Syntactic Economy and Quantifier Raising

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1 Introduction

In a recent unpublished paper, Bruening proposes that Quantifier Raising (QR) is subject to the economy conditions that other movement operations are also constrained by (*Attract Closest* and *Shortest Move*). Bruening's proposal is based on a study of ditransitive constructions in English that exhibit rigid scope which is summarized section 1.2 below.

One goal of this paper is to present additional evidence for Bruening's proposal. I present data from inverse linking constructions that corroborate Bruening's proposal. The second goal of the paper is to show that syntactic economy is violable if otherwise uninterpretable LF-structures arise. I show that the resulting theory of quantifier raising leads to a complete account of syntactic restrictions on the application of QR in English. The appendix sketches a possible extension of the account to negative polarity item licensing.

1.1 Syntactic Economy and Interface Economy

Fox (1995) argues just like Bruening (1999) and the present paper, that quantifier raising is subject to *Economy*. It is important to understand that two different applications of the notion *Economy* are involved. Fox shows that quantifier raising as well as other scope shifting operations are subject to *Interface Economy* in the sense of Reinhart (1995). Bruening (1999) and this paper argue that

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quantifier raising is subject to *Economy* in the sense of Chomsky (1995) which I call *Syntactic Economy* in the following.

The difference between *interface economy* and *syntactic economy* is that the former can be violated to achieve a different interpretation, while the latter cannot. To exemplify the difference consider the two pairs of examples in (1) and (2). In (1a), QR is blocked, while it's possible in (1b).

(1) a. A girl read every book and John read every book.

*[every book]$_y$ John$_x$ x read y

b. A girl read every book and a boy read every book.

[every book]$_y$ [a boy]$_x$ x read y

Fox's argument crucially relies on the assumption that *interface economy* can be violated when this brings about a new interpretation. This contrasts with *syntactic economy*. The pair in (2) from (Pesetsky 1982) shows that *syntactic economy* is not sensitive to differences in interpretation. A number of people argued that this contrast can be explained by *syntactic economy* (e.g. Kitahara 1993). Specifically, movement to the lower Spec(CP) position explains the difference: the closer *wh*-phrase to this position must move to this position as in (2a), otherwise the result is ill-formed.

(2) a. ?What subject$_1$ do you know who$_2$ to talk to t_2 about t_1?

b. *Who$_2$ do you know what subject$_1$ to talk to t_2 about t_1?

Note though, that if the *wh*-phrase moving to the lower Spec(CP) were not the closest one, a different interpretation is predicted to arise. The interpretation predicted for the ungrammatical (2b) can be paraphrased as "*Which person is such that you know what subject to talk to him about?*". This

interpretation is clearly different from that of (2a), and therefore (2b) would be predicted to be grammatical if the the economy condition involved were sensitive to differences in interpretation.

This shows that *syntactic economy* and *interface economy* are distinct. Fox (1995) shows that quantifier raising is constrained by *interface economy*. Bruening (1999) and this paper propose that quantifier raising is also constrained by *syntactic economy*.[1]

1.2 Bruening's Evidence

Bruening's (1999) first proposes that QR is subject to syntactic economy. His evidence comes from constructions in English where the scope of two quantifiers is rigid: the dative construction and a construction with the proposition *with*. I focus here on the dative construction. As (3a) (Larson 1988) shows, the second object cannot take scope over the first object.

(3) I gave a child each doll. (a $\gg$ each, *each $\gg$ a) (Bruening 1999:(2a))

Given the availability of quantifier raising, the rigidity in (3) is surprising. Moreover, there are very similar constructions that allow inverse scope: The example (3) contrasts with the *to*-variant (4). (see also section 3.2)

(4) I gave a doll to each child. (a $\gg$ each, each $\gg$ a)

The scope rigidity in (3) seems to indicate that quantifier raising of the second object is blocked. But, this is not the case as Bruening (1999) argues. The second object can take scope over the

[1]For the analysis of the examples in (1), the application of syntactic economy to QR will be shown below (xxx) to imply that QR of the object over the subject is blocked even in (b) and that it must be a different scope shifting operation inverses the scope of subject and object. I show that this entailment is correct in section **??** below. Since Fox claims that all scope shifting operations are sensitive to *interface economy*, the contrast in (1) still follows from his analysis.

subject as shown in (5a), as well as over sentential negation in (5b). This shows that the second object can take scope higher that its base position.

