OVERT MOVEMENT OF COMPARATIVE QUANTIFIERS IN EUROPEAN FRENCH

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1 INTRODUCTION

In French nominal comparatives, the degree words (*plus* 'more', *davantage* 'more', *moins* 'less' and *autant* 'as much/many') can appear close to the noun that is being compared (1a) or farther to the left of the verb (1b). The NP being compared is marked with the particle *de* (from now on deP or de-NP).

(1) a. Thomas a acheté *plus de pantalons* que de chemises.
T. has bought more de pants than de shirts.
Thomas bought more pants than shirts.

b. Thomas a *plus* acheté *de pantalons* que de chemises.
T. has more bought de pants than de shirts.
Thomas bought more pants than shirts.

c. *Thomas a acheté *de pantalons* (que de chemises).
T. has bought de pants (than de shirts).
Intended: Thomas bought pants (than shirts).

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The central question this article is concerned with is whether the sentences in a and b in (1) are derivationally related. Two kinds of analyses could derive the dependency between the operator and deP. Under a movement analysis, the quantifier is base-generated next to deP and can move overtly to a preverbal position, whereas under an adverbial analysis, the quantifier is base-generated in the position where it is pronounced, and a dependency is established between the operator and deP. In the recent literature bearing on a related phenomenon, many have argued in favor of an adverbial analysis[1]. In this article, I defend the movement analysis, and I show that the overt operation that places the comparative word in preverbal position and the covert operation that brings it to an interpretable position are one and the same: DegP (Degree Phrase) movement (Heim 2001).

The fact that *plus* can be pronounced in different positions resembles a construction known as Quantification At a Distance (QAD). In that construction, the degree word can be pronounced next to the noun it quantifies over: the prenominal or canonical position (CQ) as in (2a), or further (QAD) as in (2b). There is a dependency between the degree quantifier (in CQ or QAD) and deP as illustrated by the ungrammaticality of (1c) and (2c) in which the degree word in absent.

(2) a. Francis a écrit *beaucoup de lettres*.
Francis has written many de letters
Francis has written a lot of letters.

b. Francis a *beaucoup* écrit *de lettres*.
Francis has many written de letters
Francis has written a lot of letters.

c. *Francis a écrit *de lettres*.
Francis has written de letters
Intended: Francis has written letters.

Quantifiers that can appear both adnominally or preverbally can be divided into two categories: Quantification At a Distance operators[2] (3a) and Comparison At a Distance operators (3b).

(3) a. QAD operators
assez 'enough'
suffisamment 'enough'
trop 'too'
beaucoup 'a lot'
énormément 'a great deal of'
pas mal 'quite a few/some'
peu 'little'
un peu 'a little'
vachement 'a lot' (fam.)
sacrément 'a lot'
drôlement 'a lot'
guère 'little' [3]
de plus en plus 'more and more'
de moins en moins 'less and less'
tellement 'so much/many'
tant 'so much/many'
le plus 'the most'
le moins 'the least'

b. CAD operators
plus 'more'

1. Kayne (1975); Milner (1978); Obenauer (1983; 1994); Boivin (1999); Burnett (2009; 2012); Rizzi (1990); Doetjes (1995; 1997)
2. Other potential such operators in other dialects are *à peine* 'hardly', *diablement* 'a lot', *fichtrement* 'a lot' ...

davantage 'more'
moins 'less'
autant 'as much/many as'

Quantification At a Distance is a topic that has been discussed by a fair number of linguists, but I am not aware of work that has looked at CAD. In this article I look at the constructions involving the four comparative quantifiers: *plus* 'more', *moins* 'less', *davantage* 'more' and *autant* 'as much/many'. Like QAD operators, every CAD operator may also be pronounced next to the deP, I refer to this construction as Canonical Comparison (CC). CAD is superficially like QAD in as much as both constructions involve a quantifier that is separated from its restriction, but both are also superficially different since CAD involves a standard of comparison. The presence of the standard of comparison in CAD constructions gives us a scopal diagnostic that is unavailable with QAD. This is because the surface position of the standard of comparison marks the scope of the comparative (Williams 1974; Fox and Nissenbaum 1999; Fox 2002; Bhatt and Pancheva 2004).

The operator may appear before a past participle (1) or before an infinitive (4) (*see* 3.2.3 on page 17). This is why in this article I use periphrastic tenses such as the *passé-composé* past tense or the future with *aller* 'go'.

(4) Il va plus vouloir boire d' eau que de café.
He goes more want drink de water than de coffee
He will want to drink more water than coffee.

Because all the literature that I am aware of defends an adverbial analysis of QAD, I begin with the two main arguments that have been presented in favor of this kind of analysis of QAD, and show that they either do not apply to CAD or do not constitute evidence against the movement analysis (section 2). As expected from the hypothesis that the CAD operator - deP dependency is obtained via movement of the CAD operator, this dependency is sensitive to interveners that other dependencies created by Ā- / A-movements are (section 3). Another argument for the movement analysis is that CAD operators are not always interpreted where they are pronounced. After sketching the predictions that both analyses make with respect to the interpretation of the degree word (section 4), I present facts showing that they can be interpreted below the position that they appear in (section 5). A base-generation analysis will not capture those facts. A matter that has not been settled yet is the nature of this movement. It has been argued that another quantifier *tout* 'all' moves in French, and interestingly, it has the same locality restrictions as CAD, suggesting that the movement of *tout* and that of the CAD operator are related (section 6). Finally, I discuss the

3. The status of *guère* 'little' is not as clear because it can cooccur with negative *ne*. One could think that *guère* is just an N-word and that *de* is polar *de*, but *de* does not behave like polar *de* because it does not license singular nouns (i).

(i) a. Polar *de* licenses singular
Je n' ai pas vu de cheval.
I neg have not seen de horse
I have not seen any horses.

b. *de* after *guère* does not license singular
*Je n' ai guère vu de cheval.
I neg have few seen de horse
Intended: I have seen few horses.

relation between (overt) CAD movement and covert movement of the comparative quantifier before fleshing out an implementation of the movement and interpretation of CAD (section 7).

2 QUANTIFICATION OVER OBJECTS

Owing to the similarity of QAD and CAD, and the fact that they have not been differentiated in the past, I present below two aspects of QAD that have been argued to constitute strong evidence for the base-generation analysis. In this section, I show that those two facts do not constitute evidence for the base-generation analysis in CAD constructions.

2.1 Multiplicity of events?

Typically quantification with 'many' focusses on individuals but since at least Obenauer (1983), much of the discussion of the difference between QAD and CQ has taken for granted that QAD *beaucoup* 'many' also involves some sort of quantification over events. Obenauer proposed that QAD operators have a *Multiplicity of Events* requirement (5).

(5) ***Multiplicity of Events Requirement***
QAD sentences are only true in contexts involving multiple events.

This difference has been used as an argument against the movement analysis, in favor of a base-generation analysis. Although the judgments are difficult and not shared by everyone, I review the arguments put forth in support of the MoE requirement in QAD. Then I show that CAD is not subject to this requirement.

Obenauer (1983) and other defenders of the adverbial analysis argue that quantifiers in preverbal position (in QAD constructions) bind the event variable as well as the individual variable. Depending on the author, the MoE requirement has been viewed as a presupposition (Obenauer 1983, p. 78)[4], or as part of the truth-conditional meaning of the quantifiers (Burnett 2009). For QAD, both ways of formalizing MoE predict that if a QAD construction is used in a context having only one event, the sentence will not be true (it will either be false or undefined).

The arguments that have been given to support the meaning difference between a CQ construction and its corresponding QAD construction consist in combining QAD constructions with phrases/lexical items that are independently known *not* to be compatible with a multiple-event interpretation. The reasoning is as follows: if QAD requires a multiple-event interpretation, the prediction is that the resulting sentence will not be 'well-formed'

4. (Obenauer 1983) is a paper on syntax containing a few semantic considerations, but no semantic formalization. Nevertheless it seems clear that what Obenauer has in mind in a well-formedness condition from the following few lines

> [...] le trait saillant de l'hypothèse (25) [lque la QAD se fait via V] est le fait qu'elle requiert, pour que la QAD soit bien formée, que l'événement exprimé par le verbe se produise "beaucoup/peu, etc. de fois", c'est-à-dire un certain nombre de fois.
> [the salient feature of hypothesis 25 [that Quantification At a Distance is achieved via V] is that it requires, in order for QAD to be well-formed, that the event expressed by the verb occur "many/few, etc. times", that is, more than once.]

(Burnett 2009) can be seen as a semantic formalization of the base-generation type of analysis.

(Obenauer 1983). If it is not the case that QAD requires a multiple-event interpretation, then the resulting sentence should come out fine.

In (6), the PP *en soulevant le couvercle* 'as he lifted the lid' is used to fix a single event reading. The CQ sentence (6a) is felicitous, but the QAD sentence (6b) is reported not to be.

(6) a. En soulevant le couvercle, il a trouvé beaucoup de pièces
In lifting the lid, he has found many de coins
d' or.
of gold
As he lifted the lid, he found many gold coins.

b. *En soulevant le couvercle, il a beaucoup trouvé de pièces d'or.

Further, Obenauer claims that QAD is not felicitous under a punctual predicate like *venir de* 'to have just'. The idea is that combining *venir de*, which requires a complement denoting a single event, with QAD, which has a multiple-event interpretation, will produce a clash[5].

(7) a. Il vient de boire beaucoup de lait.
He comes de drink much de milk
He has just drunk a lot of milk.

b. *Il vient de beaucoup boire de lait.

Burnett and Bouchard (2008) report a contrast in preferred readings using collective verbs such as *réunir* 'to bring together', which require multiple participants in order to form a single event. According to them, the preferred reading in (8a) is one in which 'there are many people involved in a single event', whereas the preferred reading in (8b) is one 'in which there were multiple occasions of "bringing together"'[6].

(8) a. J' ai réuni beaucoup de personnes.
I have gathered many de persons
I brought together many people

b. J' ai beaucoup réuni de personnes.

The fourth and final case reported to support the multiplicity of events requirement involves stative predicates. QAD is not possible with the stative verb *posséder* 'own' (9b) or in existential constructions (10b).

(9) a. Jean a possédé beaucoup de chevaux.
I has owned many de horses
Jean owned many horses.

b. *Jean a beaucoup possédé de chevaux.

5. Homer (p.c.) points out that if Obenauer is correct, (i) should be unacceptable, which does not seem to be correct, at least for him and the author of this paper.

(i) Il vient de monter et descendre l' escalier trois fois.
He goes de go.up and go.down the stairs three times
He just gone up and down the stairs three times.

6. It is not clear why Burnett and Bouchard consider this contrast as further evidence for the adverbial analysis. To the extent that the contrast in preferred readings holds, it should follow from Obenauer's MoE requirement (5), although note that the MoE requirement makes categorical predictions, not predictions in terms of preferred readings.

(10) a. Il y a eu beaucoup de personnes chez nous hier.
It there has had many de people at us yesterday
There were many people at our house yesterday.

b. *Il y a beaucoup eu de personnes chez nous hier.

Now let's look at the meaning of CAD in nominal comparatives. Depending on how the MoE requirement is formalized, the felicity conditions for CAD will be different. First I consider the felicity conditions of CAD if MoE is viewed as a presupposition, then I consider the felicity conditions of CAD if MoE is encoded in the truth-conditions of the CAD operators.

Under the assumption that the MoE requirement is the presupposition that the event denoted by the CAD construction occurs more than once, the prediction is that not meeting this requirement will yield undefinedness. This is not the case. In example (11) only one event/state is referred to: that of there being a party this year, and the sentence is perfectly felicitous.

(11) Il y a plus eu de femmes à la fête cette année que d'
It there has more had de women at the party this year than de
hommes.
men
There have been more women at the party this year than men.

Unlike *beaucoup* 'many', CAD operators introduce a degree clause which gives explicit event and individual thresholds, and spell out the comparison that supposedly goes on implicitly with *beaucoup* 'many'[7]. Under the assumption that the MoE requirement is built into the truth-conditions of CAD operators, CAD constructions evaluate to false if their truth-conditions are not met (*see* appendix B on page 56 for the details of an implementation). According to the truth-conditional approach to the MoE requirement, in (12), two sets of events are being compared: on the one hand, the events of sending macaroons to Aymeric by Marcel, and on the other, the events of sending macaroons to Clarine by Marcel. This hypothesis predicts that the CAD sentences can be true only if the cardinality of the first set is greater than the cardinality of the second set. Of course, the same comparison applies to sets of individuals, cookies in this instance.

(12) a. Context 1
Yesterday, Marcel gave macaroons to Aymeric and to Clarine. He had a box of 10 macaroons delivered to Aymeric and a box of 5 to Clarine[8]
CQ: Au bout du compte, Marcel a envoyé plus de macarons
In the end Marcel has sent more de macaroons
à Aymeric qu' à Clarine.
to Aymeric than to Clarine
In the end, Marcel sent more macaroons to Aymeric than to Clarine
CAD: Au bout du compte, Marcel a plus envoyé de macarons
In the end Marcel has more sent de macaroons
à Aymeric qu'à Clarine.
to Aymeric than to
In the end, Marcel sent more macaroons to Aymeric than to Clarine

7. The denotation of the adnominal quantifier *many* is generally taken to involve comparison with a threshold providing a contextually-relevant number of individuals (Partee 2004).
8. Hier, Marcel a envoyé des macarons à Aymeric et à Clarine. Il a fait livré une boîte de 10 macarons à Aymeric et une boîte de 5 macarons à Clarine.

b. Context 2
As a tradition, Marcel sends macaroons to the people he knows for their birthday. Every year, he sends 10 macaroons to each of his relatives and 3 macaroons to each of his friends. This year is his grand-son's, Aymeric's, 5^{th} birthday and the 10^{th} birthday of his friend's daughter, Clarine.[9]
CQ: Au bout du compte, Marcel a envoyé plus de macarons à Aymeric qu' à Clarine.
In the end Marcel has sent more de macaroons to Aymeric than to Clarine
In the end, Marcel sent more macaroons to Aymeric than to Clarine
CAD: Au bout du compte, Marcel a plus envoyé de macarons à Aymeric qu'à Clarine.
In the end Marcel has more sent de macaroons to Aymeric than to
In the end, Marcel sent more macaroons to Aymeric than to Clarine

c. *Question:* Is this sentence true in the context?

d. *Predictions:*
Yes → the sentence does not have a Multiplicity of Events requirement.
No → the sentence has a Multiplicity of Events requirement.

In context 1 (12a), there is exactly one event of sending 10 macaroons to Aymeric, and exactly one event of sending 5 macaroons to Clarine. The CQ sentence is true, and the CAD sentence is true as well.

In context 2 (12b), there is exactly 5 events of sending 10 macaroons to Aymeric each time, and exactly 10 events of sending 3 macaroons to Clarine each time. In this context, the CQ construction is true, and so is the QAD construction, even though Clarine received macaroons more times than Aymeric.

I conclude that CAD constructions do not have a multiplicity of events requirement. The argument that the event quantification reading favors the base-generation analysis thus becomes irrelevant[10].

In the next section, I discuss another argument that has been used to support the adverbial analysis, and I show that this argument can be used equally-well to support the movement analysis.

2.2 QAD operators are also used as adverbs

Kayne (1975) noticed that the set of degree words that can participate in the QAD construction corresponds exactly to the set of degree words that can be used adverbially (13).

(13) **Kayne's generalization**
A degree quantifier can only quantify at a distance if it can be used as

9. Marcel a pour tradition d'envoyer des macarons aux gens qu'il connaît pour leur anniversaire. Tous les ans, il envoie toujours 10 macarons à chaque membre de sa famille et 3 macarons à chacun de ses amis. Cette année est le 5e anniversaire d'Aymeric, son petit-fils et le 10e anniversaire de Clarine, la fille d'un de ses amis.
10. Notice though that even if CAD constructions had a MoE requirement, this fact would not be proof that quantifiers in preverbal positions are base-generated. Movement gives rise to scope effects that change the truth-conditions of a sentence.

a preverbal adverb, otherwise the degree quantifier cannot quantify at a distance.

The quantifier *beaucoup* 'many' is such a word: in (14), *beaucoup* 'many' may be used in QAD, and as a VP adverb.

(14) a. J' ai acheté beaucoup de pommes.
I have bought many de apples
I bought many apples.

b. J' ai beaucoup acheté de pommes.
I have many bought de apples
I bought many apples.

c. J' ai beaucoup dormi.
I have many slept
I've slept a lot.

The quantifier *plein* 'many', however, cannot be used adverbially, and as predicted by Kayne's correlation, it can't quantify at a distance either (15).

(15) a. J' ai acheté plein de pommes.
I have bought many de apples
I bought many apples.

b. *J' ai plein acheté de pommes.
I have many bought de apples

c. *J' ai plein dormi.
I have many slept
Intended: I've slept a lot.

Kayne (1975) points out that if we explain QAD by overt movement of the operator from CQ to QAD, then the unacceptability in (15b) is unexpected, thereby suggesting that linking the possibility of QAD to the adverbial use of the operator is more predictive. But in fact there is another correlation that holds of the set of QAD operators: the set of degree words that can participate in the QAD construction corresponds exactly to the set of degree words that can be used 'argumentally' (*i.e.* the QAD operator saturates an argumental position on its own).

(16) **QAD nominal quantifiers generalization**[11]
QAD operators ⇔ quantifiers can be used 'argumentally'

Notice that sentence (17a) is not acceptable: the transitive verb *faire* 'make' cannot be used if the object argument position is not saturated. Adding *beaucoup* 'many/much' in CQ (17b) or QAD (17c) makes the sentence acceptable.

11. A similar generalization is mentioned in (Doetjes 1997)

(17) a. *J' ai fait pour les pauvres
I have done for the poor

b. J' ai fait beaucoup pour les pauvres
I have done much for the poor
I did a lot for the poor

c. J' ai beaucoup fait pour les pauvres
I have much done for the poor
I did a lot for the poor

Adding *plein* 'much' does not help though (18).

(18) a. *J' ai fait plein pour les pauvres.
I have done much for the poor

b. *J' ai plein fait pour les pauvres.
I have much done for the poor

All QAD operators can saturate the subject or object position of a transitive verb, e.g. *plus* 'more' (19), *moins* 'less', *vachement* 'a great deal' (21), *peu* 'little' (22).

