answer: anytime a Q appears adjacent to an empty
NP, the illusion of floating will be created. In French, these
possibilities are illustrated with every kind of empty category:

```
(15)      i.  Les enfant ont tous mange        (NP-trace)
         ii.  Les enfants sont censes tous refuser (NP-trace)
        iii.  Ces livres, que j'ai lu tous      (Wh-trace)
         iv.  Il aurait fallu tous partir       (PRO)
          v.  Ils ont decide de tous partir     (PRO)
         vi.  Tous ont decide de venir          (pro)[14]
```

In other case involving NP-movement, we predict the following
paradigm:

```
(16)      i.  Les enfants ont ete vus tous    (NP-trace)
         ii.  Les enfants sont venus tous     (NP-trace)
        iii.  *Les enfants ont dormi tous     (no empty category)
```

where (16i) is a case of Passive, and (16ii) contains an
unaccusative or ergative verb (Perlmutter, 1978, Burzio, 1985), and
(16iii) contains no postverbal empty category. Although I think
that there is a contrast in the indicated direction, both (16i) and
(16ii) seem slightly deviant. I have no explanation for this fact.
However, it seems fairly general with postverbal quantifiers in
comparable structures. So, (15iii) is comparable to (16i) and
(16ii), and so are sentences where the postverbal quantifier is an
NP, viz *?il a mange tout, ?il n'a mange rien*.[15] In all these cases,
the preferred option is to adjoin the Q to VP, as discussed above.

5.2. Pursuing this matter and abstracting away from the effects of
leftward QR, let us examine cases where the presence of Q reveals
that of an empty category. If some independent support can be found
for the existence of an empty category, it strengthens our
contention that Q's only appear next to NP's. Consider the following
forms:

```
(17)      i.  Jean a mis toutes les lettres dans la boite
         ii.  Jean a mis les lettres toutes dans la boite
```