(5) a. A child gave me each doll. (a $\gg$ many, many $\gg$ a)

b. She didn't give me many dolls. (not $\gg$ many, many $\gg$ not)

Another test for the availability of quantifier raising is antecedent contained deletion (ACD). As (6) shows, it's possible to attach a relative clause involving antecedent contained deletion to the second object in a dative construction.

(6) I gave Kai each doll Mary did.

The possibility of ACD also argues that the second object can undergo quantifier raising: It has been shown by Sag (1976), Larson (1990), and others that ACD resolution requires the QP hosting ACD to undergo QR to take scope over the antecedent of the elided VP. (7) shows that the antecedent of the elided VP in (6) is the matrix VP headed by *gave*. Therefore, the second object with the attached relative clause must undergo quantifier raising to a position outside of the matrix VP.

(7) I $\underbrace{\text{gave Kai each doll Mary } \overbrace{\text{gave Kai } t}^{\text{elided}}}_{\text{antecedent}}$.

The data so far seem almost paradoxical: the second object can raise to a position outside of VP, but cannot take raise above the first object. As far as I can see, Bruenings approach to these facts is the only one available. He assumes that the following generalization holds: Whenever the second object undergoes QR the first object must also QR to a position higher than the second object.

Bruening points out that this generalization is corroborated by the fact in (8). Example (8) shows that even when ACD forces QR of the second object it cannot take scope over the first object.

(8) Ozzy gave someone everything that Belinda did. (some ≫ every, *every ≫ some) (Bruening 1999:(19b))

Therefore, Bruening (1999) proposes that both objects in (8) must QR targetting vP 9assuming the basic clause structure proposed in Chomsky (1995) with the subject occupying the Specifier of vP):

(9) someone everything $[_{vP}$ Ozzy gave t_{some} $t_{every}]$

The argument for syntactic economy is based on the observation that the derivation (10) must be blocked since it would give rise to inverse scope. The question is what explains that the two instances of QR have to preserve relative scope as in (9) and cannot invert it as in (10).

(10) *everything someone $[_{vP}$ Ozzy gave t_{some} $t_{every}]$

Bruening (1999) observes that the difference between (9) and (10) is very similar to superiority effects in some Slavic languages with *wh*-movement. Rudin (1988) observes that *wh*-phrases in Bulgarian must all move to the left periphery of the clause, but must maintain their base order.

(11) Bulgarian (Rudin 1988:449)

a. Koj$_i$ kogo$_j$ t_i vižda t_j?
who whom sees
'Who sees whom?'

b. *Kogo$_j$ koj$_i$ t_i vižda t_j?
whom who sees

Rudin's observation has been reduced to syntactic economy (Koizumi 1994, Mulders 1997, Richards 1997). Bruening shows that his generalization with QR can be reduced to syntactic economy in exactly the same way. (I present to the details of Bruening's analysis in section 2.4 below.) This constitutes one argument that quantifier raising is subject to syntactic economy.

1.3 Overview

The remainder of this paper has three parts. In the first part (Section 2), I argue that a rigidity effect observed with inverse linking corroborates Bruening's claim. In the second part (Section 3), I address the question why inverse scope is ever possible if QR cannot alter the hierarchical relationship of quantifiers. I argue that there are two sources of inverse scope: in some cases, reconstruction understood as PF-movement (Sauerland and Elbourne 1999) and in other cases, QR is forced for type resolution. In part three (Section 4), I argue that the approach to QR developed here accounts also for the scopal position of subject under the additional assumption that subjects that take scope below an object must undergo some short-distance QR. I conclude with a short appendix showing a possible account of negative polarity item licensing that emerges from the picture developed and seems worthwhile pursuing.