(19) a. J' ai fait plus pour les pauvres que toi.
I have done more for the poor than you
I did more for the poor than you did.

b. J' ai plus fait pour les pauvres que toi.
I have more done for the poor than you
I did more for the poor than you did.

(20) Moins sont venus à la fête que d'habitude
Fewer have come to the party than usual
Fewer (people) have come to the party than usual.

(21) a. J' ai fait vachement pour les pauvres.
I have done much for the poor
I did much for the poor.

b. J' ai vachement fait pour les pauvres.
I have much done for the poor
I did much for the poor.

(22) a. J' ai fait peu pour les pauvres.
I have done little for the poor
I did little for the poor.

b. J' ai peu fait pour les pauvres.
I have little done for the poor
I did little for the poor.

What these facts show is that the possibility to be used adverbially is not the only feature that is predictive of QAD, and it therefore does not necessarily follow that the reason certain quantifiers can be used in QAD

constructions is that they are adverbs. Previous analyses privileged Kayne's generalization, but there is no reason why this should be so[12].

Doetjes (1997) considers similar facts but rejects the hypothesis that QAD operators are used 'argumentally' on the basis that they cannot be used in all of the syntactic positions that DP arguments can be used for instance. In (23b), using bare *beaucoup* 'much' in the indirect object PP *à beaucoup* is not possible.

(23) a. Marie s' intéresse aux chants géorgiens.
Marie refl interests to chants georgian
Marie is interested in Georgian singing.

b. *Marie s' intéresse à beaucoup.
Marie refl interests to much
Intended: Marie is interested in many things.

This pattern is not predicted if we hypothesize that QAD operators can be used argumentally just like any DP. This hypothesis is falsified by the unacceptability of (23b). However, the example only shows us that QAD operators are not 'just like any other DP's'. A weaker hypothesis, still consistent with the data, would then have to predict that QAD operators can be used argumentally in a more restricted set of positions than DP's can. This more restricted set of positions is {subject, direct object}. An obvious hypothesis that would predict those positions is that QAD operators must receive structural case (when they undergo movement (given (27))). Whatever the exact reason is, examples such as (23b) do not show that QAD operators cannot be arguments.

Sketch of Doetjes's analysis

Doetjes argues that quantifiers used argumentally as in (19), (21), (22), or (24) are in fact adverbs binding an empty category in the complement of the verb.

(24) a. Jean a fait davantage pour eux.
Jean has done more for them
Jean did more for them.

b. Jean a davantage fait pour eux.

In (25), the past participle *fait* may undergo optional movement (Pollock 1989), thus yielding the two possible word orders seen in (24). The adverb *davantage* 'floats and occupies an adverbial position' (Doetjes 1997, p. 219) in [Spec,VP] from where it binds the empty category in object position.

(25) Jean a fait_i $[_{VP}$ davantage_j $[_{VP}$ t_i ec_j pour eux]].
Jean has done more for them
Jean did more for them. *(Doetjes 1997, (41) p. 219)*

12. My account (7 on page 39) does not capture the QAD nominal quantifiers generalization, and I have to leave this matter for further research because it involves looking at the structure of DP's containing QAD/CAD operators, which is outside of the scope of this paper. There is reason to believe that it is compatible though. For instance, Kayne (2002; 2008) proposes that the phrase *beaucoup de gens* has the structure [$[_{NP}$ beaucoup NUMBER] de livres], in which NUMBER is a silent noun.

Furthermore, it is not clear how Doetjes's assumption that QAD operators used argumentally are really VP adverbs binding an empty category would account for examples like (26a) where *beaucoup* is used in subject position[13] since under her adverbial analysis, *beaucoup* is adjoined to a projection of VP 'or a projection dominating VP', and the main verb moves to T, we would expect the order in (26b).

(26) a. Beaucoup sont venus à son concert.
Many are come to her concert
Many (people) came to her concert.

b. *Sont beaucoup venus à son concert.

Another kind of example problematic for the idea that argumental QAD operators are in fact 'adverbs binding an empty category' is (27) where *peu* 'little' is the indirect object of *avoir besoin* 'need'.

(27) Elle a besoin de peu pour vivre.
She has need de little for live
She does not need much to live.

13. In fact, Doetjes argues that the status of *beaucoup* 'many' used in subject position (26) is not the same as in object position. The argument she puts forward for this difference in status is that *beaucoup* in (26) has a specific interpretation contrary to *beaucoup* in object position. For her, *beaucoup* in subject position is pronominal while it is not in object position.

> [Degree quantifiers seemingly used as object arguments] are not specific in the sense of Enç (1991). DQ's [degree quantifiers] of which we can be sure that they are pronominal must be specific.' (Doetjes 1997, p. 221)

Enç defines specificity as involving a weak link between an NP denotation and a previously established referent; 'that of being a subset of or standing in some recoverable relation to a familiar object' (Enç 1991, p. 24), (as opposed to involving a strong link which is defined as identity of reference (which is the link that definiteness involves).

To the extent that I follow Doetjes' argument, it seems that her explanation hinges on a contrast in acceptability along two factors: position of *beaucoup* and presence of context. She reports that *beaucoup* in object position is as acceptable whether an explicit context giving an antecedent for *beaucoup* is provided or not, however *beaucoup* in subject position (i) seems to be only acceptable if a context has been explicitly provided before.

(i) a?? Beaucoup sont arrivés cet après-midi
many are arrived this afternoon
Many people arrived this afternoon

b. I asked the children to go to the living room.

Beaucoup sont encore dans la salle à manger.
Many are still in the room to eat
Many are still in the dining room.

This contrast is interesting but one wonders what the effect of the choice of lexical items is: minimal pairs would be more telling. For instance, Homer (p.c.) gives (ii) as an example that sounds perfectly natural without an explicitly provided context.

(ii) Beaucoup pensent que des réformes sont nécessaires.
Many think that some reforms are necessary
Many (people) think that reforms are necessary.

The restrictions that apply to *beaucoup* in subject and object positions are ill-understood. For instance, it seems to be very difficult to find instances of *beaucoup* with an animate interpretation in object position (iii), whereas this seems to be the preferred (if not only) interpretation possible in subject position.

(iii) *J' ai vu beaucoup.
I have seen many
Intended: I've seen many people.

To recapitulate, when a CAD operator is unambiguously used as an adverb (i.e. when it is high and there is no *de*) as in (28a), the corresponding interpretation involves quantification over events. When the operator is in the same surface position but there is *de* downstairs (CAD) as in (28b), then not only is there a new reading (quantification over individuals), but the other reading (quantification over events) vanishes. This is not predicted by the adverbial/BG theory for CAD. I must therefore conclude that CAD operators and adverbs take part in different structures.

(28) a. Tom a plus été voir ses parents que Marie.
Tom has more been see his parents than Marie.
Tom has visited his parents more (often) than Marie.

b. Tom a plus été voir de parents que Marie.
Tom has more been see de parents than Marie.
Tom has visited more parents than Marie.

Linking QAD and the argumental uses of Q would require looking at the structure of generalized quantifiers in detail, but I have to leave this for further research. In this section, my goal was to show that the facts that have been called upon to argue in favor of the adverbial analysis of QAD, do not straightforwardly back up this analysis for CAD, and in fact make wrong predictions as far as its interpretation is concerned.

As I will show, those facts can equally well be analyzed in a way that favors the movement analysis. In the next section, I show that the CAD operator - deP dependency is subject to locality restrictions that are independently known to block certain kinds of movement.

3 CONDITIONS ON THE CAD DEPENDENCY

French nominal comparatives involve a comparative quantifier and a compared NP marked with the particle *de*[14]. This *de* needs to be licensed by a CAD operator, otherwise the construction is ungrammatical. I will refer to this dependency as the CAD dependency. In (29), both sentences are equally unacceptable whether the de-NP is in subject position or in object position.

(29) a. *De linguistes vont présenter à la conférence.
de linguists go present at the conference

b. *Je vais voir de gens à cette conférence.
I go see de people at this conference

Under the movement analysis we do not need to explain why the selection of a *de*-NP by the degree word in a CAD sentence appears to be non-local[15]: the comparative quantifier is merged into the structure as the sister of *de*-NP and moves from there. First I describe the kind of phrases from which the CAD dependency can hold, then I look at the locality restrictions that apply to it.

14. The word *de* is one of the most widespread words in French. It covers a variety of meanings, some of them expressed in English by the prepositions *from*, *of*, *than*, *by*, ... In this paper we focus on the *de* that is used in CAD.

15. Kayne (1975) points out that movement is not necessary to explain the distribution of *de*-NP's since they are possible in argument position under negation, but it is not possible to pronounce *pas* next to de-NP (i).

3.1 CAD dependency can hold from postverbal argument DP's

In this section I describe the kind of phrases that allow the CAD dependency to hold from them. As we have seen so far, the CAD dependency can hold from the object argument of a verb (30).

(30) CAD into object: ✓

a. J' ai rencontré *plus d' Anglais* que d' Américains.
I have met more de Englishmen than de Americans
I have met more Englishmen than Americans.

b. J'ai *plus* rencontré *d'Anglais* que d'Américains.

The dependency can only hold from an argumental DP. Example (31) shows that *plus* 'more' cannot license deP across a PP boundary even if this PP is an argument of the verb.

(31) CAD into (argument) PP: *

a. J' ai téléphoné à plus de gens que ça.
I have called to more de people than that
I've called more people than that.

b. *J'ai plus téléphoné à de gens que ça.

In fact CAD operators can license deP's in any argument DP as long as it is postverbal (modulo locality restrictions, *see* 3.2 on the next page)[16]. Example (32) shows topicalization of the object through clefting/relativization. In example (33), the subject may precede or follow the unaccusative verb *venir* 'come'. Finally, (34) is an example of locality inversion.

(i) a. Je n' ai pas acheté de pommes.
I neg have neg bought de apples.
I haven't bought apples.

b.*Je n'ai acheté pas de pommes.

He therefore proposes that *de*-NP can plausibly be generated independently of any adjacent quantifier. On the basis of a remark made in (Kayne 1975, p. 31), Milner (1978) then argues that *de*-NP under degree words and *de*-NP under negation should not be confused. He argues that the relation between negation and *de*-NP is less restricted than the one found in degree construction (ii). In (iia), the negation in the matrix licenses *de*-NP in the embedded clause. In (iib), the degree word in the matrix does not license *de*-NP in the embedded clause.

(ii) a. Je ne crois pas qu' il ait acheté de livres.
I NEG believe NEG that he has.subj bought de books
I don't think that he bought any books

b.*J' ai beaucoup cru qu' il a acheté de livres.
I have many believed that he has bought de books
Intended: I thought that he bought many books.

I follow Milner in assuming that polar *de* and degree *de* are distinct.

16. A generalization recurring in the literature on QAD is that QAD is restricted to the object argument. This generalization is motivated it seems by the examples in (i) from Kayne (1975, p. 29) and (ii) from Burnett (2009, p. 20).

(i)*De carottes ont été trop mangées cette année.
De carrots have been too eaten this year.
Intended: Too many carrots have been eaten this year.

(ii)*De livres ont été beaucoup lus.
De books have been many read
Intended: Many books have been read.

Notice that the subject argument is, in both cases, preverbal.

(32) Topicalization of the object, CAD into postverbal subject: ✓

a. [*plus* de-S **V** O]
Plus d' hommes que de femmes ont soutenu ces projets.
More de men than de women have supported these projects
More men than women have supported these projects.

b. [O **V** *plus* de-S]
Ce sont ces projets qu' ont soutenus *plus d' hommes* que de femmes.
This are those projects that have supported more de men than de women
Those are the projects that more men than women have supported.

c. [O *plus* **V** de-S]
Ce sont des projets qu' ont *plus* soutenus *d'hommes* que de femmes.

(33) Subject of unaccusative verb, CAD into postverbal subject: ✓

a. [*plus* de-S **V**]
Plus de boulangers sont venus aujourd'hui qu' hier.
More de bakers are come today than yesterday
More bakers came today than yesterday.

b. [**V** *plus* de-S]
Il est venu *plus de boulangers* aujourd'hui qu'hier.

c. [*plus* **V** de-S]
Il est *plus* venu *de boulangers* aujourd'hui qu'hier.

(34) Locative inversion, CAD into postverbal subject: ✓

a. [*plus* de-S **V** LOC]
Plus de villageois ont dansé sous ces halles que de boulangers.
More de villagers have danced under those covered square than de bakers.
More villagers have danced under the covered market roof than bakers.

b. [LOC **V** *plus* de-S]
Sous ces halles ont dansé *plus de villageois* que de boulangers.

c. [LOC *plus* **V** de-S]
Sous ces halles ont plus dansé de villageois que de boulangers.

CAD operators can license deP in any phrase as long as this phrase meets all of the following 2 conditions: it is a direct argument, and postverbal. Now I move on to show what locality restricions apply to the licensing of deP in such a DP.

3.2 Locality restrictions on the CAD dependency

In this section, I look at the locality restrictions on the CAD dependency[17]. I look at tensed clauses, and extraction islands. If CAD is obtained via movement, we expect CAD not to be able to hold across islands. This is indeed what we find.

17. I use *plus* 'more' throughout and only mention the other comparative quantifiers when they do not pattern like *plus* 'more'.

3.2.1 *Tensed clauses*

The quantifier *plus* 'more' cannot be in a different tensed clause from the clause where the deP it quantifies over is (35). Examples (35ab) show *plus* in canonical and CAD positions respectively. Pronouncing *plus* in the matrix clause (35c) makes the sentence unacceptable.

(35) CAD into indicative clause: *

a. J' ai pensé [$_{CP}$ que tu avais vendu *plus* d' ordinateurs que d' imprimantes aujourd'hui].
I' ve thought that you had sold more de computers than de printers today
Today I thought you had sold more computers than printers.

b. J' ai pensé [$_{CP}$ que tu avais *plus* vendu d' ordinateurs que d' imprimantes aujourd'hui].

c. *J' ai *plus* pensé [$_{CP}$ que tu avais vendu d' ordinateurs que d' imprimantes aujourd'hui].

This restriction holds even if the embedded verb is in the subjunctive mood.

(36) CAD into subjunctive clause: *

a. Carla a exigé [$_{CP}$ que Nicolas prenne *plus* de cours de syntaxe que de cours de phonologie].
Carla has demanded that Nicolas take.SUBJ more de classes of syntax than de classes of phonology
Carla demanded that Nicolas take more syntax classes than phonology classes.

b. *Carla a *plus* exigé [$_{CP}$ que Nicolas prenne de cours de syntaxe que de cours de phonologie].

CAD operators cannot license deP in tensed clauses. In 3.2.3 on page 17 I show that, given a non-finite embedded clause, certain embedding verbs, allow the 'plus'-deP dependency to hold across them.

3.2.2 *Extraction islands*

As expected from the facts presented in 3.2.1, any sentence in which the *plus*-deP dependency spans a tensed clause boundary will be unacceptable. For this reason, I only look at non-finite embedded clauses in the following extraction islands which can embed a non-tensed clause:

1. Adjuncts
2. Complex Noun Phrase constraint
3. Wh-islands
4. Coordinate-structure island

3.2.2.1 Adjuncts

Comparative degree quantifiers cannot license deP in an adjunct. Compare (37) in which the phrase *plus de temps* is a adjunct to (38), in which the same phrase is an argument of the verb.

(37) CAD into adjunct: *

a. ?J' ai dormi plus de temps que ça.
I have slept more de time than this
I slept longer than this (lit. more time than this).

b. *J'ai plus dormi de temps que ça.

(38) CAD into object: ✓

a. J' ai passé plus de temps à la piscine que ça.
I have spent more de time at the swimming pool than this
I've spent more time at the swimming pool than this.

b. J'ai plus passé de temps à la piscine que ça.

3.2.2.2 CNPC

Likewise licensing into a complex NP island is not possible as (39) shows.

(39) CAD into complex NP: *

a. J' ai trouvé un homme à qui vendre plus de paille que
I have found a man to whom sell more de straw than
de blé.
de wheat
I have found a man to whom I can l sell more straw than wheat.

b. *J' ai plus trouvé un homme à qui vendre de paille que de blé .

3.2.2.3 Wh-island

Example (40) shows that even if the wh-phrase is non-finite, *plus* cannot license deP in it. In (40a), *plus* is in the canonical position, in (40b), it is in the preverbal position of the embedded clause (QAD) but in (40c), it is in the matrix clause and the sentence is as unacceptable as if there were no *plus* at all (40d).

(40) CAD into wh-island: *

a. Christian s'est demandé [à qui donner *plus* de chevaux].
Christian has wondered to whom give more de horses
Christian wondered who to give more horses to.

b. Christian s'est demandé [à qui *plus* donner de chevaux].

c. *Christian s'est *plus* demandé [à qui donner de chevaux].

d. *Christian s'est demandé [à qui donner de chevaux].

3.2.2.4 Coordinate-structure island

Example (41) shows that while it is fine to have the degree head *plus* in each of the two conjuncts or out of both, it is unacceptable to CAD into just one conjunct.

(41) CAD into one conjunct: *

a. J' ai donné [*plus* de temps et *plus* d' argent] à Marie qu' à Pauline.
I' ve given more de time and more de money to Marie than to Pauline
I've given more time and more money to Mary than to Pauline.

b. *J' ai *plus* donné [de temps et *plus* d' argent] à Marie qu' à Pauline.

c. J' ai *plus* donné [de temps et d' argent] à Marie qu' à Pauline.

CAD is possible in a coordinate structure as long as it occurs equally into both conjuncts (14).

(42) CAD into both conjuncts: ✓

a. J' ai donné plus de livres à Sam et emprunté plus de magazines à Bill que toi.
I have given more de books to Sam and borrowed more de magazines to Bill than you
I've given more books to Sam and borrowed more magazines from Bill than you have.

b. J' ai plus donné de livres à Sam et emprunté de magazines à Bill que toi.

The pattern resembles what happens in wh-questions over coordinate structures. So far, we have only looked at islands containing non-finite clauses, but CAD in finite clauses does not fare differently.

3.2.3 *Infinitives*

In causative constructions[18], CAD licenses deP in the embedded infinitival (43b). Both constructions (a, b) can be used in the same context.

