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Overt QR and French Discontinuous Quantified Structures[1]

1. Introduction

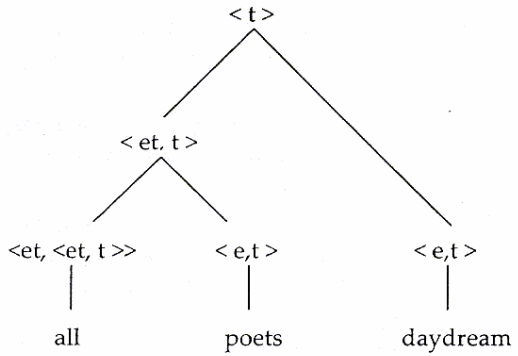
Semantic composition is dependant on sisterhood. So what are we to do when it seems like we need to compose non-adjacent elements?

Some typical determiner denotations

- all A B = $A \subseteq B$
- no A B = $A \cap B = \varnothing$
- some A B = $A \cap B \neq \varnothing$

Subject QNP

(1) All/no/some poets daydream.
[all] ([poets]) ([daydream])



[1] This is part of a research project with Heather Burnett. A large part of this presentation is due to this collaboration, although the extension to comparatives and *Too* and *Enough* constructions is my own work. I am of course responsible for all mistakes, but feel free to complain to either of us on the core issues.
Recherche subventionnée (412-2004-1002) par le CRSH, volet Les grands travaux de recherche concertée, « Modéliser le changement : les voies du français » sous la direction de France Martineau.

Object QNP

(2) John saw all the children.

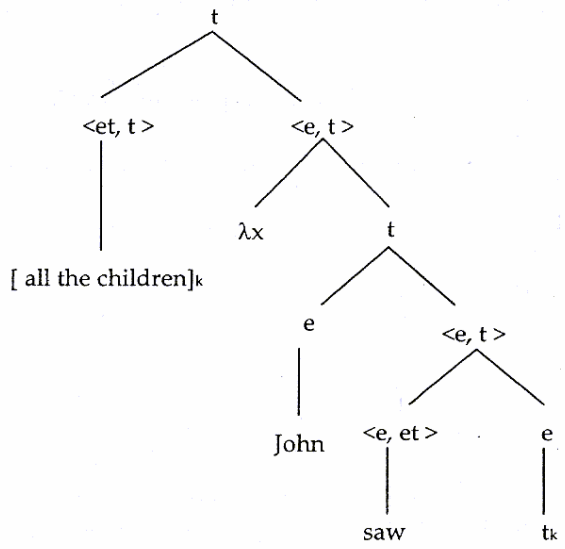
The determiner *all* can combine with the set-denoting *the children* to form a generalized quantifier of type <et, t >. However, the transitive verb *saw*, of type <e, et > cannot combine with this. The derivation is stuck on a type-mismatch.

There are many solutions in the literature:

- Cooper Storage (Cooper 1975)
- Quantifying-in (Montague 1974) } tweeking the semantics
- Quantifier Raising (May 1977)

For the purposes of this talk, we will focus on the movement approach to resolve this type-mismatch: QR.

(3)



So we know what to do with subject and object QNPs.

2- Discontinuous Quantification in French

So what's this, then?

(4) a. Jean a beaucoup vu de films.
Jean has **a-lot** seen of movies
'Jean has seen **a lot** of movies'

b. Jean a peu vu de films.
'Jean has seen **few** movies'

c. Jean a plus vu de films que moi
'Jean has seen **more** movies than me'

d. Jean a moins vu de films que moi
'Jean has seen **fewer** movies than me'

e. Jean a autant vu de films que moi
'Jean has seen **as many** movies as me'

f. Jean a trop vu de films pour comprendre la vraie vie.
'Jean has seen **too many** movies to understand real life'

g. Jean a assez vu de films pour passer son examen.
'Jean has seen **enough** movies to pass his exam'

h. Jean a tellement vu de films qu'il n'arrive plus à dormir.
'Jean has seen **so many** movies that he can't sleep anymore'

These sentences exist in competition with *canonical* quantification structures, where the underlined element is in prenominal position:

(5) Jean a vu beaucoup de films.
'John saw a lot of movies'

Three categories:

- Vague quantifiers (a, b): *beaucoup, peu, pas yab', etc.*
- Comparatives (c, d, e) : *plus, moins* and *autant.*
- (f, g, h) *trop, assez,* and *tellement.*

Although these three constructions can participate in long-distance quantification, they do not all have the same properties.