2 A Relativized Minimality Effect with Quantifier Raising

2.1 Scope Restriction in Inverse Linking

This section presents a novel argument corroborating Bruening's proposal that quantifier raising is subject to syntactic economy. What I show is that data using the inverse linking construction exhibit a restriction on quantifier raising that seems to be equivalent to a relativized minimality

effect (Rizzi 1990): movement is blocked by an intervening item of the same type as the moving item, but not by a different kind of intervening item.

Inverse Linking describes cases where one QP contains another in a prepositional argument or modifier and the more embedded QP takes wider scope (May 1977): The salient interpretation of (12a) is one where, for each of the relevant cities, a person only from that city came to the meeting. Similarly, (12b) doesn't have the pragmatically odd requirement that there be a single person representing all the cities.

(12) a. Somebody from every city came to the meeting.

b. John talked with a representative of every city.

The place where I want to argue syntactic economy is at work is a scopal restriction on inverse linking when a third quantifier is in the sentence. This restriction was first observed by Larson (1987) in unpublished work, and recently discussed by Heim and Kratzer (1998). Consider Larson's example in (13a).

(13) a. Two politicians spy on someone from every city. (Larson 1987:(7a))

b. 'For every city, there's someone such that two politicians spy on that person.' (every $\gg$ someone $\gg$ two)

c. 'There are two politicians, such that for every city the politicians spy on someone from that city.' (two $\gg$ every $\gg$ someone)

d. *'For every city, there are two politicians such that the politicians spy on someone from that city.' (every $\gg$ two $\gg$ someone)

Larson observes that of the three logically possible inversely linked construals of (13a) only two are available: The subject must take scope either below both of the quantifier of the inversely linked object QP as in (13b) or above both of them as in (13c). The construal (13d), where the subject takes scope above one but below the other of the two QPs of the inversely linked object QP, isn't available.

Larson's observation is corroborated by the structurally similar examples in (14). In (14a), the construal that for every freeway there are two engineers who repaired some exits from it is not available. (14b) is constructed such that the pragmatically most salient interpretation is the one where for every city there are two boys who are dancing with a girl from that city: Only with this interpretation could the sentence be true when couples of one boy and one girl each were dancing. In fact, though, (14b) doesn't allow this interpretation, and requires an unusual situation where two boys together were dancing with a single girl.

(14) a. Two engineers repaired some exits from every freeway in a large California city. (Larson 1987:(7b))

b. Two boys are dancing with a girl from every city.

Chris Collins (p.c.) points out a further test for the claim that no third quantifier can take scope between the two quantifiers of an inverse linking construction. The test relies on the fact that negative polarity items (NPIs) in English must be in the immediate scope of a downward entailing operator, and are not grammatical if a different quantifier intervenes between the NPI and its licenser (Linebarger 1980, 1987). Given this background, consider the facts in (15). In (15a), the negative polarity item *any* is licensed by the subject *less than three*. (15b), where a quantificational PP modifier is attached to the negative polarity item, however is degraded. This corroborates Larson's empirical claim: On the scopal construal where *every city* takes scope above the subject,

and *any souvenirs* takes scope below the subject, the NPI *any* should be licensed. Therefore, the ungrammaticality of (15b) argues that this construal isn't available.

(15) a. Less than three girls bought any souvenirs from Paris.

b. *Less than three girls bought any souvenirs from every city.

2.2 Adjunction to DP

To explain the missing reading in the inverse linking examples of the previous subsection Larson (1987) proposes that the inversely linked QP doesn't actually take scope outside of the QP that contains it, when it takes scope above this QP. Since Larson's proposal itself was stated using a semantic mechanism for scope taking, I present it here not in its original form, but using quantifier raising as the scope taking mechanism as Heim and Kratzer (1998) do. With this modification, Larson's proposal is that the inversely linked QP adjoins by quantifier raising to the higher QP in the inverse linking construction. This is exemplified in (16), where the QR *every city* is adjoined to *someone*.