(43) CAD into infinitival under *faire* causativizer[19]: ✓
Context: My gardener is very good at pruning trees. I'm going to make him prune all the trees I own (30) and only 2 rose bushes.

a. Je vais faire tailler *plus* d' arbres à mon jardinier que de rosiers
I go make prune more de trees to my gardener than de rose
I'm going to make my gardener prune more trees than rose bushes.

b. Je vais *plus* faire tailler d'arbres à mon jardinier que de rosiers.

18. French forms the causative of a verb by adding a verb meaning 'to make' *faire* or 'to let' *laisser* to a clause. Example (ia) is a non-causative transitive construction, which is causativized in (ib) by adding the causativizing verb *faire* and by making the causee *Romain* a PP headed by the preposition *à*.

(i) a. Romain va couper une branche.
Romain goes cut a branch
Romain is going to cut a branch.

b. Tristan va faire couper une branche à Romain.
Tristan goes make cut a branch to Romain
Tristan is going to make Romain cut a branch.

19. The order in which the standard clause precedes the goal *à mon jardinier* is also possible even preferred.

That the comparative quantifier *plus* can license a deP in embedded infinitivals under a causative verb could be thought to be a consequence of a possible special status of causative constructions (e.g. clause union). But CAD is possible into infinitivals in raising constructions, which have not been given such analyses.

Raising-to-subject verbs like *paraître* 'appear' (44) and *devoir* 'must' (45) allow the operator-deP dependency to hold across them.

(44) CAD into infinitival under *paraître* 'appear': ✓

a. Jean a pourtant paru arroser *plus* de fleurs que d'
Jean has yet seemed water more de flowers than de
arbustes.
shrubs
Yet, Jean seemed to have watered more flowers than shrubs.

b. Jean a pourtant *plus* paru arroser de fleurs que d'arbustes.

(45) CAD into infinitival under *devoir* 'must': ✓

a. Je vais devoir manger *plus* de légumes que de desserts.
I go must eat more de vegetables than de desserts
I'm going to have to eat more vegetables than desserts.

b. Je vais *plus* devoir manger de légumes que de desserts.

Licensing into infinitivals is not restricted to raising constructions. Although judgments are much less clear with control verbs, at least some of them allow CAD, e.g. *essayer* 'try' (46).

(46) CAD into infinitival under *essayer* 'try': ✓

a. Il a essayé de lire *plus* de livres que de magazines.
He has tried de read more de books than de magazines
He tried reading more books than magazines.

b. Il a *plus* essayé de lire de livres que de magazines.

But it is less clear whether other subject control verbs like *décider* 'decide' are acceptable with CAD (47).

(47) CAD into infinitival under *décider* 'decide': ✓

a. Il a décidé de lire *plus* de livres que de magazines.
He has decided de read more de books than de magazines
He decided to read more books than magazines.

b. ?Il a *plus* décidé de lire de livres que de magazines.

It remains to be confirmed whether the contrast in acceptability extends to other pairs of restructuring/non-restructuring verbs like *essayer* 'try'/*décider* 'decide', but if CAD is contingent on the restructuring properties of verbs (Wurmbrand 1998), then this contrast would constitute an argument for a movement analysis against a base-generation analysis.

To recap CAD is not possible into extraction islands and into tensed clauses. It is possible into at least some non-finite clauses depending on the embedding verb that heads them. Notice though, that in all the cases seen so far, ther has been no phrase intervening between the high position of the CAD operator and deP. Let us see what happens when the CAD operator-deP dependency spans an XP.

3.2.4 *Intervention*

It seems that a CAD operator cannot move over a DP (48) or a PP (49). In (48), *Paul* is the object of the control verb *supplier* 'beg'. In (49), *Paul* is the indirect object of the control verb *conseiller* 'advise'.

(48) CAD across DP *Paul*: *

a. Marie a supplié Paul d' acheter *plus* de magazines que de
Marie has begged Paul to buy more de magazines than de
journaux.
newspapers
Marie begged Paul to buy more magazines than newspapers.

b. *Marie a *plus* supplié Paul d'acheter de magazines que de journaux.

(49) CAD across PP *à Paul* 'to Paul': *

a. Marie a conseillé à Paul d' acheter *plus* de magazines que
Marie has advised to Paul to buy more de magazines than
de journaux.
de newspapers
Marie advised Paul to buy more magazines than newspapers.

b. *Marie a *plus* conseillé à Paul d'acheter de magazines que de journaux.

However, the CAD operator - deP dependency can hold once the intervening DP or PP has gotten out of the way. In (50a), the DP *Paul* has cliticized and in (50b), the PP *à Paul* has cliticized making the licensing of deP possible.

(50) CAD after cliticization of DP/PP: ✓

a. Marie l' a *plus* supplié d' acheter de magazines que de
Marie him has more begged to buy de magazines than de
journaux.
newspapers
Marie begged him to buy more magazines than newspapers.

b. Marie lui a *plus* conseillé d' acheter de magazines que
Marie him.DAT has more advised to buy de magazines than
de journaux.
de newspapers
Marie advised Paul to buy more magazines than newspapers.

In (51), the intervening DP and PP have been wh-extracted and the resulting sentences are grammatical.

(51) CAD after wh-movement of intervening XP: ✓

a. Qui est- ce que Marie a plus supplié d' acheter de
Who is it that Marie has more begged to buy de
magazines que de journaux ?
magazines than de newspaper
Who did Marie beg to buy more magazines than newspaper.

b. A qui est- ce que Marie a plus conseillé d'acheter de
To whom is it that Marie has more advised to buy
magazines que de journaux ?
magazines than newspaper
To whom did Marie advise to buy more magazines than newspaper ?

This contrast is also observed with the ECM verb *laisser* 'let' in (52). The dependency cannot hold across the raised DP *mes enfants* 'my children' in (52b), and as (52c) and (52d) show the sentences are grammatical once the DP has gotten out of the way.

(52) CAD into infinitival under ECM *laisser* 'let': ✓^{cl} / *^{DP}

a. Je vais laisser mes enfants lire *plus* de bandes dessinées que
I go let my children read more de comic strips than
de romans.
de books
I'm going to let my children read more comic strips than books.

b. *Je vais *plus* laisser mes enfants lire de bandes dessinées que de romans.

c. Je vais *plus* les laisser lire de bandes dessinées que de
I go more them let read more de comic strips than
romans.
de
I'm going to let my children read more comic strips than books.

d. Qui est- ce que tu vas *plus* laisser lire de bandes dessinées
Who is it that you go more let read de comic books
que de romans.
than de novels
Who are you going to let read more comic books than novels?

Those facts are unexpected under the BG account, especially in the face of the acceptability of the examples in (53) where CAD across the PP *à Marie* 'to Mary' does not cause unacceptability[20].

(53) CAD into DP over PP in ditransitive construction: ✓

a. J' ai prêté à Marie plus de livres sur la vie de Napoléon
I have lent to Marie more de books about the life of Napoleon
entre 1804 et 1814 que de livres sur la vie de Louis
between 1804 and 1814 than de books about the life of Louis
XIV.
XIV.
I've lent Mary more books about Napoleon's life between 1804 and 1814 than books about Louis XIV's life.

b. J' ai plus prêté à Marie de livres sur la vie de Napoléon entre 1804 et 1814 que de livres sur la vie de Louis XIV.

20. Note that the usual order in ditransitive constructions is DP PP. Changing this order to PP DP makes the sentence sound less natural. This unnaturalness can nevertheless be counterbalanced by making the DP 'heavy'.

Arguably though, the object DP *(plus) de livres sur la vie de Napoleon* in (53) has extraposed. If the CAD dependency is computed before the extraposition, we then have an explanation for the acceptability of this example.

The cases where a DP intervenes in *plus* movement resemble a kind of DP intervention that has been discussed in raising constructions such as (54)[21]. In (54a), *Jean* has raised from the lower subject position over the DP *Marie* and the resulting sentence is unacceptable. Cliticizing the DP as in (54b) makes the sentence acceptable.

(54) Subject raising in seem construction: $*^{PP}$ / $\checkmark^{cl}$

a. *Jean semble à Marie avoir du talent.
Jean seems to Mary have some talent
Intended: Jean seems to Mary to have talent.

b. Jean lui semble avoir du talent.

Those facts have been analyzed as 'defective intervention' (Rizzi 1986; Anagnostopoulou 2003; Hartman 2011). The idea is that in (54), *semble* 'seem' (or more precisely, the T_0 head to which *semble* has moved) looks for a DP to agree with, the first DP it finds is the one embedded in the PP *à Marie*, the movement of the DP *Jean* is thus not allowed, which is reflected as unacceptability (54a). However, if the intervener is moved out of the way (54b), T_0 agrees with the closest DP *Jean*, which then moves to [Spec, TP][22].

21. It is hard to find other examples to verify the claim that (unembedded) DP's intervene in the CAD relation. This is because French grammar is such that sequences of two postverbal DP's rarely occur. There is in French a group of verbs that can be followed by a DP and an NP or an NP and a DP (i), but not two DP's.

(i) Verbs that can be followed by two nouns
nommer 'name' *désigner* 'designate' *surnommer* 'nickname' *considérer* 'consider' *rendre* 'make' *estimer* 'estimate'

Like DP's, the predicative NP in the small clause embedded under those verbs, seems to exhibit an intervention effect too. The verb *nommer* 'name', for instance, takes a small clause as its complement (i.e. *directeurs* assigns a theta-role to *plus de salariés que de cadres*). In (ii), *plus* makes the resulting sentence in (iib) unacceptable.

(ii) a. Il a nommé plus de salariés que de cadres directeurs .
He has named more de employees than the managers directors
He has named directors more employees than managers.

b.*Il a plus nommé directeurs de salariés que de cadres.

However as (iiib) shows, *plus* is perfectly acceptable.

(iii) a. Il a nommé plus de salariés directeurs que de cadres
He has named more de employees directors than the managers
He has named directors more employees than managers.

b. Il a plus nommé de salariés directeurs que de cadres.

As long as *plus* has not moved, the order of the two constituents in the small-clause does not matter. The movement of *plus* is allowed as long as no NP intervenes.

Valois (1991)'s observed about QAD that the *plus-de* dependency can't hold across inverted constituents in small clauses. The same holds for CAD.

(iv) Context: Joseph is a retired professor. He's speaking with his friends who are asking him whether it was not too boring to teach introductory classes.

a. Cette année, j'ai considéré intelligents moins d'étudiants que l'année dernière.
This year, I have considered intelligent fewer de students than
This year I considered fewer students intelligent than last year.

b.*Cette année, j'ai moins considéré intelligents d'étudiants que l'année dernière.

22. In fact Homer (p.c.) points out to me that those 'intervention' facts are not that clear at all. For instance (i) is perfectly acceptable.

Although the descriptive generalization in both cases (*plus* movement and subject raising) looks similar, it is unclear how the defective intervention analysis could be extended to CAD. Moreover, it is not only DP's which intervene, adverbials do too. In (55) and (56), my informants consistently found a. and c. to be much better than examples b, in which the adverbial *à chaque fois* 'each time' or *demain* 'tomorrow' is pronounced between *plus* and deP.

(55) CAD across adverbial *à chaque fois*: ✗

a. Il m' a semblé à chaque fois avoir emprunté plus d' argent que toi.
It to.me has seemed at each time have borrowed more de money than you
Each time, it seemed to me that I borrowed more money than you did.

b. *Il m'a plus semblé à chaque fois avoir emprunté d' argent que toi.

c. A chaque fois, il m'a plus semblé avoir emprunté d' argent que toi.

(56) CAD across adverbial *hier*: ✗

a. Il m' a semblé hier avoir corrigé plus de copies que toi.
It to.me has seembed yesterday have graded more de copies than you
Yesterday, it seemed to me that I had graded more copies than you had.

b. *Il m'a plus semblé hier avoir corrigé de copies que toi.

c. Hier, il m'a plus semblé avoir corrigé de copies que toi.

(i) L' existence des corps semble à chacun être l' objet de ses sens.
The existence of.the bodies seems to every being the object of its senses
The existence of bodies seems to every one to be the object of their senses.

Table 1: Summary of locality restrictions

	CC	CAD
Tensed clauses	-	✗
Extraction islands		
Adjuncts	-	✗
Wh-islands	-	✗
Coordinate structure		
↪ *extraction out of both deP conjuncts*	✓	✓
↪ *extraction out of one deP conjunct only*	✗	✗
Infinitival constructions		
Causatives	-	✓
Raising		
↪ *to subject*	-	✓
↪ *to object*	-	✓
Control		
↪ *subject*	-	✓
↪ *object*	-	✓
Intervention		
DP	-	✗
PP	-	✗
Does cliticization help?	-	✓
Adverbial	-	✗

- means that the test is not applicable

While things are open, this pattern of locality, especially the facts related to intervention, point toward a syntactic explanation. It is difficult to see how a purely semantic account would explain the locality facts and the intervention facts. In the next section I present another argument for movement in terms of reconstruction effects.

4 OVERVIEW OF POTENTIAL THEORIES AND THEIR PREDICTIONS

Heim (2001) shows that scope ambiguities can be found in comparative constructions when the degree word is non-upward monotonic (*i.e.* downward-monotone degree Q 'less' or non-monotone ones 'exactly-differentials') and the construction involves a scope-bearing element (such as an intensional verb). Her findings that comparative constructions trigger scopal ambiguities (of the kind found between a quantificational DP and an intensional verb) follow from the specific structure she assumes English comparative constructions have (namely, that the comparative morpheme forms a constituent of type <dt,t> with the standard of comparison at LF, and that the standard of comparison involves ellipsis for the Russell ambiguity). If we assume that scope ambiguities are indeed the result of the movement of a quantificational element over another, the absence or presence of scope ambiguities in French nominal comparatives can help us answer two questions:

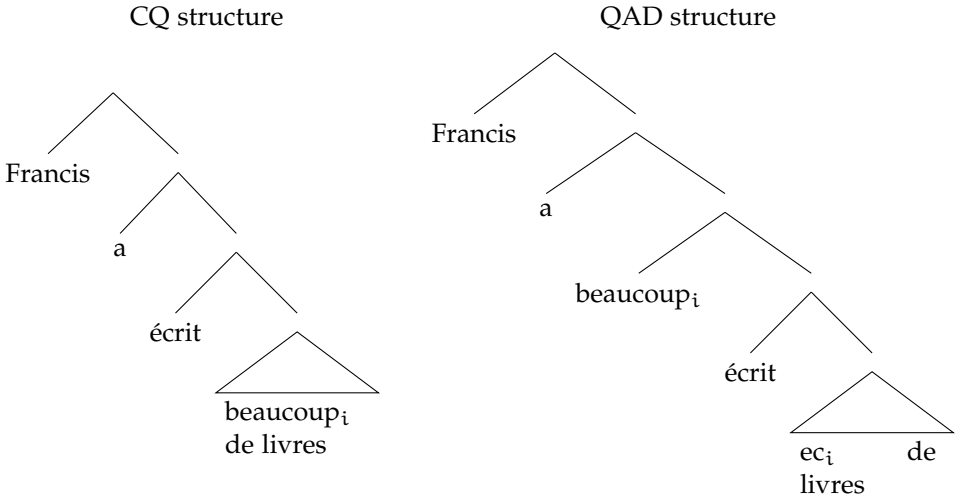
– Can the comparative operator be interpreted in the position where it appears?

– Can the comparative operator be interpreted in a different position than the one in which it appears?

As mentioned before, two competing analyses could account for CAD: the base-generation and the movement analyses. They make different predictions relative to scope ambiguities.

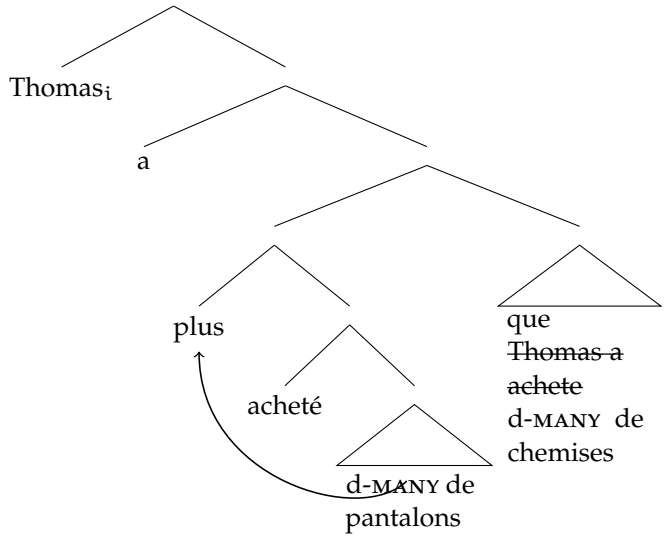
The base-generation hypothesis makes two predictions: (1) *-er* is interpreted in the position where it is pronounced or higher (via covert QR), and (2) *-er* cannot be interpreted in a position lower than the one it is spelled out in.

Figure 1: Base-generation analysis



The movement hypothesis makes two predictions: the first is the same as (1) for the base-generation hypothesis, and (2) *-er* can be interpreted lower than the position where it is pronounced (assuming that there is at least one interpretable position lower), the operator can reconstruct at LF to a position that it moved through/from.

Figure 2: Movement analysis



To test this, we need to find another scope-bearing element[23] that *moins* 'less' can be pronounced above, and see which readings are available[24]. In the next section, I show that the first prediction of both hypotheses is met. Then I show that the second prediction of the second hypothesis is met while that of the first is not.