3- Vague Quantifiers

Long distance quantification with vague quantifiers was first noticed in Kayne (1975) and has since been studied extensively in Standard French (SF). (Obenauer (1983; 1994); Doetjes (1995; 1997); Heyd (2003); Mathieu (2004) among others)

However, SF QAD is a misnomer. It is not quantification over the object, but over the event :

2 arguments

1- QAD is restricted to eventive predicates.

(6) *Ce film a beaucoup impressionné de gens.
'this movie impressed a lot of people' (intended meaning)

2- The 'multiplicity of events requirement' (Obenauer 1983). QAD sentences where a single-event interpretation is forced are judged contradictory in SF.

(7) #En soulevant le couvercle, il a beaucoup trouvé de pièces d'or.
'Lifting the lid, he found a lot of gold pieces' (intended)

These judgements do not carry over to Quebec French (QF), where (6) is judged grammatical and (7) consistent. In fact, QAD is even possible with existentials in QF.

(8) Il y a beaucoup eu de gens à ta fête.
'There were a lot of people at your birthday party.'

QF QAD sentences are ambiguous between quantification over the event and over the object (Krifka's object vs. event-related readings).

(9) J'ai beaucoup réuni de gens.
'I got a lot of people together.'
1. ... for the party tonight
2. ... in my long carrier as a match-maker

As such, QF QAD is (or rather, can be) properly quantification over the object NP at a distance. This is the reading that we are interested in. Presumably, the SF reading can be achieved via the same mechanisms used for adverbials such as *often*, etc.

The core meaning of vague quantifiers can be expressed in the following way:

- beaucoup A B = | A ∩ B | > n
- peu A B = | A ∩ B | < n

(10) J'ai vu beaucoup de films:
| {x: j'ai vu x} ∩ {x. film (x) } | > n

Given this kind of denotation, we will have to appeal to the same kind of mechanism to interpret (10) as other object QNPs, namely QR.

LF for (10) : [S [DP beaucoup [NP de films]] [S J'ai vu x]]

Just as other quantifiers, vague quantifiers can participate in scope ambiguities. (11) shows this with respect to negation.

(11) Jean a pas vu beaucoup de films.
1. It is not the case that Jean has seen many movies.
2. There are many movies s. t. Jean has not seen them.

However, in QAD sentences, such ambiguities disappear and the only available reading is Neg > Beaucoup.

(12) Jean a pas beaucoup vu de films.
1. It is not the case that Jean has seen many movies.
2. #There are many movies s. t. Jean has not seen them.

4- Amount Comparatives

As far as I know, long distance comparatives in French have not been studied by anyone. However, see Hackl (2001) for an insightful view on amount comparatives and von Stechow (1984) for an overview of the literature on comparatives.

The denotation of a comparative statement is a relation between a value expressed in the matrix clause and another value expressed in the complement clause:

(13) John is taller than Bill (is tall).
= 'The maximal degree d to which John is tall is higher than the maximal degree d' to which Bill is tall.'

There are three basic pieces to a comparative sentence (Heim 2000).

1. A gradable predicate (*tall*)
2. A standard of comparison (*than Bill is tall*)
3. A comparative relation (*-er*)

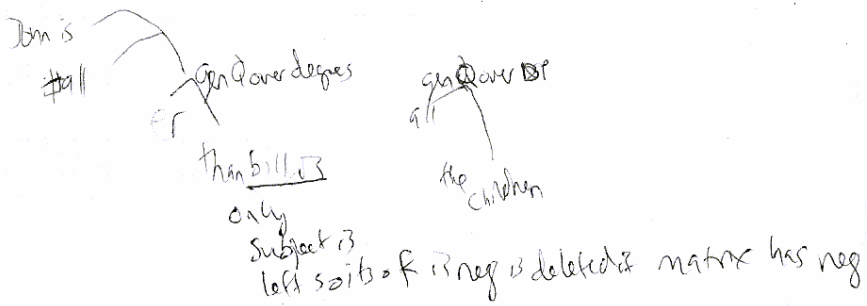
In (13), the constituent [*-er than Bill is tall*] denotes a degree quantifier.