This is a case of rightward Q-Float from object position. Note
first that the string *toutes dans la boite* forms a constituent (it
can be clefted, coordinated...). We are led to postulate the
following structure for (17ii):

```
(18)    [v mis] [NP les lettres] [x toutes [NP* e][dans la boite]]
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What is this NP* position? Sportiche (1987) argues that every category (CP, IP, NP, VP, PP, AP) may contain a "specifier" position allowed to contain an NP (a version of Stowell's (1983) subject across categories proposal). Accordingly, Y=PP and X=P^ (i.e. some projection of P), i.e. NP* is the "specifier" of PP. Direct evidence for this proposal can be deduced form the following facts:

(19)   i.   Les fillettes ont mis tous leurs ballons les uns pres des autres

          ii. Les fillettes ont mis tous leurs ballons les unes pres des autres

       iii. Les fillettes ont mis leurs ballons tous les uns pres de autres

       iv. *Les fillettes ont mis leurs ballons tous les unes pres des autre

If the PP contains an anaphor (here les uns-les autres), it may be bound either by the masculine object--19i--or the feminine subject--19ii. However, in the presence of a Q like tous this anaphor must be bound by the NP that the Q modifies (here the object). This is readily explained under our assumptions: the presence of tous forces the presence of NP* in the specifier position of the PP. This NP* is in turn controlled by the direct object since tous is understood to modify this direct object in both (19iii) and (19iv). But then, NP* acts as a subject for binding purposes, i.e. the anaphor les uns-les autres cannot be bound by anything but NP*. This predicts the ungrammaticality of (19iv): the gender of the anaphor conflicts with its binding requirement. Remember that tous is not an NP, as we mentioned earlier and cannot be taken to be blocking the subject in (19iv) from being the antecedent of the anaphor.[16]

In fact, a more general claim follows from this dicussion: if a floated Q forms a constituent with some XP, the XP must be understood as predicated or bound by the NP over which the Q is understood to quantify: indeed, the presence of the Q, which quantifies over some NP^, reveals the presence of an empty NP* to which Q is adjacent. In other words, the structure in question will be analysed as:

(20)   NP^ $[_{Y^n}$ Q $[_{NP*}$ e]   YP]

In which NP^, the overt antecedent of Q, is in fact the controller of NP*, itself the subject of YP. This explains a generalization made about English in Mailing (1976, p. 176) who writes: "it appears that Q-floating can apply only if the following phrase can reasonably be associated (semantically) with the NP that quantifiers binds." This generalization holds for French, too. Reanalyzing as we have done all these cases of floating as cases of control predicts this generalization. I refer the reader to Mailing's (op. cit) examples.

6. In this section, I discuss a few questions and problems that might arise in connection to this treatment of Q-float. Consider again (1). So far, I have used the terminology of movement to talk

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about the relation between NP^ in (spec,I) position and NP*.
However, nothing in this treatment requires movement in its usual
acception as, so to speak, physical displacement. It could just as
well be assumed (and this would be a position more consistent with
Sportiche, 1983) that post movement structures are "base generated",
and that NP movement relations are, roughly speaking, theta role
transmission relations.

6.1. One objection often raised against a transformational analysis
of Q-float constructions has to do with the fact that sentences
containing floated Q's do not always correspond to sentences with
determiner Q's. Taking examples from English (similar examples hold
in French), we find pairs such as *John, Bill and Mary all left* vs
All of John, Bill and Mary left. I see no real force to this
argument. The alternative to a transformational analysis is to
generate floated Q's and determiner Q's independently. Two
observations must be explained: first, floating Q's can appear as
determiner Q's; secondly floating Q's cannot always appear as
determiner Q's. None of the alternative treatments of q-float
accounts for both without some further stipulation. In a
transformational treatment (whether it is physical movement or base
generated movement), some S-structure condition is needed to exclude
certain combinations determiner Q / NP. Under a non movement base
generated treatment, some device must be introduced to explain why
determiner Q's and floated Q partially overlap.

6.2. A second objection that might raised has to do with differences
in interpretation between floated Q's and determiner Q's. Consider
for examples the pairs in (21):

(21)   i. Tous les enfants ne sont pas partis
       ii. Les enfants ne sont pas tous partis
      iii. All the children can do it
       iv. The children can all do it

In the first two examples, The universal quantifier can be in the
scope of the negation (i.e. (not(all(..)))). Only in the first
example can the negation be in the scope of the quantifier, although
not very naturally so (i.e ?(all(not(..)))). The same observation
holds of the second pair w.r.t. the relative scope of the Q and the
modal. It is rather clear that no real argument can be constructed
on that basis against the present proposal, or for that matter any
proposal embedded in a theory taking S-structures as input for
interpretive rules.

7. Let us finally consider a possibility mentioned in section 1,
namely that there is simply syntactic relation between each of the
sentences in (2). In the case of rightward Q-float, the observations
concerning the similarity with antecedent/anaphor relations of the
relation NP^/Q discussed in section 4 remain. The alternative here
is to build the locality and the c-command properties in the
semantic rule for floated Q interpretation. Basically, a floated Q
will have to be treated as some kind of VP modifier. It is clear how
the locality properties will arise. Roughly speaking, VP and Q
combine in a larger VP predicated of the subject (cf. Brodie &

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Dowty, 1984 for an example). Requiring predication under sisterhood (essentially) and requiring this VP modifier to be essentially sister or daughter to VP will derive the desired locality effect. It is difficult to do justice to such alternatives when they do not try to address the questions we have been discussing. In particular, we have tried all along not only to describe accurately the properties of floating Q's, but also to provide reasons as to why they display the properties they do. These reasons derive partially from floating Q's being Q's and might therefore follow from the semantic rule needed for their interpretation. They also derive from Q's being of the same logical type in both floated and non floated structures and consequently trigger the appearance of an adjacent NP. This explains why floated Q's display syntactic properties of determiner Q's. For example, it explains the fact that floated Q's, unlike other VP modifiers, agree in number and gender with the subject NP, or the various distributional properties noted in section 3. It also explains why there is a rather exact parallel in the semantics of floated Q's constructions and partitive Q's constructions. Finally, it explains the binding effects found in cases the floated q forms a constituent with PP's. These last cases would presumably require the assumption that floating Q can also be of of another type, namely PP-modifiers. These remarks suggest that the burden of the proof rests on the proposals postulating no syntactic relation between these constructions.

8. I have examined constructions involving a quantifier Q separated from and to the right of the NP, NP*, it seems to quantify over. The literature contains three proposals concerning their treatments in terms of the syntactic relation R between NP* and Q.

(i)   R does not exist
(ii)   R is established by coindexing (construal)
(iii) R is established by movement of Q rightward

I have argued in favor of the last logical possibility (given my general assumptions about syntactic theory) namely:

(iv)   R is established by movement of NP* leftward.

—— Notes ——

    1. Comments and questions from Hilda Koopman, Ed Keenan and the audiences at GLOW, 1985, and MIT and Amherst Linguistics colloquium series has helped improve and clarify many aspects of this article.
    2. cf. Kuroda (1986) for an almost identical proposal based on many similar considerations, and Kitagawa (1986), Zagona (1982) for very similar proposals mostly based on different considerations.
    3. This is actually a simplification that does not affect the argumentation of this article. For further details, see Koopman & Sportiche, (op. cit.).

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4. Consequently, we treat examples like (2i) as partitive structures, without de-insertion, a assumption supported by the fact that *tous* is followed by a full NP.

5. This also explains why floated Q's correspond to partitive Q's, since only partitive Q's are followed by full NP's and empty N-bars are not permitted, viz *Chaque est venu*, *Il a vu chaque*.

6. Probably, some equivalent is also true of the proposal of Brodie & Dowty (1984).

7. cf. Travis, 1984, Zubizarreta, 1982

8. Notice incidentally that a principle like (7) basically requires the adoption of (1) independently of our present considerations since INFL material such as modals "modify" (or more precisely in this case, take as complement) a proposition. This is realized as I taking V^n as complement.

9. Deciding which exactly depends on whether adverb interpreted with subject orientation take modals, Tense etc... in their scope.

10. I am in fact not entirely convinced by Jackendoff's proposal. So far as I can determine, subject orientation and manner interpretations are available for exactly the same adverbs (eventhough it is not always easy to tell the two interpretations apart). It seems rather plausible to me to claim that subject orientation has nothing to do with subjects; it might be a case of an adverb modifying V^n (or perhaps IP), where the appearance of subject modification is derivative: If John's answering the question was clever, the agent of the answering is clever.

11. Belletti 's proposal is exempt from this criticism. Belletti suggests that the Q moves next to $NP^\wedge$, for independant reasons. She then suggests that the trace of Q is an anaphor. The argument of the text based on leftward q-float applies to this proposal too since rightward q-float is clause bound but leftward Q movement is not.

12. Naturally, in these cases, the structures corresponding to (12ii) do not contain a pronoun

13. Recall that tensed verbs appear in I at S-structure in French.

14. Note here that *tous* is not an NP, viz *J'ai vu tous*.

15. This does not affect the preceding footnote. These examples are slightly deviant. The example from the preceding footnote is totally unacceptable.

16. The grammaticality of *Les enfants, les, ont [tous, [nis [les uns sur les autres],]]* also shows that *tous* itself does not block anaphoric relations.

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