5 SCOPAL AMBIGUITIES

5.1 Heim's examples

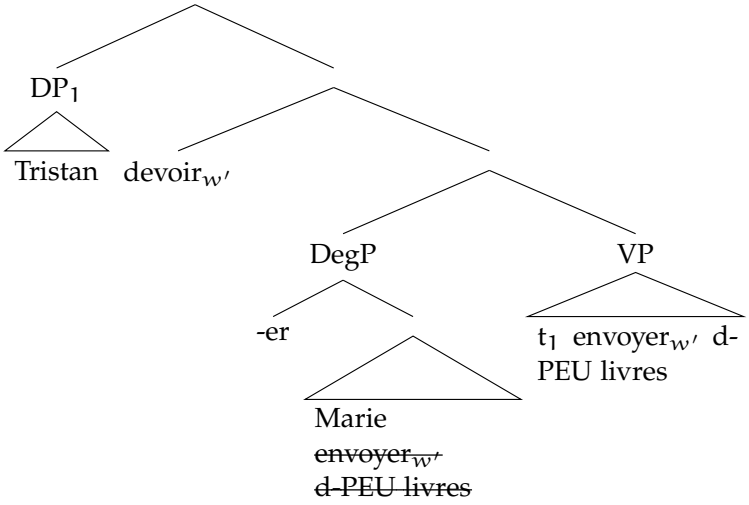
Heim (2001) looks at English comparative constructions in which the comparative quantifier *less* is pronounced low (i.e. next to the gradable predicate, the only place where it can be pronounced in English) but can be interpreted high (above a scope-bearing element). In this section, I want to show that French comparative constructions exhibit the same ambiguities as their English counterparts when the comparative quantifier is pronounced next to the gradable predicate. Heim uses adjectival comparatives but her point can be made using nominal comparatives. I look at the interpretation of sentences containing the downward-monotonic degree operator *moins* 'less' and the modal *devoir* 'must'. In the examples that follow, the standard of comparison denotes a constant (in my examples, the quantity corresponding to 50 books) following Heim's examples. Let's examine (57).

(57) Tristan a dû envoyer moins de livres que Marie.
Tristan has must send fewer de books than Marie
Tristan had to send fewer books than Marie.

The comparative quantifier *-er* (spelled out as *moins* 'less') is merged and spelled out next to the nominal gradable predicate *de livres* 'books'. The comparative quantifier *-er* needs to raise to be interpretable. If it is the case that the comparative quantifier can undergo covert movement to a scope position, two readings are expected: one in which *-er* raises to an interpretable position below the modal (devoir » moins), and another one in which it raises to an interpretable position above the modal (moins » devoir). The surface reading of (57) can be derived as in (58).

23. For this argument to hold it is crucial that the scope-bearing element should not be able to move covertly, otherwise covert movement of this scope-bearing element could give it scope over *moins* where it is pronounced. Modals in French have been argued not to be able to move covertly by Hacquard (2006, p. 44). A challenge is that Homer (2011, p. 217) claims that *devoir* 'must' is a PPI, which can escape out of the scope of negation by moving covertly out of its scope. Here is how the challenge might be answered. First it is not clear that *moins* includes negation. Secondly, if the wide-scope of the modal is the reason why it looks as if *moins* had reconstructed below it, we would expect there to be this possibility every time we find the sequence *moins devoir*. In a questionnaire (*see* appendix 1 on page 51),out of a total of 6 French native speakers, 4 get the inverse scope reading when *devoir* embeds an infinitival with CAD, against only 1 person when *devoir* embeds a similar infinitival without CAD. If inverse-scope was due to the covert movement of *devoir*, it should be available no matter what the embedded complement looks like. On the movement approach however, those facts are naturally explained, since when the complement does not have CAD, *moins* does not move from a position below the modal and can't therefore reconstruct.
24. For ease of representation, I adopt the following assumptions from Heim (2001). The degree head and the standard of comparison form a constituent. The standard of comparison undergoes obligatory extraposition at PF. The following trees are simplified LF representations.

(58) devoir » moins:

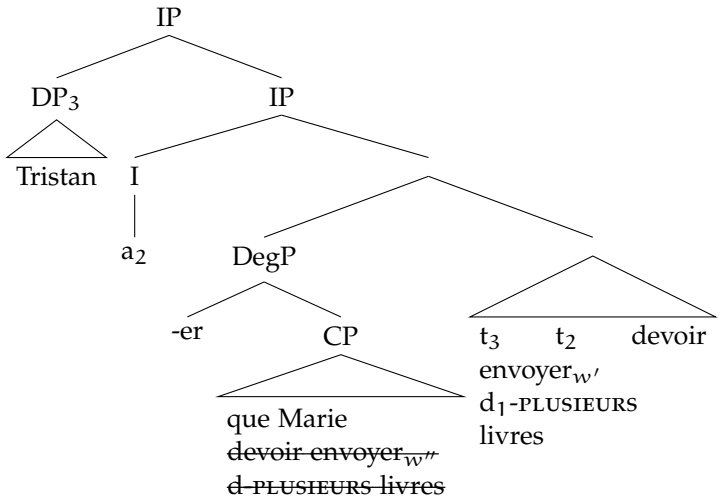


∀w' ∈ Acc(w) Max{d | Tristan sent d-FEW books in w'} < Max{d | Marie sent d-FEW books in w'}

In this simplified LF form, DegP moves above VP. The interpretation of this LF yields a 'maximality' reading, Tristan sends fewer books than Marie does in every acceptable world. In other words, Tristan is not allowed to send more books than Mary.

But the sentence in (57) has another reading corresponding to *-er* taking wide-scope. It can be derived as shown in (59).

(59) moins » devoir :



Max{d | ∀w' ∈ Acc(w) Tristan sent d-FEW books in w'} < Max{d | ∀w'' ∈ Acc(w) Marie sent d-FEW books in w''}

In (5), DegP raises all the way above *devoir*, which yields the 'minimality' reading: the maximum number of books, d, such that Tristan sends d books in every single acceptable world is smaller than the maximal number of books that Marie sends. In other words, the maximal number of books that Tristan sends in the world in which he sends the fewest, is smaller than the maximal number of books that Marie sends in the world in which she sends the fewest.

In what follows, I look at examples where the comparative quantifier is pronounced in the higher position but interpreted in the lower position[25].

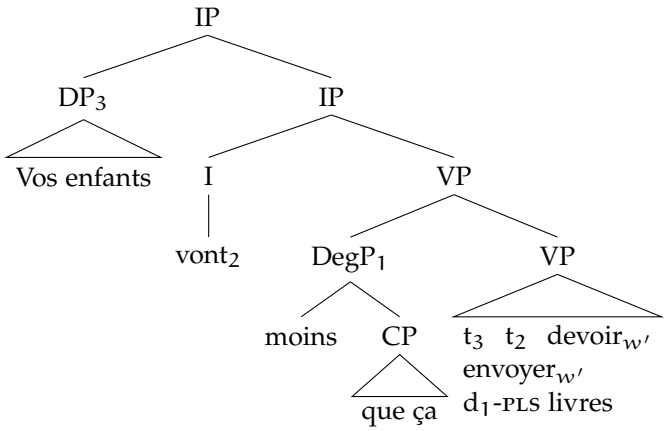
5.2 Interaction of comparatives and intensional verbs

We have seen that the first prediction of both the base-generation and the movement analyses is borne out. In this section I show that the second prediction of the movement analysis is borne out too by looking at an ambiguity resulting from the two possible scope relations of the Max operator (provided by the degree word) and the universal quantifier (provided by a strong modal verb). The degree phrase contains a constant, this is to avoid complicating the picture with another scope ambiguity that will be discussed in the next section (5.3 on page 29).

Example (60a) is predicted to have two readings: the surface reading *less»must* (60b) and the inverse-scope reading *must»less* (60c).

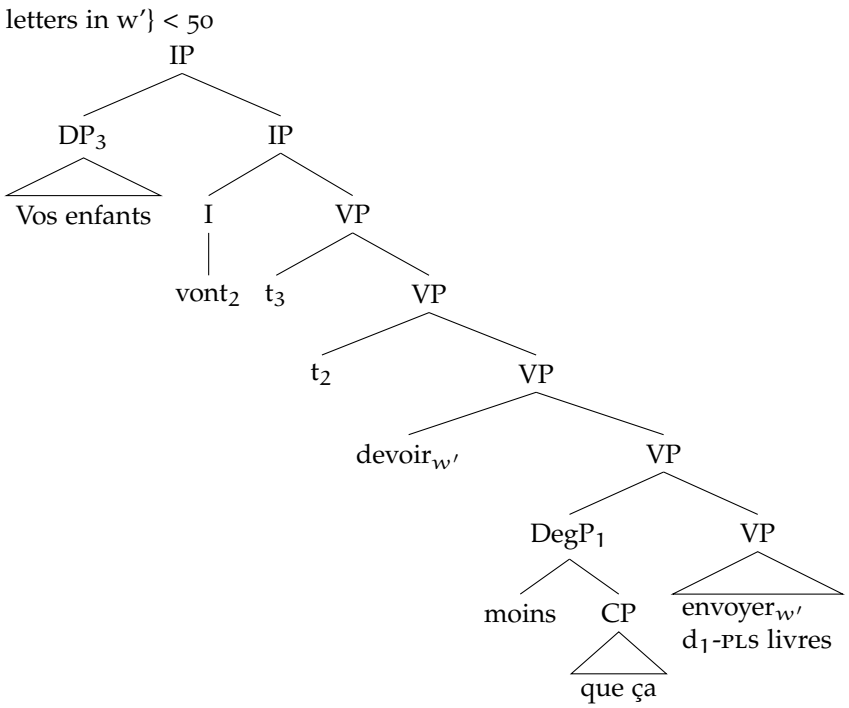
(60) a. Vos enfants vont moins devoir envoyer de lettres que ça.
Your children go less must send de lettres than this

b. The surface or 'minimality' reading (moins » devoir):
Max{d | ∀w'∈ Acc(w) Your children are going to send d-MANY letters in w'} < 50



c. The inverse-scope or 'maximality' reading (devoir » moins):
∀w' ∈ Acc(w) Max{d | Your children are going to send d-MANY

25. This is the reverse of what Heim (2001) does since she looks at cases in English where the comparative quantifier is pronounced low but interpreted high.



The minimality reading corresponds to *moins* taking scope over *devoir*. It can be paraphrased as follows: the minimum number of letters that the children are required to send is less than 50. It says nothing about an upper end, leaving open that they are allowed to send more letters. That such a reading is available is shown by the felicitous use of (60a) in the following context (61).

(61) Context: Parents are gathered together in their children's classroom for a meeting with their teachers. The children are all going to apply for an internship over the summer. One teacher tells the parents that one year, a child sent out 50 application letters. Of course, children are free to send as many or even more letters but it's also definitely not necessary for them to send as many. Two parents are talking

Vos	enfants	vont	moins	devoir	envoyer	de	lettres	que	ça.
Your	children	go	less	must	send	de	lettres	than	this

The maximality reading corresponds to *devoir* taking scope over *moins*, that is the inverse scope of what we see on the surface. It can be paraphrased as follows: the maximal number of letters that the children are allowed to send is less than 50. That such a reading is available is harder to show because it entails the minimality reading, therefore it is not possible to devise a context in which the minimality reading is false but the maximality reading is true[26].

26. Just like the 'minimality' reading involves comparing a lower bound to the quantity denoted by the standard of comparison, the 'maximality' reading involves comparing an upper bound to this quantity. Consider the following sentence.

(i) Jean va moins devoir boire d' alcool que ça (=3 liters / week).
Jean goes less must drink de alcohol than this
Jean will have drink less alcohol than this.

To test whether the minimality reading is available, we want a context that makes the maximality reading false. Context (ii) is such a context.

A more complicated task needs to be used instead of pure acceptability judgements: a falsity judgment task. In what follows (62), subjects were asked to judge whether a dialogue between two speakers was coherent. The scenario in (62) sets up the minimality reading while making the maximality reading false. The scenario tells us that two parents are talking about a parent / teacher meeting that happened earlier. Speaker A utters the test sentence in (62a). Speaker B reacts to A's utterance by denying the stronger maximality reading. For the dialogue to be coherent, it has to be the case that A's utterance has the maximality reading, otherwise B's denying it would not be coherent.

(62) Context: Parents are gathered together in their children's classroom for a meeting with their teachers. The children are all going to apply for an internship over the summer. One teacher tells the parents that one year, a child sent out 50 application letters. Of course, children are free to send as many or even more letters but it's also definitely not necessary for them to send as many. Two parents are talking[27]:

a. Les enfants vont moins devoir envoyer de lettres que
The children go less must send de lettres than
ça(= 50 letters).
this

b. Mais c' est faux voyons ! Au contraire ... s' ils veulent,
But this is false see ! On.the contrary if they want
ils peuvent en envoyer à toutes les entreprises du
they can them send to every the company in.the
pays.
country
But that's not true, come one! If the want, they can send letters to every single company in the country!

In a questionnaire filled out by 6 native French speakers, 4 judged that the dialogue in (6) was coherent. This added to my own intuitions suggests that when *moins* 'less' is pronounced before *devoir* 'must', *moins* can be interpreted in the scope of *moins*. It is difficult to interpret the other 2 judgements and a more extensive study should be conducted.

The fact that *moins* can be pronounced to the left of the modal but be interpreted beneath it suggests that *moins* reconstructs to a lower position.

5.3 DegP scope and De re / de dicto ambiguity

Comparative constructions whose DegP contains a full clause have an ambiguity that has to do with the binding of the world variable in DegP.

(ii) Minimality context
Jean works for a company that sells whiskey. He is in charge of tasting whiskey. His company usually compels him to taste at least 1 liter of whiskey per week, but never more than 3 liters. Next week is a short week and so, his company has lowered the minimal requirement to half a liter.

It is not possible to devise a context in which the maximality reading is true (by lowering the maximal amount allowed to 2 liters for instance) but the minimality reading is false.

27. L'année dernière, certains enfants du collège ont envoyé jusqu'à 50 lettres de candidature pour trouver un stage. Évidemment, les enfants peuvent en envoyer autant voire plus mais il n'est pas non plus nécessaire d'en envoyer autant. Deux parents d'élèves se parlent.

In English comparative constructions, Williams (1974) and Sag (1976) noted a relation between the size of the ellipsis in the standard and the availability of the *de dicto* reading. This can be seen with example (63).

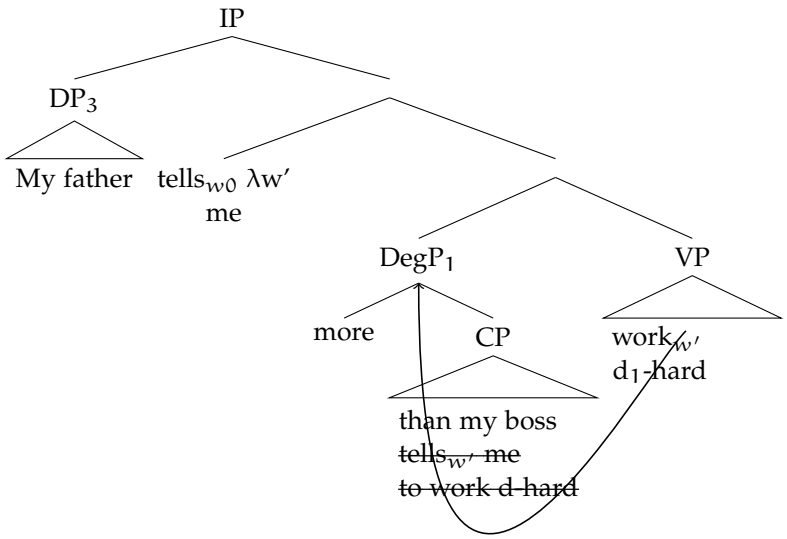
(63) My father tells me to work harder than my boss does.

Sentence (63) is reported to have 3 readings:

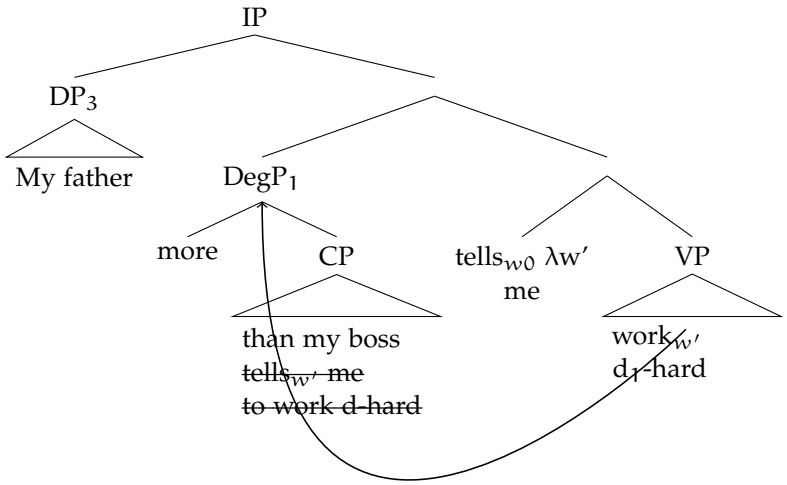
- tell»DegP: No matter how much my boss actually works, my father tells me to make sure that I work harder than him.
- tell»DegP: My father tells me to work 10 hours a day. My boss works 8 hours a day.
- DegP»tell: My father tells me to work 10 hours a day, whereas my boss tells me to work 8 hours a day.

However (63) does not have the meaning corresponding to the state of affairs in which my father tells me that no matter how many hours my boss tells me to work, I should work more hours than I'm told. Williams (1974) hypothesized that the unavailability of this reading is due to an ACD violation. For (63) to have this reading, the ellided constituent has to be 'tells me to work d-hard' and this constituent must be interpreted *in* the scope of the matrix verb. But these two requirements are at odds: as can be seen in (64), leaving DegP low in the scope of the matrix verb creates an ACD violation, and having DegP above the constituent 'tells me to work d-hard' makes it impossible for the world variable to be bound by matrix *tell*.

(64) a. Structure with ACD: *



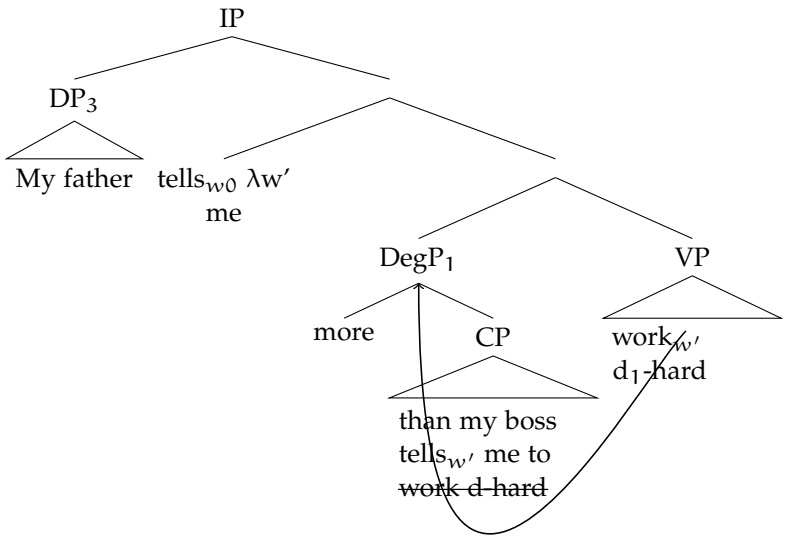
b. World variable can't be bound by matrix *tell*: *



Reducing the size of the ellipsis to avoid ACD as in (65) makes the missing *de dicto* reading available.