(14) $[\text{-er}] = \lambda D_{<d,t>}.\ \lambda D'_{<d,t>}.\ \text{Max}(D) < \text{Max}(D')$

Since the gradable adjective *tall* takes as its innermost argument a simple degree, the degree quantifier must raise to a clausal node for interpretation.

(15) LF for (13):
[[-er [than Bill is tall]] [John is d-tall]]

Most analyses assume that the rightward position of the *than*-clause results from extraposition (we return to this in section 7).



This is no different in amount comparatives. Following a long tradition (Ross 1964, Bresnan 1973, Hackl 2001), I assume *more* to be the spell-out of *many* + *-er*. *Many* is treated as a gradable adjective :

(16) [many] = λd.λx. x is d-many

This allows us to treat amount comparatives exactly in the same way as comparatives used with gradable adjectives.

- Given the mechanisms that we have presented here, we expect to find scope ambiguities in these constructions also.

(17) Jean a pas vu plus de films que Bob.
'Jean has not seen more movies than Bob'
1. It is not the case that Jean has seen more movies than Bob has.
2. There are more movies that Jean has not seen then movies that Bob has not seen.

A bit more formally:

1. $\neg(|\{x: \text{Bob has seen } x \ \&\ \text{movie}(x)\}| < |\{x: \text{Jean has seen } x \ \&\ \text{movie}(x)\}|)$
2. $|\{x: \text{Bob has } \mathbf{not} \text{ seen } x \ \&\ \text{movie}(x)\}| < |\{x: \text{Jean has } \mathbf{not} \text{ seen } x \ \&\ \text{movie}(x)\}|$

Note that in the reverse scope reading (2.), negation appears in both clauses, whereas it appears in neither in the narrow scope reading.

→ This follows quite naturally from the hypothesis that the *than*-clause is formed by deletion under identity.

Much as in the vague quantifier case, the ambiguity totally disappears when the quantifier is at a distance.

(18) Jean a pas plus vu de films que Bob.
'Jean has not seen too many movies'
1. It is not the case that Jean has seen more movies than Bob has.
2. #There are more movies that Jean has not seen then movies that Bob has not seen.

5-TOO AND ENOUGH AND SO ON

Again, these constructions have received constant attention (see Meier 2003 and Hacquard 2005 for recent discussion), but their discontinuous French counterparts have not.

In some sense, they are very similar to comparatives. The main difference is in how the standard of comparison is expressed.

- Comparatives relate the value in the matrix to another value of the same type in the *than*-clause.
- TECs compare the value of the matrix to some 'limit' value expressed by some condition.

(19) John is too slow to make the team.
'the maximal degree d such that John is d-slow and d is higher than the maximal degree to which one can be slow and still make the team.'

The denotation of *too* is more readily expressible with the help of the possible word notation (adapted from Heim 2000) :

(20) $[\text{too}] = \lambda p_{<s,t>}\, \lambda f_{<d,<s,t>>}\, \lambda w.\ \exists d\, [f(d)(w)=1\ \&\ \neg\exists w'[w' \in Acc_{Too}(w)\ \&\ p(w')=1\ \&\ f(d)(w')=1\ ]]$

The interpretation of these sentences follows essentially the same steps as the comparatives. *Too to make the team* needs to raise at LF to take the lambda-abstracted matrix clause as final argument.

(21) [[too [to make the team]] [John is d-slow]]

The rightward position of the infinitival clause is again attributed to an extraposition rule.

Unsurprisingly, the same ambiguities as before and lack thereof can be found with *trop*.

(22) Jean a pas vu trop de films pour passer son examen.
1. It is not the case that Jean has seen too many movies to pass his exam. (He wasted his time watching movies)
2. There are too many movies that Jean has not seen for him to pass his exam. (presumably an exam on cinema)

(23) Jean a pas trop vu de films pour passer son examen.
1. It is not the case that Jean has seen too many movies to pass his exam. (He wasted his time watching movies)
2. #There are too many movies that Jean has not seen for him to pass his exam. (presumably an exam on cinema)

6- COMMON PROPERTIES

All three constructions share a number of properties.