(16) someone from every city

[[every city]$_x$ [someone from x]]$_{DP}$

For a different reason (see 3.1.1 below) this form of scope taking has already been proposed by May (1985) and Rooth (1985). Furthermore, Larson (1987) also follows May and Rooth in assuming that the inversely linked QP cannot raise any higher than the DP-adjoined position.

This proposal explains the facts observed in the previous section. If the host QP and the inversely linked QP always form a constituent they can only take scope above the subject together. If scope above the subject is derived by applying quantifier raising to the object in (17a), this

application of quantifier raising adjoins the entire object QP including both the inversely linked QP and the host QP.

(17) a. Two politicians are dancing with [[every city]$_i$ someone from t_i]

b. [[every city]$_i$ someone from t_i]$_j$ two pol's are dancing with t_j

Rooth (1985:115–18) points out that the interpretation of the structures created by adjunction of QPs to QPs requires type-shifting. This also holds for the semantic assumptions I rely on as Heim and Kratzer (1998) show. The reason is that the complement of a DP-adjoined Quantifier is semantically not a proposition. Heim and Kratzer (1998) also observe that this conclusion has further significant consequences for the semantics of quantifiers and binding, since for example the inversely linked QP in the structure in (16) would incorrectly be predicted not to be able to bind a pronominal variable in the matrix clause. As I point out in the next section, there are also empirical problems with the quantifying into DP proposal.

2.3 Scope over a Verb

In this section I show that inversely linked QPs can take scope separate from their host when scope relative to a scope taking verb is considered. I first introduce the tests for wide and narrow scope of a QP relative to the verb *want* and then apply them to inverse linking.

It is well known, that indefinites are good to test for narrow scope relative to an intensional verb. Example (18a) has two distinct scopal construals. On one reading, any person from Spain would satisfy John's desires: Across the imagined situations where all of John's desires are satisfied, John's meeting potentially different people, but John always meets at least one person from Spain. For this reading the indefinite *a person* must take scope below *want*, since there's no single person such that John holds the desire to meet this person specifically. The second reading holds in a

situation where there's a Spaniard such that John holds the desire to meet him. This reading arises if the indefinite *a person* takes scope above *want*.

(18) John wants to meet a person from Spain.

Recent work on the semantics of indefinites—specifically, their choice function interpretation—has argued that indefinites don't need to undergo syntactic movement to acquire wide scope (Abusch 1994, Reinhart 1997, and others). Therefore, the second reading of (18) could also arise from a syntactic representation where *a person from Spain* remains in the c-domain of *want*. Examples like (18), however, successfully argue for narrow syntactic scope of the indefinite: If the first reading is available, the indefinite *a person* must be syntactically represented in the c-domain of *want*.

Plurals, on the other hand, are a good way to test for wide scope with respect to an intensional verb. Consider (19). (19) allows an interpretation where John holds the desire to meet either of these two people from Spain, but doesn't desire to meet both of them. If we replace *meet* with *marry*, it's clear that the sentence is compatible with a situation where John holds the desire to not marry both of these two people from Spain. This shows that (19) allows an interpretation where *these two people from Spain* takes scope above *want*, and it's generally assumed that this scopal construal requires QR of *these two people* to a position above *want*.

(19) John wants to meet these two people from Spain.

The general assumption is corroborated by the contrast between (19) and (20). In a situation where John would be satisfied with only one Spaniard at the meeting, (20) cannot be true. This follows from the assumption that quantifier raising of the postcopular DP is blocked in the *there*-construction (Heim 1987).

(20) John wants there to be two people from Spain at the meeting.

Consider now example (21a), which combines the two scope tests just discussed in an inverse linking construction. (21a) shows that it's possible for the host of inverse linking, *someone*, to take scope below *want* while at the same time the inversely linked QP, *these two countries*, takes scope above *want*. This scopal construal corresponds to the paraphrase (21d). Imagine a context where Mary's personal ad says that she's looking for a Japanese or Canadian man to marry. In this context, (21d) is the only salient reading.