(65) a. My father tells me to work harder than my boss tells me to.

b. No ACD violation: ✓



If DegP has wide scope, the world variable on VP in DegP cannot be bound by the same world variable as VP in the main clause is. These facts suggest the following implication (66).

(66) UNIDIRECTIONAL IMPLICATION (de dicto / low DegP scope)
If a DegP has wide scope, the *de dicto* reading is not available.

Assuming that the resolution of the ellipsis in French works the same way as in English, this implication can be used to provide another hint in order to know where the degree word is interpreted in French nominal comparatives. Particularly, if a *de dicto* interpretation is available when the degree word is pronounced before an intensional verb, then we have another hint that the degree word can't be interpreted *in situ* and must have undergone reconstruction below the verb.

First let us look at a sentence in which the degree word *plus* 'more' is pronounced in CQ position below *vouloir* 'want' (67a). The sentence has both *de re* and *de dicto* readings. It is true in context (67b) and context (67c)

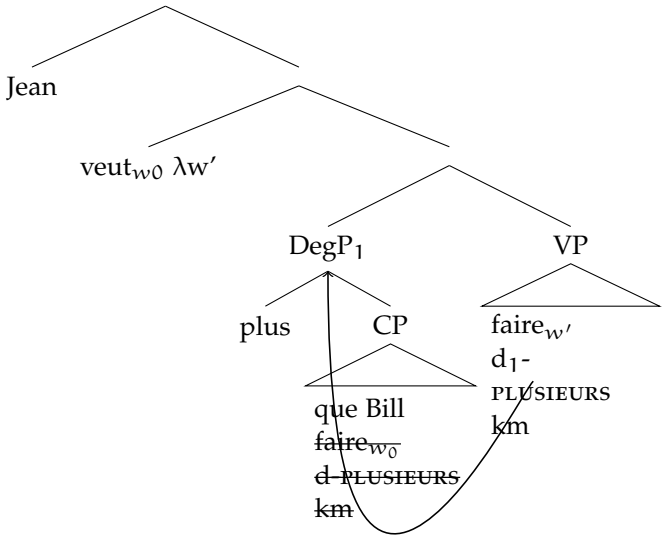
(67) a. Jean va vouloir faire plus de kilomètres que Bill.
Jean goes want do more de kilometers than Bill
Jean will want to drive more than Bill. (lit. do more kilometers)

b. *De re* context: Christine is going on holiday with several friends. Two of them don't know each other yet: Jean and Bill. They are both going to drive. Bill has agreed to drive the first 400 km. Christine knows that Jean will want to drive all the way to their destination, which is 800 km. Christine comments to her mother:

c. *De dicto* context: Jean and Bill are friends and they love car racing. This Saturday, they are both leaving for a car rally in the Moroccan desert. They have 5 days to go as far as possible. Jean is a lot more competitive than Bill.

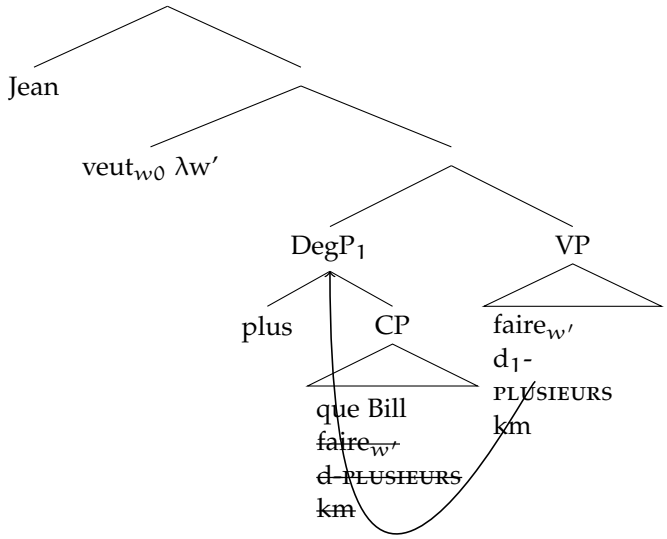
The de re / de dicto interpretation is a matter of how DegP is interpreted (*see* Percus 2000 on world variable binding). When DegP scopes below the intensional verb, the world variable on the VP may be bound either locally (*de dicto*) or non-locally (*de re*).

(68) a. vouloir » DegP : De re



⟦S⟧= ∀w′∈Jean's desire(w_0)
max{d: Jean does$_{w'}$ d-MANY km }
> max{d: Bill does$_{w0}$ d-MANY km }

b. vouloir » DegP : De dicto



⟦S⟧= ∀w′∈Jean's desire(w_0)
Max{d | Jean does$_{w'}$ d-MANY km }
> Max{d | Bill does$_{w'}$ d-MANY km }

Now, let's see if both readings are available when *plus* 'more' is high (69a). I repeat the contexts given in (67) in (69)

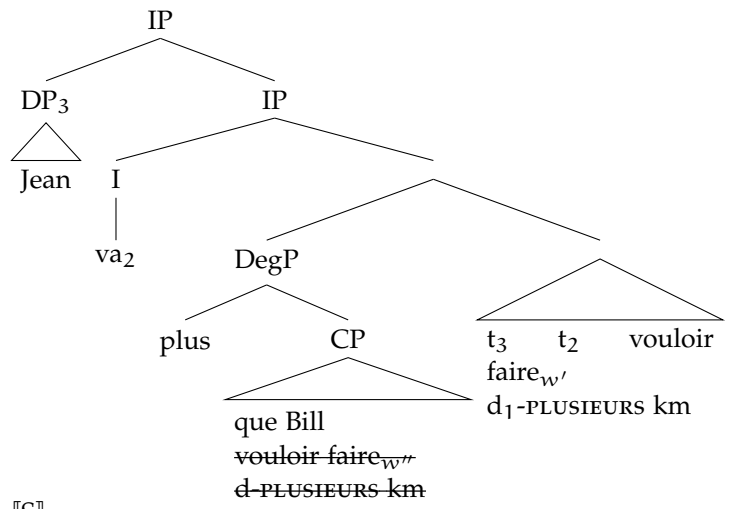
(69) a. Jean va plus vouloir faire de kilomètres que Bill.
Jean goes more want do de kilometers than Bill
Jean will want to drive more than Bill. (lit. do more kilometers)

b. *De re* context: Christine is going on holiday with several friends. Two of them don't know each other yet: Jean and Bill. They are going to drive a different car each. Bill has agreed to drive the first 400 km. Christine knows that Jean will want to drive all the way to their destination, which is 800 km. Christine comments to her mother:

c. *De dicto* context: Jean and Bill are friends and they love car racing. This Saturday, they are both leaving for a car rally in the Moroccan desert. They have 5 days to go as far as possible. Jean is a lot more competitive than Bill.

(70) DegP » vouloir : no de dicto

a.



⟦S⟧=
max {d: ∀w'∈Jean's desire(w_0):Jean does$_{w'}$ d-MANY km$_{w0}$}
> max {d: ∀w''∈Bill's desire(w_0): Bill does$_{w''}$ d-MANY km$_{w0}$}

b. *de dicto
~~max {d: ∀w'∈Jean's desire(w_0): Jean does$_{w'}$ d-MANY km$_{w0}$} >~~
~~max {d: ∀w''∈Bill's desire(w': Bill does$_{w''}$ d-MANY km$_{w0}$}~~
This is not a possible interpretation because DegP is not in the scope of main clause *vouloir* 'want'

That the *de dicto* reading is available in (69a) is a further hint that DegP is not interpreted where it is pronounced. If *plus* were base-generated and interpreted in above *vouloir* 'want' as (70a) illustrates: the *de dicto* reading should not be available because DegP would be out of the scope of *vouloir* 'want', making it impossible for the VP world variable in DegP to be bound by *vouloir* 'want' (70a). Alternatively, leaving DegP in the scope of *vouloir* 'want' makes local world variable binding possible (70b) contrary to what the base-generation / adverbial analysis predicts.

In this section I have shown that *moins* 'less' can be interpreted below the position where it is realized, which is an argument in favor of a movement analysis. The locality restrictions affecting CAD movement however do not permit us to clearly conclude about the kind of movement that CAD undergoes. In the next section, I show that although we do not know the exact nature of CAD movement, other words of French undergo the same kind of movement.

6 A COMPARISON OF THE LOCALITY RESTRICTIONS HOLDING OF *plus* / *tout*

I have shown that analyzing CAD as movement explains a number of phenomena. In this section I show that other words, which have been argued to move, exhibit the same locality restrictions as *plus* 'more', thus suggesting that *plus* should be analyzed similarly.

The quantifier *tout* 'everything' used as an object can be pronounced in positions that are not positions where objects can ordinarily be pronounced

(72), namely the position to the left of a non-finite verb. In (71), *tout* is the object of *lire* 'read'; it can be pronounced in the usual object position (right of *lire*), or to the left of *lire*, or to the left of the embedding verb *vouloir* 'want'. The examples in (72) show that the object *un roman* 'a novel' may only be pronounced to the right of *lire*.

(71) Object *tout* movement: ✓

a. Elle a voulu lire tout.
She has wanted read all
She wanted to read everything.

b. Elle a voulu tout lire.

c. Elle a tout voulu lire. (Kayne 1975, p. 11)

(72) Movement of ordinary object: *

a. Elle va lire un roman.
She goes read a novel
She will read a novel.

b. *Elle va un roman lire.

c. Elle va lire ça.
She goes read this
She will read this.

d. *Elle va ça lire. (Kayne 1975, fn 12)

A number of linguists have either argued or assumed that *tout* undergoes movement to the left (Kayne 1975; Vecchiato 1999; Cinque 2002)[28]. As far as I know Kayne's is the most extensive piece of work on the topic of *tout*[29] : he considers a whole range of facts (the interaction of *tout* movement with clitic placement and with causative constructions) which support the movement hypothesis better than the base-generation hypothesis. That is, the base-generation hypothesis would need additional assumptions in order to account for the facts that Kayne presents. For instance in (71), *tout* receives a patient theta-role from *devoir* in all three cases. If, one assumes that in fact in those examples, *tout* is base-generated, then it is not clear how the syntax knows that *tout* receives a theta-role from *lire* 'read' and not from *vouloir* 'want' (Projection Principle violation). In order to do that, one needs to have an enriched theory of theta-role assignment, which is in fact just what Doetjes (1997) assumes[30].

28. For the sake of simplicity I only consider *tout* here, but these authors make their arguments considering both *tout* 'everything' and *rien* 'nothing'.

29. Kayne first considers examples where *tout* heads a DP, and where the movement of this *tout* is contingent on the cliticization of the DP. In those cases, *tout* can only move if the DP it heads has been cliticized.

(i) a. Elle a voulu lire tous les livres.
She has wanted read all the books
She wanted to read all the books.

b. Elle a voulu tous les lire.

c. Elle a tous voulu les lire.

d.*Elle a voulu tous lire les livres.

30. Doetjes (1997) argues in favor of the base-generation analysis for *tout* on the basis that her theory allows her to unify cases where *tout* quantifies over the subject but is pronounced to the

In what follows, I systematically compare CAD operators and *tout* with respect to the distance that can separate them from their assumed base-generated position[31]. I summarize the results in 6.5 on page 38 and conclude that the set of environments in which *plus* movement is allowed is identical to the set of environments in which *tout* 'all' movement is allowed.

6.1 Extraction islands

Just like *plus* 'more', *tout* 'all' cannot move out of extraction islands.

(73) Movement out of adjunct: *

a. Il s' est blessé en rangeant tout.
He refl is wounded in tidying all
He got injured misbehaving.

b. *Il s' est tout blessé en rangeant.

(74) Movement out of complex NP: *

a. J' ai trouvé un homme à qui tout vendre.
I have found a man to whom all sell
I have found a man to whom I can l sell everything.

b. *J' ai tout trouvé un homme à qui vendre.

(75) Movement out of wh-island: *

a. Christian s' est demandé où tout acheter.
Christian refl is asked where all buy
Christian wondered where to buy everything.

b. *Christian s' est tout demandé où acheter.

As I have already shown in section 3.2.2.4 on page 16, CAD into a coordinate structure is only possible when it is into both conjuncts (i.e. both conjuncts are de-NP's). The same generalization holds of *tout*. It is hard to show that extraction out of one conjunct is not possible since *tout* always appears on the left of the verb anyway. In order to show this for those words, we need to add one more layer of embedding, which is not equally cost-free (as far as acceptability goes) with all those words. I use the raising verb *devoir* 'must' (*see* 6.3 on the next page for more details on which embedding verbs allow CAD.)

---

right of it (ib) (a.k.a. 'R-tous' in (Kayne 1975) and 'floating tous' in (Sportiche 1988)) and cases where *tout* quantifies over the object but is pronounced to the left (71).

(i) a. Tous les enfants sont venus.
All the children have come
All the children came.

b. Les enfants sont tous venus.

As far as I am aware she does not present arguments against the movement analysis of *tout*.

31. I also include *bien/mal* 'well/badly' in the comparison (*see* 1 on page 51).

(76) Movement out of one conjunct: *, out of both conjuncts: ✓

a. J' ai dû tout dire et tout faire.
I have must all say and all do
I had to give everything and do everything.

b. *J' ai tout dû dire et *tout* faire.

c. J' ai tout dû dire et faire.

6.2 Tensed clauses

Like CAD operators, *tout* cannot move out of a tensed clause.

(77) Movement out of tensed clause: *

a. Il va penser [$_{CP}$ qu' on a tout pris.] [].
He goes think that we have all taken
He's going to think that we took everything.

b. *Il va tout penser [$_{CP}$ qu' on a pris] .

6.3 Infinitival constructions

The quantifier *tout* can move out of embedded infinitives, whether the emdedding verb is a causative verb (78), a modal (79), or a control verb (80.)

(78) Movement out of infinitival clause under causative: ✓

a. Je vais faire *tout* tailler à mon jardinier.
I go make all prune to my gardener
I'm going to make my gardener prune everything.

b. Je vais *tout* faire tailler à mon jardinier.

(79) Movement out of infinitival under modal: ✓

a. Je vais devoir *tout* manger.
I go must all eat
I'm going to have to eat everything.

b. Je vais *tout* devoir manger.

(80) Movement out of infinitival under control verb: ✓

a. Il a essayé de *tout* lire.
He has tried de all read
He tried to read everything

b. Il a *tout* essayé de lire.

6.4 Intervention

The quantifier *tout* is sensitive to DP intervention too as the sentences in (b) show, and cliticization improves the acceptability of the sentence (c.).

(81) Movement over DP: *, over clitic: ✓

a. Je vais laisser mes enfants tout lire.
I go let my children all read
I'm going to let my children read everything.

b. *Je vais *tout* laisser mes enfants lire.

c. Je vais tout les laisser lire.
I go all them let read
I'm going to let them read everything.

It is also sensitive to adverb intervention (82).

(82) a. Je vais essayer demain de tout finir.
I go try tomorrow to all finish
Tomorrow, I'll try to finish up.

b. *Je vais tout essayer demain de finir.
I go all try tomorrow to finish
Intended: Tomorrow, I'll try to finish up.

6.5 Summary

Table 2 is a summary of the locality restrictions that apply to the following dependencies: CAD operators, *tout* 'all' and *mal* 'badly'. For the sake of clarity, I have not reported all the data above, but they can be found in the appendix.

Table 2: Can the operator appear far from its BG position out of the following constituents?

	CAD	tout / rien	mal / bien / vite
Tensed clauses	✗	✗	✗
Extraction islands			
Adjuncts	✗	✗	✗
Wh-islands	✗	✗	✗
Coordinate structure			
↪ *extraction out of both deP conjuncts*	✓	✓	✓
↪ *rextraction out of one deP conjunct*	✗	✗	✗
Infinitival constructions			
Causatives	✓	✓	?
Raising			
↪ *to subject*	✓	✓	✓
↪ *to object*	✓	✓	#
Control			
↪ *from subject*	✓	✓	#
↪ *from object*	✓	✓	#
Intervention			
DP	✗	✗	?
PP	✗	✗	?
Does cliticization help?	✓	✓	?
Adverb	✗	✗	✗

✓ Extraction is possible.
✗ Extraction leads to ungrammaticality.
? The judgment is unclear.
The preverbal position is acceptable but the resulting meaning is not the same.

Although some of the judgments concerning *mal* 'badly' / *bien* 'well' are unclear, it is quite clear that the set of environments that CAD is allowed in is identical to the set of environments in which tout/*rien* is allowed to be extracted (83), at least on the tests that I have performed. This suggests that if *tout* moves as Kayne (1975); Vecchiato (1999); Cinque (2002) have argued, then so do CAD operators.

(83) ***plus*/*tout* correlation**
plus can move ↔ *tout* can move

7 ANALYSIS

7.1 Covert *-er* movement and CAD

So far I have not made any commitment as to the relation between covert *-er* movement and the overt movement of the CAD operators, but the question is worth asking. Is overt degree quantifier movement the realization of covert degree quantifier movement?[32]. I have shown in 5 on page 25 that the degree word can be interpreted in the position where it is pronounced, but it can also be interpreted in a different position from the one in which it is pronounced.

I show in this section that covert movement of the degree head is indeed independent of the overt movement of the CAD operators, and that covert movement of the degree head is subject to fewer restrictions than overt movement since it is not blocked out of PP. Recall that I have shown that overt movement of the comparative quantifiers is not possible out of PP's, and other adjuncts. Thus in (84) and (85), moins 'less' can only be pronounced next to the compared constituent *de gens* 'de people' (a).

(84) a. Il va devoir faire des excuses à moins de gens que ça.
He goes must do some apologies to fewer de people than that

b. *Il va devoir moins faire des excuses à de gens que ça.

c. *Il va moins devoir faire des excuses à de gens que ça.