They all compare some value in the matrix to some other value. However, they differ as to whether this second value can, must, or must not be expressed in the (overt) syntax.

- Vague quantifiers : the standard cannot be expressed (*n* can only be contextually determined)

- Comparatives : the standard *must* be expressed.
  i.e. : Jean a vu plus de films *(que moi)

- *trop* and others: the standard can optionally by expressed.
  i.e. : Jean a vu trop de films (pour comprendre la vraie vie)

Also, every lexical item in (3) can independently appear as VP adverbs (with no object).

(24) a. J'ai beaucoup dormi
'I slept a lot'

b. J'ai plus dormi *(que toi).
'I slept more than you'

c. J'ai trop dormi (pour aller me coucher).
'I slept too much to go to bed'

7- Two Possible Unifying Analyses

There are two main lines of analysis that I want to explore here.

1. The long-distance quantification sentences represent an instance of overt QR.
2. The quantifier is generated in situ and the NP raises to become its argument.

7.1 Overt QR

In this approach, all the sentences in (4) are derived as we have described above, except that the timing of spell-out is a bit off.

This analysis has some nice advantages.

- Nothing new needs to be said about these constructions.
- Cross-linguistic variation is clearly expressed in terms of the varying timing of spell-out (later in French than in English).
- The frozen scope of elements moved in the surface structure is a well-known phenomenon. overt raising have frozen scope

An interesting restriction on QAD sentences would be explained by this approach, namely the fact that the *de*-phrase cannot be found in a PP:

(25) a. *Jean a beaucoup parlé à de gens.
'Jean has spoken to a lot of people' (intended)

b. Jean a plus parlé à de gens que toi.
'Jean has spoken to more people than me.' (intended)

c. Jean a trop parlé à de gens pour se souvenir de leurs noms.
'Jean has spoken to too many people to remember their names.'

✓ This follows from the fact that PPs are islands in French.

However, more will need to be said.

- Why is long-distance quantification not possible with every quantifier in object position?

(26) *Jean a aucun vu de film.
Jean has no seen of movie

what is the interaction w/ specificity

- Why isn't the full QNP moving up?

(27) *Jean a beaucoup de films vu.
Jean has a-lot of movies seen

It is interesting to note that if this proposal is correct, then Bhatt and Pancheva's recent proposal (2004) as to the derivation of comparatives cannot be right.

In their proposal, a comparative such as (13) is built in the following steps:

1. Construct [John is -er tall]
2. QR *-er* to the right [[John is d-tall] -er]
3. Late merge the *than*-clause [[John is d-tall] -er[than Bill]]

This hinges on two crucial assumptions.

- Arguments (at least those without θ-role) can be late-merged.
- QR is re-merger to the right.

It cannot be the case that both the current proposal and B&P's are correct. If QR is overt, then we can see its landing site and it is clearly not to the right.

Note also that overt QR has been argued to exist in other languages, most notably in Hungarian (Brody 1990, Brody & Szabolcsi (2003).