(21) a. Mary wanted to marry someone from these two countries.

b. #'For these two countries, there's someone that Mary wanted to marry.' (two $\gg$ someone $\gg$ want)

c. #'Mary has the following desire: For these two countries, marry someone from that country.' (want $\gg$ two $\gg$ someone)

d. 'For these two countries, Mary had the desire to marry someone from that country.' (two $\gg$ want $\gg$ someone)

The availability of the (21d) reading shows that adjunction to DP cannot be the only analysis of inverse linking. For the interpretation (21d), the LF-representation sketched in (22) must be avaible, where the inversely linked QP *these two countries* has separated from the DP hosting inverse linking.

(22) Mary$_x$ [these two countries]$_y$ t_x wanted to marry [someone from t_y]$_{DP}$

Further confirmation for the availability of long QR in inverse linking comes from the antecedent contained deletion. It's well known that Antecedent Contained Deletion (ACD) is another test for wide scope of a QP (Sag 1976, Larson 1990, and others). Consider example (23a), where

there are two possible antecedents for the elided VP. Each ellipsis resolution requires QR of the the QP with the relative clause that contains the elided VP to a position outside of the antecedent. Specifically, the resolution of the ellipsis paraphrased in (23c) requires QR of *everyone* to a position above *want* as Sag (1976) and Larson (1990) show.

(23) a. John wanted to $\overbrace{\text{meet everyone Mary did.}}^{\text{narrow antecedent}}$ $\overbrace{\qquad\qquad\qquad\qquad\qquad\qquad}^{\text{wide antecedent}}$

b. *'John wanted to meet everyone Mary met.'* (narrow resolution)

c. *'John wanted to meet everyone Mary wanted to meet.'* (wide antecedent)

Relevant for the present purposes is example (24a), where the head of the ACD-relative is an inversely linked QP. (24a) also allows two possible resolutions of the elided VP. The wide ellipsis resolution paraphrased in (24c) again requires QR of a constituent containing the relative clause to a position above *want*.

(24) a. John wanted to meet someone from every city Mary did.

b. *'John wanted to meet someone from every city Mary met someone from.'* (narrow resolution)

c. *'John wanted to meet someone from every city Mary wanted meet someone from.'* (wide resolution)

Now consider the relative scope of the indefinite *someone* and the verb *want* on the wide ellipsis resolution (24c). There are actually two interpretations of (24a) with wide ellipsis resolution—namely, those in (25). Crucially, both interpretations are actually available for (24a). The availability of the interpretation (25b), confirms that *want* can take scope between the two QPs of the inverse linking construction.

(25) a. 'For every city such that there's someone from it John wanted to meet, there's also someone from it that Mary wanted to meet.' (every ≫ someone ≫ want)

b. 'For every city such that John has the desire to meet someone from it Mary also has the desire to meet someone from it.' (every ≫ want ≫ someone)

The judgement is easier in example (26a). Because the elided VP in (26a) is introduced by the auxiliary *is* only the wide ellipsis resolution is available in this example. Furthermore, the narrow scope reading (26c) of the QP hosting inverse linking is the only pragmatically salient reading in (26a).

(26) a. Mary is planning to discover a planet in every galaxy John is.

b. #'For every galaxy such that there's a planet in it that John is planning to discover there's a planet in it that Mary is planning to discover.' (every ≫ a ≫ plan)

c. 'For every galaxy that John is planning to discover a planet in Mary is planning to discover a planet in.' (every ≫ plan ≫ a)

This result shows that Larson's generalization must distinguish between other QPs and scope taking verbs such as *want*. The former, but not the latter are blocked from taking scope between the two QPs of an inverse linking construction. This new generalization no longer can be accounted for by the claim that inversely linked QP cannot raise out of its host QP.

2.4 Relativized Minimality

The contrast between intervening QPs and intervening verbs with respect to Larson's generalization is reminiscent of a relativized minimality effect: The abstract structures in (27) summarize the discussion of the preceeding three subsections. Larson's (1990) original observation shows that the

inversely linked QP_1 cannot raise over the subject QP_3 as sketched in (27a). The previous subsection showed that the inversely linked QP_1 can raise to a position above a scope taking verb: (27b).