(85) a. Cette année, je vais devoir faire la cuisine pour moins de gens que l' année dernière.
This year, I go must do the cuisine for fewer de people than the year last

b. *Cette année, je vais devoir moins faire la cuisine pour de gens que l'année dernière.

c. *Cette année, je vais moins devoir faire la cuisine pour de gens que l'année dernière.

In what follows, I show that the sentence in (85a) has two readings: the surface scope reading (devoir » DegP), and the inverse-scope reading (DegP » devoir), for which I assume that *-er* covertly moves out of PP.

The fact that example (84a) is true in context (86) shows that it has the inverse-scope reading.

32. In fact, Bouchard (2012) entertains this hypothesis for a different construction in Québec French, which he calls Intensification at A Distance. Despite its name, Bouchard arrives at the conclusion that the construction does not involve any distance quantification

(86) Context: Last year's Christmas was at my house. I was in charge of cooking for 25 adults on my own. This year, 5 people have said that they may not be able to come because of work. Of course, I can cook for them too, just in case they show up, but if they come they promised to bring food, so I only really have to cook for 20 people.

The inverse-scope reading can be paraphrased as follows: the minimum number of people that I am *required* to cook for this year is less than 25. This reading is compatible with a situation in which I cook for 25 people or more.

The surface-scope reading can be paraphrased as follows: this year the maximal number of people that I am allowed to cook for is 25. To test this reading, we need to use a more complicated task than the felicity judgement. This is because the wide-scope reading of *devoir* entails the narrow-scope reading, therefore we cannot make the narrow-scope reading false and the wide-scope reading true at the same time. I therefore use a falsity judgment task below where speakers are asked to judge whether a dialogue sounds coherent or not[33]. The dialogue in (87) is coherent, which confirms that the surface-scope reading is available.

(87) Context: Last year's Christmas was at my house. I was in charge of cooking for 25 adults on my own. This year, 5 people have said that they may not be able to come because of work. Of course, I can cook for them too, just in case they show up, but if they come they promised to bring food, so I only really have to cook for 20 people.

a. Cette année, je vais devoir faire la cuisine pour moins de
This year, I go must do the cuisine for fewer de
gens que l' année dernière (=25 people).
people than the year last

b. Mais c' est faux voyons ! Au contraire ..., tu peux
But this is false see ! On.the contrary you can
cuisiner autant que tu en as envie, tout le monde sera
cook as much as you it have envy, all the world will.be
content.
happy
But that's not true, come one! On the contrary, you can cook as much as you want, everyone will be happy!

Another example of -er covert movement out of a constituent from which overt movement is not possible comes from ellipsis resolution. Example (88a) can have the reading 'Jean will want more people to go to the syntax class than Marie will', which is another strong indication that *-er* must be able to scope out of the tensed clause to allow ellipsis resolution without ACD violation (*see* 5.3 on page 29). I call this reading 'reading 1'[34]. Example (88b) is ungrammatical because *plus* has been extracted out of a tensed clause.

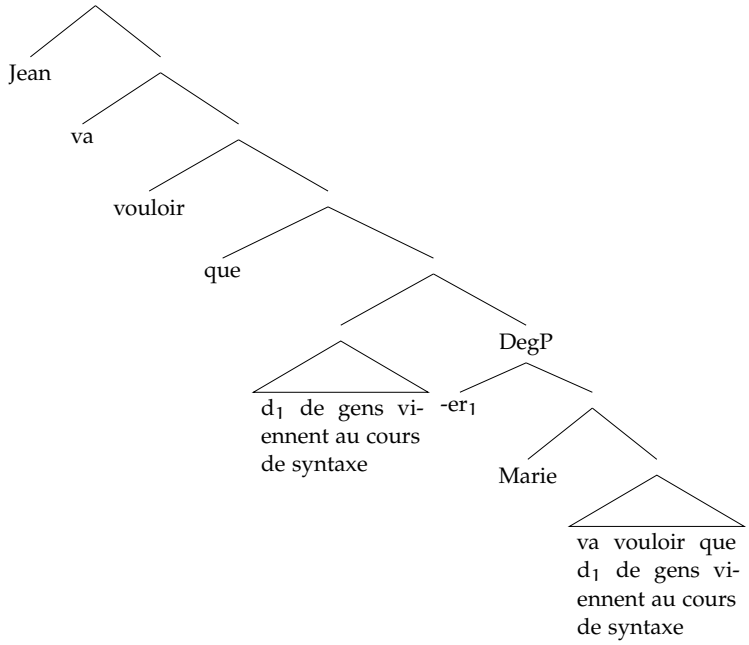
33. For more detail on this task *see* 5.2 on page 27
34. The other reading 'reading 2' can be roughly paraphrased as 'Jean will want more people to come to syntax than just Mary'.

(88) a. Jean va vouloir que plus de gens viennent au cours de
Jean goes want that more de people come.SUBJ to.the class of
syntaxe que Marie.
syntax than Marie
Jean will want more people to come to the syntax class than Marie will.

b. *Jean va plus vouloir que de gens viennent au cours de syntaxe que Marie.

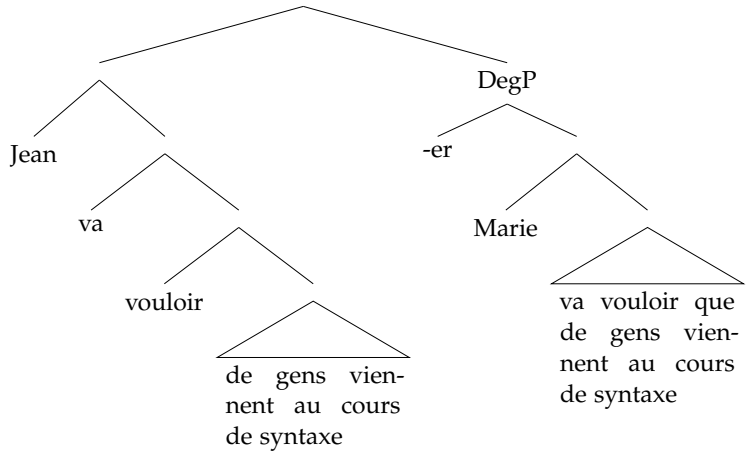
The simplified LF in (89) illustrates why reading 1 cannot be obtained if DegP scopes below *vouloir* 'want': the structure would be a case of ACD.

(89) vouloir » DegP, reading 1: *ACD



The only way to derive reading 1 for (88) is then for DegP to take scope above *vouloir* 'want' as (90) illustrates.

(90) DegP » vouloir, reading 1: ✓



Example (88) with reading 1 is an example in which *plus* can move covertly but not overtly. CAD movement is not isomorphic to DegP movement, and

one can occur independently of the other. I now turn to showing how to derive the meaning of the structures created by CAD.

7.2 Derivations

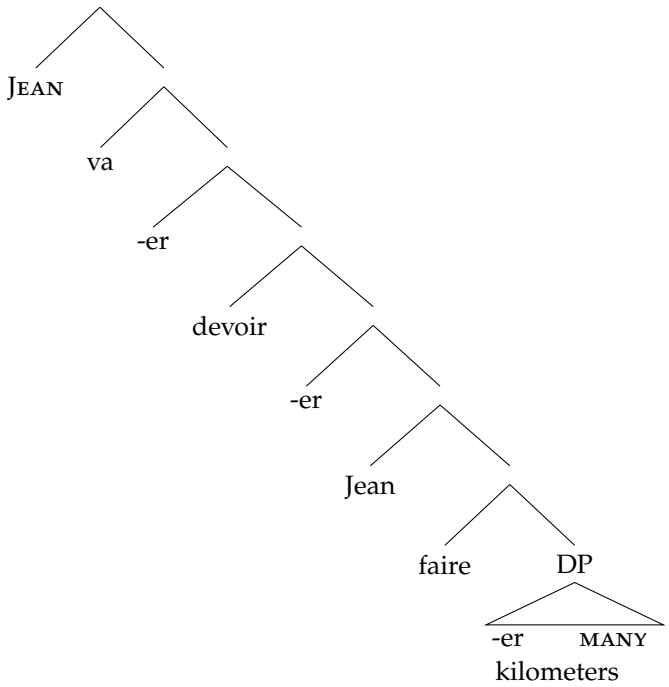
In 5 on page 25, I used Heim (2001)'s theory of comparatives, in which the whole DegP raises, and then the *than*-clause obligatorily extraposes to the right. In this section I give a more fleshed out analysis of the movement of the CAD operators that I have been arguing for. I illustrate how to derive scope ambiguities using modal constructions as examples. Given a modal and a CAD operator, 4 word order/scope combinations are predicted.

Scope | Word order	CAD-MODAL	MODAL-CAD
CAD » MODAL	a	b
MODAL » CAD	c	d

Whereas I have used traces in the tree markers up to now, I show how the syntax and the semantics of nominal comparatives can be derived using the copy theory of movement. I use the minimalist T-model of grammar. The comparative theory I use is borrowed from Hackl (2001) and Wellwood, Hacquard, and Pancheva (2012) for the semantics of the compared DP, and from Bhatt and Pancheva (2004) for the semantics of the degree clause.

First the structure is built until the numeration is exhausted and the structure reaches SPELL-OUT. At this point, the structure looks like (91)[35].

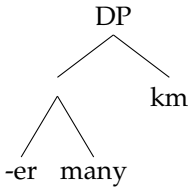
(91) Spell-out



I deliberately underspecify the structure of the compared DP, since I have not studied its structure. For now, we can assume with Hackl (2001) and Wellwood et al. (2012) that it has the structure in (92).

35. Here and further, I ignore the intermediate copies of the subject, and the verb.

(92) Assumed structure of compared DP



Hackl (2001) assume that comparative quantifiers decompose into a measure function (MUCH or MANY) and a comparative quantifier (-er). So CAD operators *plus* 'more', *moins* 'less', ... are taken to be the realization of those two semantic units. In the structures above and below, what is copied is '-er', and the complex '-er many' is realized at PF as, say, *moins* in the position where a copy of '-er' is.

(93) a. The measure function: $[\![\text{MUCH}]\!] = \lambda d\lambda x.\mu(x) = d$[36]

b. The comparative quantifier: $[\![-er_{less}]\!] = \lambda Q\lambda P.max(Q) < max(P)$

The structure is sent to LF and one copy of *moins* is interpreted. The degree clause is counter-cyclically merged as a sister to the lowest constituent that contains the interpreted *moins* (Bhatt and Pancheva 2004). If the degree clause were merged elsewhere, the structure would not be well-formed. For example, in (95) the highest copy is interpreted. Uninterpreted copies are converted to pronoun-like elements of type <d>. I assume that copying triggered predicate abstraction. Under the copy-theory of movement, covert movement refers to the process of interpreting a copy different from the one that is pronounced. A mismatch between what is pronounced and what is interpreted is possible. I illustrate two such cases.

7.2.1 *Canonical Comparison + covert movement above modal*

The example in (94a) with the meaning paraphrased in (94b) is an instance of CC in which the comparative quantifier has 'QR'ed' above the modal. This type of configuration is the one studied by Heim (2001) in English.

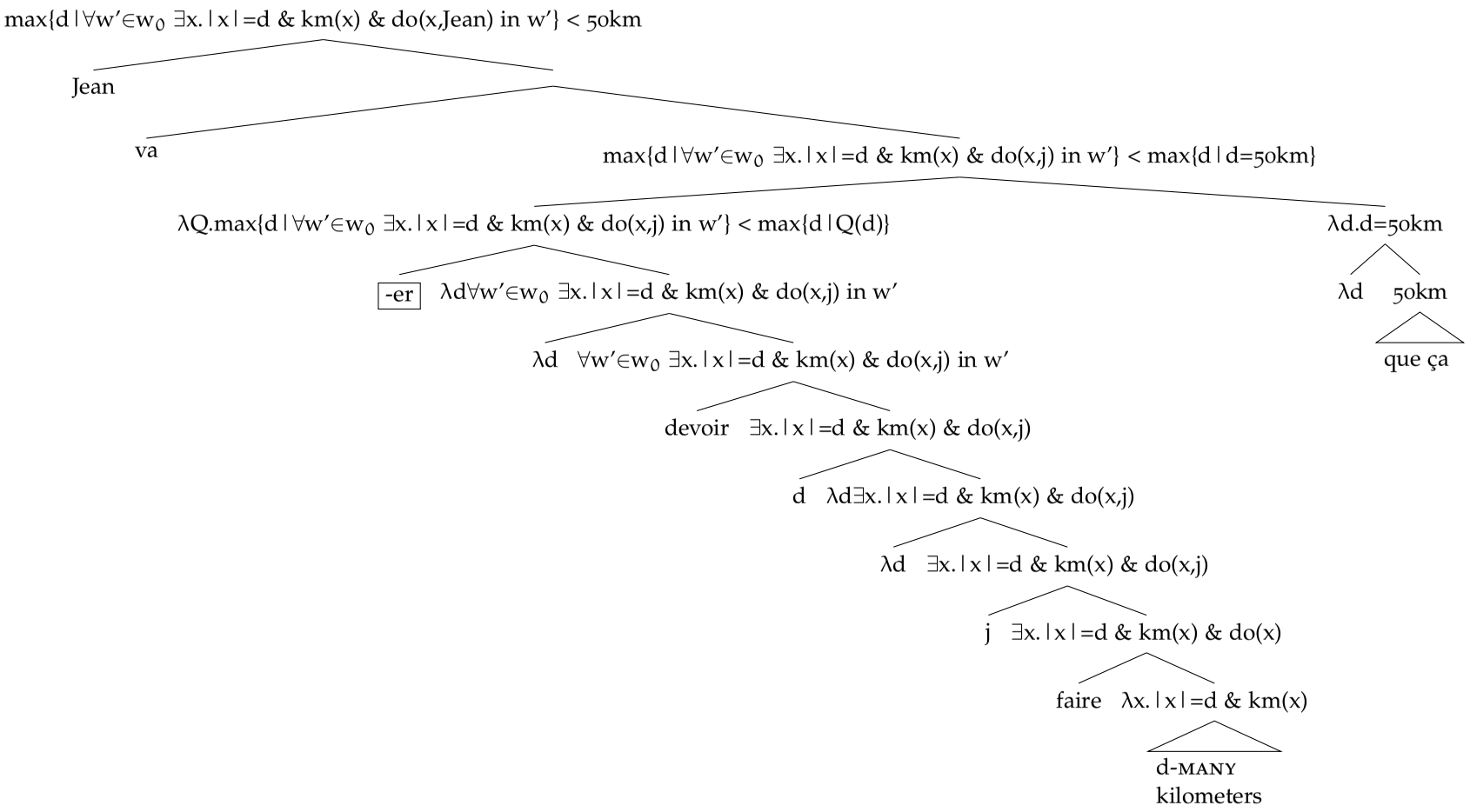
(94) a. Jean va devoir faire moins de kilomètres que ça.
Jean goes must do less de kilometers than that.
Jean will be required to drive less than that (= 50 kilometers).

b. Max{d | ∀w'∈ Acc(w) Jean will drive d-MANY km in w'} < 50 km

The spell-out (91) is sent to LF where the high copy in interpreted (95). I signal the interpreted copy in the trees below by framing it.

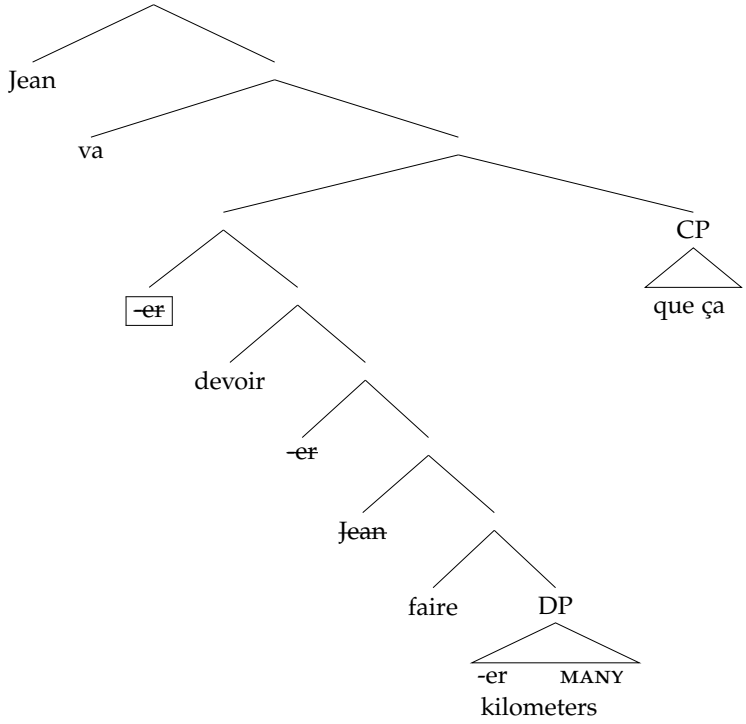
36. MANY is of the same type as MUCH but with MANY, the degree argument ranges over degrees of cardinality.

(95) LF


max{d | ∀w′∈w0 ∃x. | x | =d & km(x) & do(x,Jean) in w′} < 50km
Jean
va
max{d | ∀w′∈w0 ∃x. | x | =d & km(x) & do(x,j) in w′} < max{d | d=50km}
λQ.max{d | ∀w′∈w0 ∃x. | x | =d & km(x) & do(x,j) in w′} < max{d | Q(d)}
λd.d=50km
-er
λd∀w′∈w0 ∃x. | x | =d & km(x) & do(x,j) in w′
λd
50km
que ça
λd ∀w′∈w0 ∃x. | x | =d & km(x) & do(x,j) in w′
devoir ∃x. | x | =d & km(x) & do(x,j)
d λd∃x. | x | =d & km(x) & do(x,j)
λd ∃x. | x | =d & km(x) & do(x,j)
j ∃x. | x | =d & km(x) & do(x)
faire λx. | x | =d & km(x)
d-MANY
kilometers

Finally the whole structure is sent to PF. Only one copy is pronounced. I cross out unpronounced copies. Whichever copy of -er is pronounced is realized as the output of the rule that maps -er + MANY to its morphological exponent.