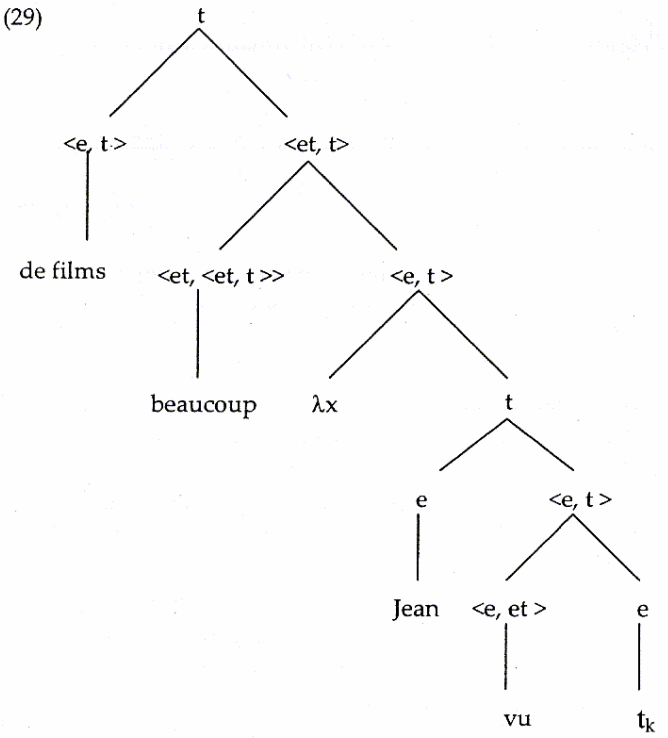
7.2 The Alternative NP Movement

Another possible analysis would be to say that the quantifier in the sentences in (3) is generated in its surface position and the *de*-phrase moves up to it.

Of course, this means that the quantifier takes its arguments in the reverse order as it usually does.

(28) a. [Beaucoup] ([de films]) ([Jean a vu x])
b. [Beaucoup] ([Jean a vu x]) ([de films])

(29)



The interesting feature of these logical representations is that they are truth-conditionally equivalent. This follows from the fact that *beaucoup* is intersective.

(30) beaucoup A B = | A ∩ B | > n

OK but can only specifier move?
its fine because these all
have agreement w/ object or patient no.
w/ subj

Since $X \cap Y = Y \cap X$, we can be sure that the order in which the two arguments are merged is irrelevant.

Can we get this to carry over to comparatives and TECs?

It will be easier to accomplish this if we propose an alternative denotation for 'amount' *plus* 'more'.

- plus A B C = $|A \cap B| > |C|$

This makes *plus* a three-place higher-order predicate.

(31) Jean a vu plus de films que Bob.
[trop] ([de films]) ([Jean a vu x]) ([que Bob])

(32) Jean a plus vu de films que Bob.
[trop] ([Jean a vu x]) ([de films]) ([que Bob])

We get the intersectivity where we need it: between the two first arguments.

(33) $|A \cap B| > |C| \leftrightarrow |B \cap A| > |C|$

The same proposal can be applied to *trop* 'too'.

So all the quantifiers exemplified in (4) can be said to be intersective in the relevant sense. However, not all intersective quantifier can be found in QAD:

(34) *Jean a cinq vu de films.
'Jean has seen five movies' (intended)

(35) five A B = $A \cap B \geq 5$

In order to get the right lexical items and no other, we need to restrict further.

- Long-distance quantification is only possible with intersective quantifiers that can appear independently as VP adverbs.

This will get us exactly the right class, rightfully excluding adjectival quantification, for example:

(36) a. Jean a acheté grand de terrain
Jean has bought big of land
'Jean bought a lot of land.'

b. *Jean a grand acheté de terrain.
'Jean bought a lot of land.' (intended)

This approach is also inconsistent with the B&P proposal. Since the quantifier does not need to move at any point, we should get the word order in (37)

(37) *Jean a plus que Bob vu de films.
Jean has more than Bob seen of movies

8. LEFTOVERS

I have willingly left one issue in the dark because the data is still very murky.

- These structures are also possible with gradable adjective.

(38) Jean a beaucoup été malade.
Jean has a-lot been sick

It is even possible to find scope ambiguities. which people don't agree with

(39) Jean a voulu être trop riche pour être engagé par le monastère.
Jean has wanted to-be too rich for to-be hired by the monastery

1. What John wanted was to be too rich for the monastery to hire. (he really doesn't want to be hired) → want > trop
2. John's desired richness is too high for him to be hired by the monastery. (The monastery only hires people with no desire for wealth)

from Nouveau's examples

This ambiguity again disappears if we place *trop* higher, but only the **wide** scope reading remains (rather than the narrow scope):

(40) Jean a trop voulu être riche pour être engagé par le monastère.
Jean has too wanted to-be rich for to-be hired by the monastery

1. #What John wanted was to be too rich for the monastery to hire. (he really doesn't want to be hired) → want > trop
2. John's desired richness is too high for him to be hired by the monastery. (The monastery only hires people with no desire for wealth) → trop > want

This seems more likely to be explained by the overt QR analysis than the alternative NP movement.

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decoup needs to modify events and individuals
— are they specific
NPs or

nonfinite and nonspecific

finite event

specific individual

nonfinite event

nonspecific individual