(27) a. *QP_1 QP_3 t_1 [QP_2 of t_1]

b. QP_1 VERB t_1 [QP_2 of t_1]

Two typical relativized minimality effects (Rizzi 1990) are shown in (28) and (29). Characteristic is that movement is blocked across a phrase that is alike to the moving phrase, while movement is possible across a phrase in the same position that is different. In (28a), for example, movement of the *wh*-phrase *what* is blocked because another *wh*-phrase (*who*) intervenes. In (28b), on the other hand, movement is possible. Similarly, movement of a DP to the subject position is blocked in (28a), where another DP that could move to the subject position intervenes. Movement in (29b), however, is possible (McGinnis 1998).

(28) a. ??What did who read t?

b. What did John read t?

(29) a. *A book was given John t.

b. John was given t a book.

The difference in (27) is exactly parallel to the differences in (28) and (29): Quantifier Raising is blocked across another QP, while it's possible across a scope taking verb. Therefore, I propose that the explanation of the two phenomena should be same.

The theoretical explanation of relativized minimality effects has been much debated since Rizzi's discovery of their systematic nature. For concreteness, I adopt Chomsky's (1995) explanation of *Relativized Minimality* in terms of the *Shortest Attract* condition in (30).

(30) A requirement F′ attracts the closest feature F that satisfies F′.

The explanation of relativized minimality effects in terms of (30) requires that the movement requires the assumption that the movements involves are related to the attraction of a feature the moving items bears. Specifically, it assumes that that *wh*-movement in (28) relies on attraction of a *wh*-feature and that DP-movement in (29) relies on attraction of a D-feature. And, for the explanation of relativized minimality effects with QR, it assumes that QR is also involves attraction of a feature. This feature, I call the quantificational feature or, shorter, Q-feature in the following.

The three relativized minimality facts presented here follow now from condition (30). In all three cases, the movement relies on the checking of a specific feature F. In the bad examples (27a), (28a), and (29a)), another phrase bearing the feature F is closer to the landing site of movement than the phrase that actually moves. This violates condition (30) since it's not the closest instance of the feature F that is attracted. In the good examples (27b), (28b) and (29b), on the other hand, no other phrase bearing the relevant feature F intervenes between the landing site of movement and the moving phrase and therefore condition (30) isn't violated. This explanation of Larson's generalization then argues that quantifier raising is subject to the syntactic economy condition (30).

The result reached on the basis of the inverse linking facts in this section is exactly the same as that reached by Bruening with independent evidence. Recall from the section 1.2 that Bruening argues that the two objects can both QR to adjoin to vP, but cannot switch their hierarchical relationship: (31a) (=(9)) is a possible derivation, while (31b) (=(10)) is blocked.

(31) a. someone everything $[_{vP}$ Ozzy gave t_{some} $t_{every}]$

b. *everything someone $[_{vP}$ Ozzy gave t_{some} $t_{every}]$

As mentioned above, Bruening explains (31) by adopting an explanation of a similar observation with slavic *wh*-movement. This explanation is due to Mulders (1997) and Richards (1997) and I present here Richards's (1997) version, where the two explanations differ. The explanation assumes two syntactic economy conditions: the *Shortest Attract* condition (30), and the Shortest Move condition, which requires that the distance between origin and landing site of movement must be minimal.

From these two conditions it follows that multiple movements of the same type targetting multiple specifiers of the same projection must lead to crossing paths as in (31a). I show now how Bruening applies this to QR. This application requires us to assume that QR also targets specifier positions rather than adjoined positions. Consider now the case of multiple QR into two specifier positions of *v*P. The derivation leading to crossing paths in (31a) is sketched in (32). In this derivation, the two specifier positions are filled from the outside in—something Mulders (1997) and Richards (1997) assume to be possible—, but crucially neither of the two economy conditions is violated.