(96) PF



7.2.2 *Comparison At a Distance + reconstruction below modal*

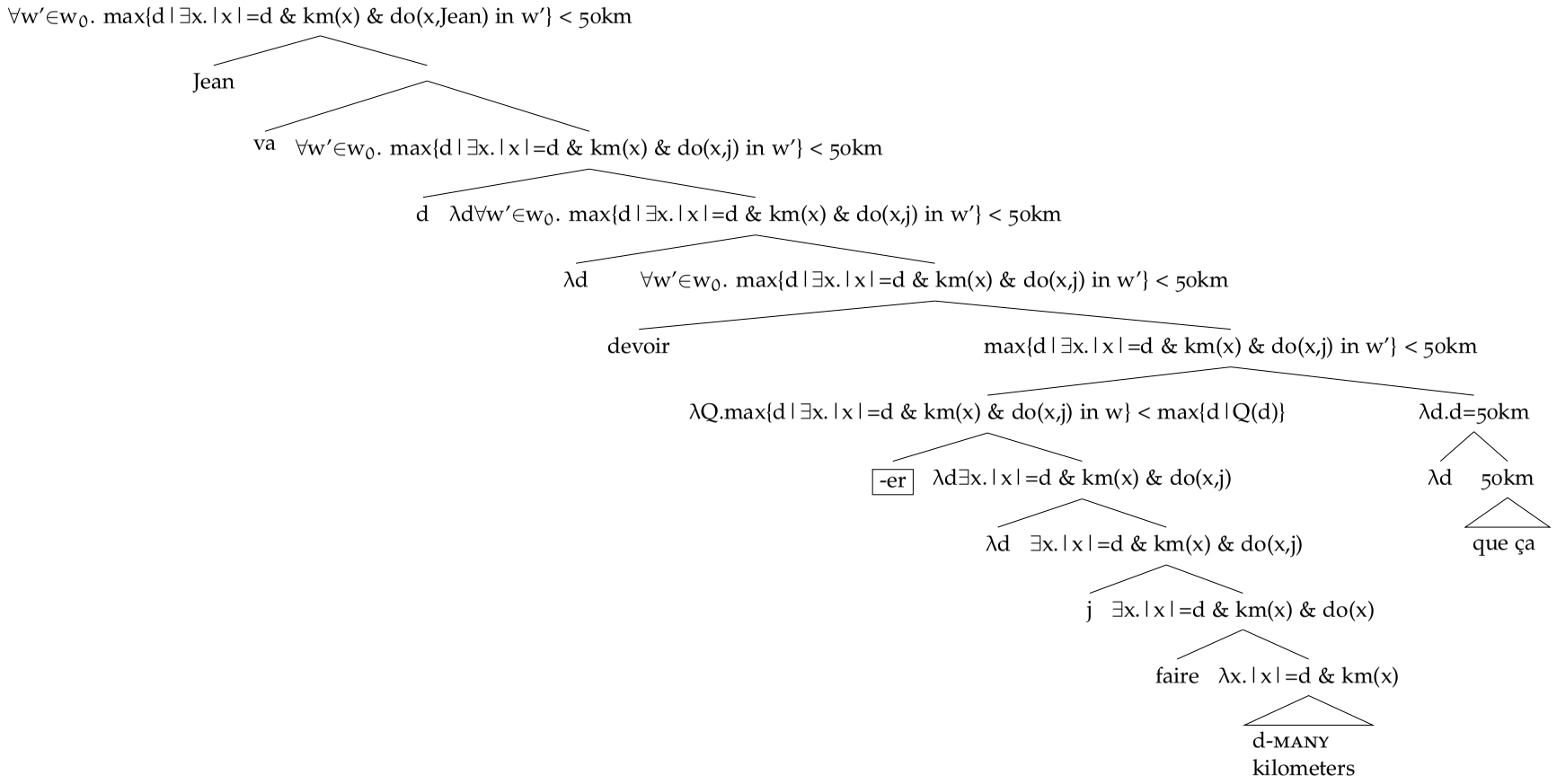
The sentence in (97a) with the truth-conditions in (97b) is a case of CAD with reconstruction of the comparative quantifier below the modal.

(97) a. Jean va moins devoir faire de kilomètres que ça.
Jean goes must less do de kilometers than that.
Jean will be required to drive less than that (= 50 kilometers).

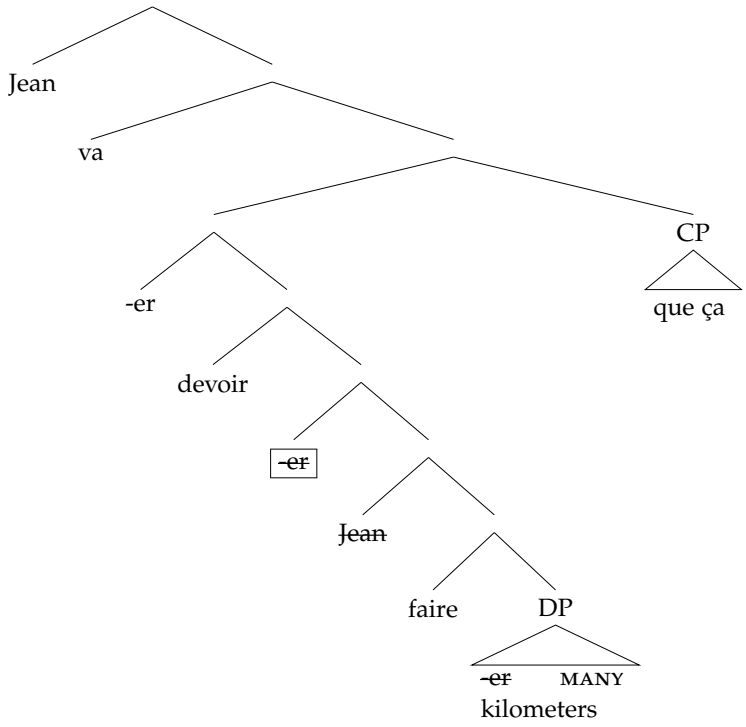
b. ∀w′∈ Acc(w). Max {d | Jean will drive d-MANY km in w′} < 50 km

The spell-out (91) is sent to LF where the lower copy of *moins* is interpreted.

(98) LF


∀w′∈w0. max{d | ∃x. | x | =d & km(x) & do(x,Jean) in w′} < 50km
Jean
va ∀w′∈w0. max{d | ∃x. | x | =d & km(x) & do(x,j) in w′} < 50km
d λd∀w′∈w0. max{d | ∃x. | x | =d & km(x) & do(x,j) in w′} < 50km
λd ∀w′∈w0. max{d | ∃x. | x | =d & km(x) & do(x,j) in w′} < 50km
devoir max{d | ∃x. | x | =d & km(x) & do(x,j) in w′} < 50km
λQ.max{d | ∃x. | x | =d & km(x) & do(x,j) in w} < max{d | Q(d)} λd.d=50km
-er λd∃x. | x | =d & km(x) & do(x,j) λd 50km
λd ∃x. | x | =d & km(x) & do(x,j) que ça
j ∃x. | x | =d & km(x) & do(x)
faire λx. | x | =d & km(x)
d-MANY
kilometers

(99) PF



In this system, the same element can be both pronounced and interpreted but does not have to, thus capturing the lack of correlation between overt and covert 'movements'[37].

8 CONCLUSION

In this paper, I have presented three arguments in favor of analyzing Comparison At a Distance constructions in terms of movement of the comparative quantifier. First I have shown that CAD exhibits some locality restrictions as well as intervention effects that are typical of A and Ā movement. CAD operators cannot extract out of tensed clauses or extraction islands, and in the cases where they can normally extract (causative, raising, control constructions), their movement can be blocked by intervening phrases such as DP's or adjuncts. Secondly, I have presented scope ambiguity facts that can only be derived under a movement analysis. Finally, I have shown that the same restrictions on the movement of CAD operators hold of the movement of *tout/rien*, suggesting that CAD operators undergo the same movement as *tout/rien*. I have proposed a theory in which CAD is the realization of DegP movement.

Further research could try to see the extent to which the arguments I have presented extend to QAD since QAD is subject to the exact same locality restrictions as CAD (A on page 51). The main challenge in analyzing QAD as movement is explaining how a quantifier base-generated in a tripartite structure can move to land in an essentially bipartite structure (i.e. Q (argument)). Solving this challenge might shed light on a new type of quantification.

37. Given that the same copies are available for pronouncing and interpreting, the fact that in structures like (88) where a copy can be interpreted out of a PP but not pronounced, has to be considered a restriction on the kinds of copies that PF can realize.

But another way to solve the challenge might be to reject the premise on which it is built: the assumption that the phrase *beaucoup de gens* 'many people' has the same structure as its English equivalent. In fact Kayne (2002; 2008) makes a proposal in this direction by positing that the phrase *beaucoup de gens* has the structure [[beaucoup NUMBER] de livres], where NUMBER is a silent noun.

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Appendices

A LOCALITY RESTRICTIONS WITH *beaucoup*

A.1 The argument / adjunct assymetry

The quantifier *beaucoup* 'many' can quantify into an argument DP (subject or object) as long as it is postverbal.

(100) Postverbal subject via object topicalization and subject inversion

a. *Beaucoup de gens* ont soutenu ces projets.
Many de people have supported these projects
Many people have supported these projects.

b. Ce sont des projets qu' ont soutenus *beaucoup de gens*.
These are some projects that have supported many de people
Many people have supported these projects.

c. Ce sont des projets qu' ont *beaucoup* soutenus *de gens*.

(101) Subject of unaccusative verb.

a. *Beaucoup de boulangers* sont venus.
Many de bakers are come
Many bakers came.

b. Il est venu *beaucoup de boulangers*.

c. Il est *beaucoup* venu *de boulangers*.

(102) Locative inversion.

a. *Beaucoup de villageois* ont dancé sous ces halles.
Many de villagers have danced under those covered area
Many villagers have danced under that roof.

b. Sous ces halles ont dancé beaucoup de villageois.

c. Sous ces halles ont beaucoup dancé de villageois.

(103) Object

a. J' ai rencontré *beaucoup de gens*.
I have met many de people
I have met many people.

b. J'ai *beaucoup* rencontré *de gens*.

A.2 Coordinate-structure island

A.2.1 *Across-the-Board movement*

The degree operators that do not introduce a consecutive clause (104) may quantify into a coordinate structure as long as it occurs equally out of both conjuncts.

(104) Coordinated DP's

a. J' ai donné beaucoup [de temps et d' argent] à Marie.
I' ve given much de time and de money to Mary
I' ve given much time and money to Marie.

b. J' ai beaucoup donné [de temps et d' argent] à Marie.

(105) Coordinated VP's

a. J' ai donné beaucoup de livres à Sam et emprunté
I have given many de books to Sam and borrowed
beaucoup de magazines à Bill.
many de magazines to Bill
I've givem many books to Sam and borrowed many magazines from Bill.

b. J' ai beaucoup donné de livres à Sam et emprunté de magazines à Bill.

A.2.2 *non-Across-the-Board movement*

The unacceptability of (106b) parallels what happens in wh-questions over coordinate structures.

(106) Coordinated DP's: impossibility of asymetric extraction

a. J' ai donné [*beaucoup* de temps et *beaucoup* d' argent] à
I' ve given much de time and much de money to
Marie
Marie
I've given much time and much money to Mary.

b. *J' ai beaucoup donné de temps . . . et beaucoup d' argent à Marie.

A.3 Inverted constituents

Valois (1991) notes that the *beaucoup-de* dependency can't hold across inverted constituents in small clauses. When the operator is in CQ, the subject and the predicate can appear in any order (107ab). However in preverbal position, the subject can only be to the left of the predicate (107c) and not after it (107d).

(107) Context: Joseph is a retired professor. He's speaking with his friends who are asking him whether it was not too boring to teach introductory classes.

a. J' ai considéré beaucoup d' étudiants intelligents.
I have considered many de students intelligent
I've considered many students intelligent.

b. J'ai considéré intelligents beaucoup d'étudiants.

c. J'ai beaucoup considéré d'étudiants intelligents.

d. *J'ai beaucoup considéré intelligents d'étudiants.

If the predicate is a verb as in (108), inversion is possible whether the verb is unaccusative or unergative.

(108) a. J' ai beaucoup vu d' étudiants partir.
I have many seen de students leave
I've seen many students go.

b. J' ai beaucoup vu partir d' étudiants.

c. J' ai beaucoup vu d' étudiants rire.
I have many seen de students laugh
I've seen many students laugh.

d. J' ai beaucoup vu rire d' étudiants.

A.4 Causatives

Interestingly QAD is possible from the position before the causativizers *faire* (109c) and *laisser* (110c).

(109) *faire* causatives

a. Je vais faire tailler *beaucoup* d' arbres à mon jardinier.
I go make prune many de trees to my gardener
I'm going to make my gardener prune a lot of trees.

b. Je vais faire *beaucoup* tailler d'arbres à mon jardinier.

c. Je vais *beaucoup* faire tailler d'arbres à mon jardinier.

(110) *laisser* causatives

a. Je vais laisser tailler *beaucoup* d' arbres à mon jardinier.
I go let prune many de trees to my gardener
I'm going to let my gardener prune a lot of trees.

b. Je vais laisser *beaucoup* tailler d'arbres à mon jardinier.

c. Je vais *beaucoup* laisser tailler d'arbres à mon jardinier.

A.5 Raising constructions

(111) *Paraître* 'appear'

a. Jean a pourtant paru arroser *beaucoup* de fleurs.
Jean has yet seemed water many de flowers
Yet, Jean seemed to have watered many flowers.

b. Jean a pourtant paru *beaucoup* arroser de fleurs.

c. Jean a pourtant *beaucoup* paru arroser de fleurs.

(112) *Sembler* 'seem'

a. Il m' a semblé lire *beaucoup* de romans d' aventures.
He 1SG.DAT has seemed read many de novels of adventures
It seemed to me I read many adventure novels.

b. Il m' a semblé *beaucoup* lire de romans d' aventures.

c. Il m' a *beaucoup* semblé lire de romans d' aventures.

Example (113) shows that the QAD operator *beaucoup* 'a lot' can quantify into the object *légumes* 'vegetables' from the matrix clause headed by the modal *devoir* 'must'.

(113) a. Je vais beaucoup devoir manger de légumes.
I will much must eat de vegetables
I'm going to have to eat a lot of vegetables.

b. *Je vais [devoir manger de légumes].

The following construction with *laisser* 'let' is very similar to the causative construction presented in A.4 on the previous page except that the causer appears directly to the right of *laisser* and receives accusative case. In (114a), *mon jardinier* 'my gardener' receives accusative case as evidenced by argument cliticization (114b).

(114) a. Je vais laisser mon jardinier tailler *beaucoup* d' arbres.
I go let my gardener prune many de trees
I'm going to let my gardener prune a lot of trees.

b. Je vais le laisser les tailler.
I go 3SG.ACC let 3PL.ACC prune
I'm going to let my gardener prune them.

QAD is not possible if the operator is placed before *laisser* 'let', supposedly because of the intervening DP.

(115) a. Je vais laisser mes enfants lire *beaucoup* de livres.
I go let my children read many de books
I'm going to let my children read a lot of books.

b. Je vais laisser mes enfants *beaucoup* lire de livres.

c. *Je vais *beaucoup* laisser mes enfants lire de livres.

(116) a. Je vais laisser les élèves laver *peu* de voitures.
I go let the pupils wash few de cars
I'll let the pupils wash few cars.

b. Je vais laisser les élèves *peu* laver de voitures.

c. *Je vais *peu* laisser les élèves laver de voitures.

A.6 Control constructions

Control verbs like *essayer de* 'try to' allow QAD (46).

(117) Essayer 'try'

a. Il a essayé de lire *beaucoup* de livres.
He has tried de read much de books
He tried reading many books.

b. Il a essayé de *beaucoup* lire de livres.

c. Il a *beaucoup* essayé de lire de livres.

Furthermore, control and raising verbs can be stacked and QAD is still allowed. In (118), QAD is allowed through *sembler essayer* 'seem to try to'.

(118) Sembler essayer 'seem to try'

a. Elle m' a semblé essayer de lire *beaucoup* de livres
She 1SG.DAT has seemed try to read many de books
russes.
russian
It seemed to me that she tried to read many Russian books.

b. Elle m' a semblé essayer de *beaucoup* lire de livres russes.

c. Elle m' a semblé *beaucoup* essayer de lire de livres russes.

d. Elle m' a *beaucoup* semblé essayer de lire de livres russes.

A.7 Intervention

The data on intervention with *beaucoup* 'much' are difficult. Nevertheless, a contrast does seem to exist between constructions with non-cliticized DP's (119, 120) and constructions with clitics (121).

(119) QAD across DP *Paul*: *

a. Marie a supplié Paul d' acheter *beaucoup* de magazines.
Marie has begged Paul to buy many de magazines
Marie begged Paul to buy a lot of magazines.

b. *Marie a *beaucoup* supplié Paul d'acheter de magazines.

(120) QAD across PP *à Paul* 'to Paul': *

a. Marie a conseillé à Paul d' acheter *beaucoup* de magazines.
Marie has advised to Paul to buy many de magazines
Marie advised Paul to buy many magazines.

b. *Marie a *beaucoup* conseillé à Paul d'acheter de magazines.

(121) QAD after cliticization of DP/PP: ?

a. ?Marie l' a *beaucoup* supplié d' acheter de magazines.
Marie him has many begged to buy de magazines
Marie begged him to buy many magazines.

b. ?Marie lui a *beaucoup* conseillé d' acheter de magazines.
Marie him.DAT has many advised to buy de magazines
Marie advised Paul to buy many magazines.

(122) CAD across adverbial *à chaque fois*: ✗

a. Il m' a semblé à chaque fois avoir emprunté beaucoup
It to.me has seemed at each time have borrowed much
d' argent.
de money
Each time, it seemed to me that I borrowed a lot of money.

b. *Il m'a beaucoup semblé à chaque fois avoir emprunté d'argent.

c. A chaque fois, il m'a beaucoup semblé avoir emprunté d'argent.

(123) CAD across adverbial *hier*: ✗

a. Il m' a semblé hier avoir corrigé beaucoup de copies.
It to.me has seemed yesterday have graded many de copies
Yesterday, it seemed to me that I had graded many copies.

b. *Il m'a beaucoup semblé hier avoir corrigé de copies.

c. Hier, il m'a beaucoup semblé avoir corrigé de copies.