(32) a. $v_{Q'}$ ... someone everything

b. someone $v_{Q'}$ ... $t_{someone}$ everything

c. someone everything $v_{Q'}$ ... $t_{someone}$ $t_{everything}$

To see that nested paths are indeed blocked by economy, consider the two derivations in (33) and (34). (33) shows that movement of *everyone* to the initial position is blocked by the shortest move condition since the movement path in (32c) is shorter than that in (33c).

(33) a. $v_{Q'}$ ... someone everything

b. someone $v_{Q'}$ ... $t_{someone}$ everything

c. *everyone $v_{Q'}$ ... $t_{someone}$ $t_{everyone}$

A derivation where movement of *everyone* precedes movement of *someone* is shown in (34). This derivation would result in inverse scope, but is blocked because step (34b) violates the shortest attract condition—the Q-feature of *someone* is closer than *everyone* and can satisfy the Q'-requirement of v.

(34) a. $v_{Q'}$ ... someone everything

b. *everything $v_{Q'}$ ... someone $t_{everything}$

c. everything someone $v_{Q'}$ ... $t_{someone}$ $t_{everything}$

3 Inverse Scope

Bruening's evidence and the evidence in the preceeding section have established that one QP cannot move by QR to take scope over another QP. Prima facie, this seems to predict that two QPs in English should only be able to take scope in their surface order. It's well known that this isn't the case. There are several cases where in English the scopal relation of two QPs can be the inverse of their surface c-command relationship. In this section and the next, I address these cases of inverse scope.[2] I claim that there are two ways inverse scope of two QPs can be achieved in English: The first are cases where QR doesn't apply optionally, but is actually forced to apply to make a structure interpretable. Secondly, reconstruction allows a QP to take scope below a QP that has moved across

[2]Bruening also makes interesting proposals as to how inverse scope is possible in the cases exemplified by (35a) and (35b) below. I don't discuss them in this paper since Bruening's work is still in progress.

its trace. I show that this account for the cases of inverse scope attested, while it doesn't affect the explanation of Bruenings cases and those in the previous section.

The three cases of inverse scope between two QPs I consider are illustrated in (35). (35a) illustrates that objects and other VP-internal QPs can take scope over the subject in English. This actually is the most difficult case of inverse scope on my account, and I'll address it in the next section. The second case, are cases where the goal-object can take scope over the first object as shown in (35b) (repeated from (4)). The third case is inverse linking as shown in (35c). In inverse linking, the embedded QP takes scope over the embedding QP. In this section, I address the latter two cases of inverse scope. The case of scope over the subject is the most difficult and I address in the next section.

(35) a. A policeman is standing in front of every bank. (a $\gg$ every, every $\gg$ a)

b. I gave a doll to each child. (a $\gg$ each, each $\gg$ a)

c. Mary met one representative from every country. (every $\gg$ one)

3.1 Obligatory QR: Inverse Linking

The first question to ask for all three examples in (35) is whether QR for inverse scope from the surface order actually violates syntactic economy. It's clear that in (35a) and (35b) QR of the second QP over the first would violate syntactic economy analogous to a superiority violation. Less well known is that that there's reason to assume that QR of the lower QP in (35c) also violates syntactic economy. This is predicted by Chomsky's (1995) statement of the economy condition shortest attract, since the dominating QP is closer to the landing site of movement than the lower QP. But, for example Rizzi's (1990) relativized minimality condition wouldn't be violated by QR of the lower QP adjoining to vP in (35c), since relativized minimality only blocks a movement

chain when another the intervening element c-commands the trace position. Empirical work has favored Chomsky's position (Takano 1993, Kitahara 1994, Müller 1998, and others). For example, a configuration structurally like inverse linking yields a superiority effect with *wh*-movement in (36b) that is comparable in severity to the superiority violation in (36a). This is explained if we assume that shortest attract is active in configurations structurally like inverse linking.

(36) a. ??What did who buy t?

b. ??Who did you buy which book of t?