Table 3: Comparison of locality restrictions

	Comparative		Non-comparative	
	CC	CAD	CQ	QAD
Tensed clauses	-	✗	-	✗
Extraction islands				
Adjuncts	-	✗	-	✗
Wh-islands	-	✗	-	✗
Coordinate structure				
↪ *extraction out of both deP conjuncts*	✓	✓	✓	✓
↪ *extraction out of one deP conjunct*	✗	✗	✗	✗
Infinitival constructions				
Causatives	-	✓	-	✓
Raising				
↪ *to subject*	-	✓	-	✓
↪ *to object*	-	✓	-	✓
Control				
↪ *subject*	-	✓	-	✓
↪ *object*	-	✓	-	✓
Intervention				
DP	-	✗	-	✗
PP	-	✗	-	✗
Cliticization improve acceptability?	-	✓	-	✓
Adverbial	-	✗	-	✗

- means that the test is not applicable

B PREDICTIONS MADE BY EXISTING ACCOUNTS OF QAD

In this section, I try extending Burnett (2009)'s base-generation account of QAD to CAD[38], and I show that it does not make the right predictions[39].

Burnett gives an account of QAD in Standard European French (SF) and Québec French (QF). As she notes herself, those names are used for their convenience only since it is not clear that there is a one-to-one relation between a given variety of the QAD construction and a given dialect of French (where the dialect is either SF or QF)[40].

38. There are other 'adverbial' accounts of QAD and I do not review them because Burnett (2009; 2012) already gives a very good overview and her account ends up cashing out insights from those previous accounts making it compatible with them.
39. This is my extension of Burnett's account. She is not responsible for it.
40. 'It must be noted that, in this thesis, I use the term *Standard European French* to refer not to a dialect that is geographically based, but rather to the/a dialect of French that displays the semantic pattern that will be described below. I call this the *Standard European* pattern, since it is the pattern that has been observed and analyzed in previous work on QAD, all

Burnett's account is an 'adverbial' account: she considers that a degree quantifier such as *beaucoup* 'many' is base-generated where it is pronounced. Her account has the merit of giving a compositional semantics that is compatible with most of the proposals that have been made in the literature on QAD (Obenauer 1994; Doetjes 1997; Heyd 2003). I develop an account of CAD from her analysis of QAD in SF and look at the predictions that this new account makes. Her analysis of canonical quantification (CQ) in both dialects is the same.

Burnett assumes that adverbial *beaucoup* 'many' in SF (124) takes a set of <event, object> pairs and yields true just in case the cardinality of the set of first coordinates is a lot according to the context, and the cardinality of the set of second coordinates is also a lot[41].

(124) $[\![\text{beaucoup}_{Adv}]\!]$=the function BCP^{SF}, defined as follows: Let s, t $\in \mathbb{N}$ such that $0<s_e$, $t_x<|E|$, For all $R\in \mathcal{P}(E^e \times E^x)$, $BCP^{SF}_{s,t}(R)=1$ iff $|Dom(R)|>s_e$ & $|Ran(R)|>t_x$

Burnett assumes that *de*-NP's denote bare properties following (Heyd and Mathieu 2005). In her system, the verb and the *de*-NP combine without existentially closing the direct object via a modified version of Chung and Ladusaw (2004)'s *Restrict* compositional rule, which she calls *Restrict'* (125).

(125) **Restrict'**
For any nodes β and γ such that, β dominates a lexical item whose interpretation is P, and γ dominates a lexical item whose interpretation is Q, $[\![\beta]\!] = \{<v_1,v_2...v_n>: P(v_n,v_{n-1}...v_1)\}$ and $[\![\gamma]\!] = \{v_k : Q(v_k)\}$, then $[\![Merge(\beta,\gamma)]\!] = \{<v_2,v_3...v_n, v_1>: P(v_n,v_{n-1}...v_1)$ & $Q(v_1)\}$

In figure 3 on the following page, I have copied the derivation of the QAD sentence as Burnett gives it. The verb and the object combine via *Restrict'*. Then the VP and the subject combine via *Functional Application*. Finally, *beaucoup* combines with the whole sentence.

of which were carried out by well-educated Europeans. However, it has been brought to my attention that the judgments reported [for so-called *Standard European French*] are not shared by all European French speakers; for some, the pattern described [for so-called *Québec French*] is a more accurate description of their dialect.' (Burnett 2009, p. 18)

41. $|Dom(R)|$ gives the cardinality of the set of events, E^e, and s_e is the contextually-defined threshold, such that if $|E^e|>s_e$, and s_e is at least equal to 1, then it is true that there are many events of the predicate denote by R. Likewise $|Ran(R)|$ gives the cardinality of the set of individuals, E^x, and t_x is the contextually-defined threshold, which is at least equal to 1, such that if $|E^x|>t_x$, then it is true that there are many individuals involved in the relation R. Note that the 'a lot' component that is understood to be expressed by *beaucoup* 'many' is not encoded in its denotation. All the denotation of *beaucoup* says is that the contextually-defined thresholds have to be at least 1, and so there must be at least 2 events of R and 2 objects satisfying R. I assume that the 'a lot' requirement is supplied by context which gives their values to the thresholds.

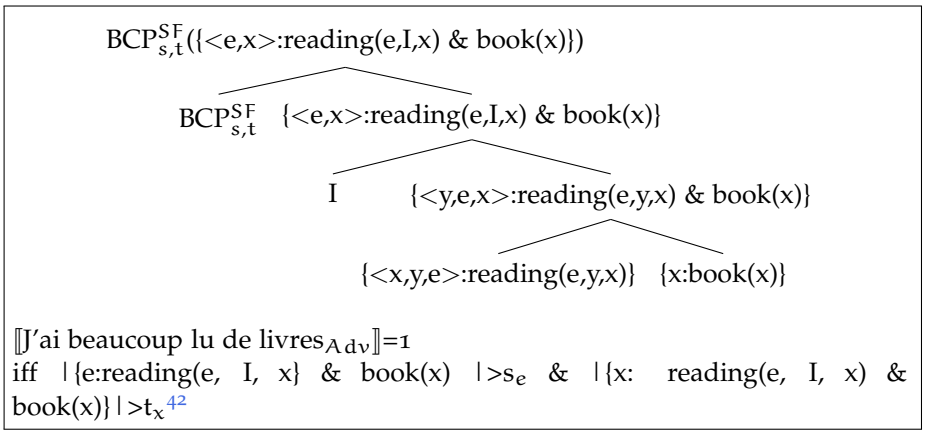

Figure 3: Burnett's compositional semantics for QAD in SF

J'ai beaucoup lu de livres is true just in case there were many events of me book-reading, and I read many books. Or, to paraphrase Burnett, the sentence is true just in case there were more events than a contextually-defined threshold, s_e, and the number of books I read was greater than a contextually-defined threshold, t_x. If those conditions are not met, the sentence will come out false.

I now turn to extending Burnett's theory to comparative quantifiers. As we have just seen, in Burnett's theory, *beaucoup* 'many' is defined as the 'greater than' relation with respect to two contextually-defined thresholds / quantities: s_e and t_x.

(126) Henri a plus prêté de livres à Louis qu' à Charles.
Henri has more lent de books to Louis than to Charles.

In a comparative construction, those thresholds are explicitly supplied by the standard of comparison. Using Burnett's system, the nominal comparative (126) says that:

- the number of books lent by Henri to Louis > t_x (= the number of books lent by Henri to Charles) and,
- the number of events of lending books by Henri to Louis > s_e (= the number of events of lending books by Henri to Charles)

I have copied the predicted truth-conditions in (figure 4).

⟦Henri a plus prêté de livres à Louis qu' à Charles.$_{Adv}$⟧=1
iff |{e: ∃x end(e, Henri, x, Louis} & book(x)| > |{e: ∃x lend(e, Henri, x, Charles} & book(x)| &
|{x: ∃e lend(e, Henri, x, Louis} & book(x)| > |{x: ∃e lend(e, Henri, x, Charles} & book(x)|

Figure 4: Predicted truth-conditions for CAD

The extension of Burnett's analysis of QAD in SF makes the following wrong predictions for CAD:

42. It seems to me that this formula is not well-formed: some variables are not bound.

1. In comparative constructions my extension of Burnett's semantics for EF predicts that in QAD comparative constructions, it is not enough to satisfy the multiplicity of events requirement by there being more than one event: there has to be a comparison of the number of events as well as a comparison of the number of individuals. As discussed in 2 on page 4, this prediction is not borne out. This prediction is not problematic for Burnett since it could be that the dialect I have described here is QF, in which case there is no quantification over events (*see* B.1).
2. As it is my extension of Burnett's system predicts the CAD is only possible from the direct object position. As I have shown in 3.2.2.1 on page 15, I contend that QAD is possible from any postverbal nuclear argument of the verb (i.e. subject or object). This may not be an insurmountable problem though depending on one's theory of inversion.
3. The account as it is also predicts that CAD is not possible across clause boundaries. This prediction is especially problematic for raising and control constructions. Since Burnett's system and its extension is such that *de*-phrases give rise to a structure in which the verb still has an open argument after all of its lexical arguments have been added, embedding verbs will not be able to compose with that structure. One could imagine losening to allow percolation across clauses but then we would have an overgeneration problem not giving us the right locality restrictions.
4. This account predicts that the CAD quantifiers are interpreted in the position where they are pronounced. This is clearly not the case as was shown in 5 on page 25.
5. Finally, Burnett has shown that the interpretation of QAD varies to some extent: in EF, the quantifier quantifies over both events and objects, while in QF it quantifies over objects only. This account predicts that there should be dialects in which QAD quantifies over events only. To my knowledge, there are no such dialects.

As discussed above, predictions 1, 2, and 3 may not be insurmountable for an adverbial analysis, however it is not clear how it would deal with predictions 4 and 5. All in all, it seems that a base-generation analysis needs a lot more complexity to deal with those predictions than a movement analysis does.

B.1 Extending *Québec French* account

According to Burnett, Québec French does not have a multiplicity of events requirement in QAD constructions. QAD operators in *Québec French* have the same truth-conditions as CQ operators that have no quantification over events. There are two ways to cash this out: either use a binary quantifier that takes a pair <e,x> and close off the event variable, or two unary quantifiers[43]: existential quantification to close off the event argument and BCP^1. In what follows, I use the latter option since it is the one that Burnett ends up choosing.

43. Burnett provides a proof that the binary quantifier is reducible to the iteration of two unary quantifiers.

(127) **Definition of *beaucoup*** (used in CQ and QAD in QF)
⟦beaucoup⟧ = the function BCP^{QF}, defined as follows: Let $s \in \mathbb{N}$ such that $o < s < |E|$. For all $P \in \mathcal{P}(E)$, $BCP^{QF}_s(P)=1$ iff $|P|>s$

In figure 5, I have copied the derivation of the QAD sentence as Burnett gives it. The verb and the object combine via *Restrict'*. Then the VP and the subject combine via *Functional Application* and the event argument gets existentially closed. Finally, *beaucoup* combines with the whole sentence.

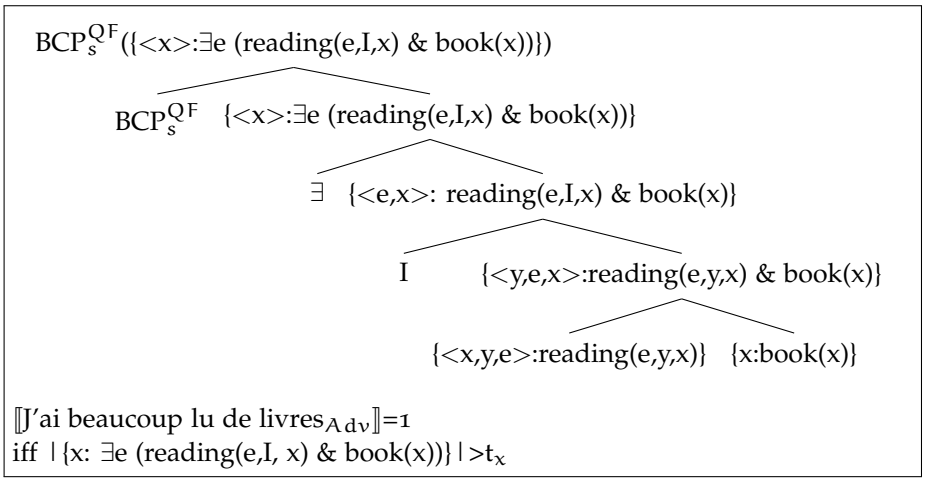

Figure 5: Burnett's compositional semantics for QAD in QF

In Québec French, *J'ai beaucoup lu de livres* is thus true just in case the number of books I read was greater than a contextually-defined threshold, t_x.

Extending this account to account for the semantics of nominal comparatives such as (128) as we did above yields the predicted truth-conditions in figure 6 .

(128) Henri a plus prêté de livres à Louis qu' à Charles.
Henri has more lent de books to Louis than to Charles.

⟦Henri a plus prêté de livres à Louis qu' à Charles.$_{Adv}$⟧=1
iff |{x: ∃e (lend(e, Henri, x, Louis) & book(x))}| > |{x: ∃e (lend(e, Henri, x, Charles) & book(x))}|

Figure 6: Burnett's predicted truth-conditions for CAD

Thus, extending Québec French QAD account to CAD gets rid of (wrong) prediction number 1. However predictions 2, 3, 4 and 5 remain problematic.

C QUESTIONNAIRE

The aim of this questionnaire was to test the availability of the readings corresponding to the two scope relations: devoir»moins and moins»devoir, in CQ, where the linear order is [devoir-moins], and QAD, where the linear order is [moins-devoir]. Specifically, I was interested in knowing whether the reading corresponding to devoir»moins was available when the linear order was [moins-devoir].

In order to see whether the moins»devoir reading is available, I judged truth-value judgments. In order to see if the devoir » moins scope is available, a more complicated task had to be used: a falsity judgment task.

Task 1: Truth-value judgments

> *Pour chaque paire d'un contexte et d'une phrase, il faut donner un jugement de vérité: "vrai" si la phrase peut être utilisée véridiquement dans le contexte ou "faux". En plus, pour chaque réponse, vous pouvez donner un indice de confiance allant de 1 à 4; 1 signifiant que vous n'êtes pas sûr du tout de la réponse et 4 signifiant que vous êtes absolument certain de la réponse que vous avez donnée.*
> [For each context/sentence pair, please give a truth-value judgment: 'true' if the sentence can be used truthfully in the given contexte or 'false'. Moreover, for each judgment, you may give a confidence value on a scale from 1 to 4: 1 meaning that you are not sure at all about your judgment, 4 meaning that you are absolutely confident about your judgment.]

(129) Contexte C: Un enseignant raconte l'anecdote suivante à des parents d'élèves : l'année dernière, certains enfants du collège ont envoyé jusqu'à 50 lettres de candidature pour trouver un stage. Évidemment, les enfants peuvent en envoyer autant voire plus mais il n'est pas non plus nécessaire d'en envoyer tant.

a. Vos enfants vont moins devoir envoyer de lettres que ça (50 lettres).

b. Vos enfants vont devoir envoyer moins de lettres que ça (50 lettres).

(130) Contexte E: D'habitude, je suis obligé d'aller voir le directeur au moins 2 fois par semaine mais je ne suis pas autorisé à aller le voir plus de 5 fois par semaine. Cette semaine, je ne suis obligé d'aller le voir qu'1 fois.

a. Je vais moins devoir aller voir le directeur que ça (2 fois).

b. Je vais devoir aller moins voir le directeur que ça (2 fois).

Task 2: **Falsity judgment task.**

> *Pour chaque dialogue (1 et 2), indiquez s'ils sont cohérents.*
> [For each dialogue (a. and b.), say if it is coherent.]

In what follows, subjects were asked to judge whether a dialogue between two speakers was coherent. The scenarios set up the minimality reading while making the maximality reading false. Speaker A utters the test sentence. Speaker B reacts to A's utterance by denying the stronger maximality reading. For the dialogue to be coherent, it has to be the case that A's utterance has the maximality reading, otherwise B's denying it would not be coherent.

(131) Contexte F: D'habitude, Damien est obligé d'aller voir le directeur au moins 2 fois par semaine mais il n'a pas le droit d'y aller plus de 7 fois. Cette semaine, il n'est obligé d'aller le voir qu'1 fois au minimum.

a. Speaker 1: "Damien va moins devoir aller voir le directeur que ça (2 fois).
Speaker 2: — Mais c'est faux voyons ! Au contraire ... il peut y aller tous les jours si il veut."

b. Speaker 1: "Damien va devoir aller moins voir le directeur que ça (2 fois).
Speaker 2: — Mais c'est faux voyons ! Au contraire ... il peut y aller tous les jours si il veut."

(132) Contexte D: L'année dernière, certains enfants du collège ont envoyé jusqu'à 50 lettres de candidature pour trouver un stage. Évidemment, les enfants peuvent en envoyer autant voire plus mais il n'est pas non plus nécessaire d'en envoyer autant. Deux parents d'élèves se parlent.

a. Speaker 1: "Les enfants vont moins devoir envoyer de lettres que ça (50 lettres).
Speaker 2: — Mais c'est faux voyons ! Au contraire ... s'ils veulent, ils peuvent en envoyer à toutes les entreprises du pays."

b. Speaker 2: "Les enfants vont devoir envoyer moins de lettres que ça (50 lettres).
Speaker 2: — Mais c'est faux voyons ! Au contraire ... s'ils veulent, ils peuvent en envoyer à toutes les entreprises du pays."

Results

I report the judgments of 6 native French-speaking linguists from continental France. A '1' indicates the reading is available, and '0' that it is not.

Surface word order	**Scope**	**QAD**	**non-QAD**
devoir-moins	surface	(D) 1 1 1 1 1 1 (100 %)	(F) 1 1 1 1 1 1 (100 %)
	inverse	(C) 0 0 0 0 0 0 (0 %)	(E) 0 0 1 0 0 1 (33.33 %)
moins-devoir	surface	(C) 0 0 1 1 0 1 (50 %)	(E) 1 1 1 1 1 1 (100 %)
	inverse	(D) 1 0 1 1 1 0 (66.66 %)	(F) 0 0 1 0 0 0 (16.66 %)

Table 4: Summary of the results of the scope questionnaire.