This explanation of (36b) forces the assumption that QR for inverse linking in (35c) is possible even though it violates shortest attract. What could be the relevant difference that between QR of the inversely linked QP to a position outside of its host, and a) *wh*-movement in (36b) and b) the cases where QR is blocked by syntactic economy? The property of inverse linking QR I want to capitalize on is that it moves the quantifier to the closest position where it can be interpreted with type shifting as discussed in section 2.2 above (Quantifiers can be interpreted without type-shifting only if QR targets a phrase of type t). This explains a) the difference to *wh*-movement because *wh*-phrases can be interpreted everywhere without type-shifting (for example assuming the choice function semantics of Engdahl 1980 and Reinhart 1994). It also explains b) the difference to the blocked applications of QR in Bruening's work and the previous section because only QR in inverse linking is from a non-type t position to a type t position. If this proposal is correct, it argues for the hypothesis that type-shifting operations are not available to the interpretive mechanism of human language.

The proposal also has implications for the theory of syntactic economy. If there is no type-shifting, QPs in positions other than the subject position must be moved to be interpretable (and maybe those in the subject position must move too—see section 4 below). I claim that QR out of an

inverse linking construction is forced by this interpretability consideration and therefore a violation of syntactic economy is forces. This implies that this interpretability consideration is in fact visible to the syntax and can force a violation of syntactic economy.

The proposal that quantifiers are forced to move to take clausal scope is in fact not new. May (1985) already proposes that QR of QPs is obligatory. More recently, Fox (1999) makes the same proposal, based on the observation that many instances of QR seem to violate interface economy. Recall that Fox (1995) argues that scope shifting operations are licensed only when they affect interpretation. However, the possibility of ACD argues that some QR must take place in (37a). Fox (1999) proposes that this QR is licit because it is forced by type resolution.

(37) a. Mary read every book Bill did.

b. [every book Bill $\underbrace{\text{read } t}_{\text{elided VP}}$] Mary $\underbrace{\text{read } t}_{\text{antecedent}}$ (QR)

Note that interface economy can be violated by QR in inverse linking configurations as well. Consider example (38). Here's there's no scopal ambiguity between the two QPs in the inverse linking construction since both of them are singular indefinites. Nevertheless, the possibility of ACD shows that the lower QP can move to a position higher than the QP its contained in.

(38) John interviewed a resident of a city Mary did ⟨interview a resident of t⟩.

(38) Wiles discovered a proof of a theorem Fermat had earlier.

I claim that type considerations force not only a violation of interface economy, but also force a violation of syntactic economy. This shows that syntactic and interface economy are alike in this respect. Nevertheless the two must be distinguished since interface economy can be violated to achieve a difference interpretation, while syntactic economy cannot be (as discussed in section 1.1).

Characteristic of violations of economy principles in order to satisfy a certain condition is that the violation is kept minimal. This must also be the case for the case of QR in inverse linking constructions. Then, the embedded QP cannot QR to the left of the subject though this QR would also take it to a position where it's interpretable. The difference is that the lower position, just above the trace of the subject in Spec(vP) is closer to the position of the inversely linked QP than the position above the the surface position of the subject. Therefore, QR to the latter position is less economical than QR to the former position.

(39) a. Two politicians spy on someone from every city.

b. *[every city] two politicians t_{Subj} spy on some from t.

Note that interpretability considerations also force the QP containing the inversely linked QP to QR to a position above the trace of the subject. Therefore, reconstruction of the subject to the VP internal position does not predict the unavailable interpretation where the subject takes scope between the inversely linked DQP and its host. Narrow scope of the subject in (39a) addressed in the next section.

3.1.1 Discussion of Counterevidence

The proposal predicts that in inverse linking the embedded QP must always take scope above the embedding QP. This prediction may seem falsified by examples like (40a) and (41). However, there are two potential sources for this interpretation. In (40a), I propose that the QP *every player* actually may receive a group interpretation, synonymous to the plural *all the players*. This may help to explain that (40b) with the quantifier *each* doesn't allow an interpretation where John bought just one picture. In (41), the gerund *winning* can probably itself denote an entity of propositional

type. While this discussion is definitely preliminary, it seems that at the moment the prediction of my analysis of inverse linking can be defended.

(40) a. John bought a picture of every player.

b. John bought a picture of each player.

(41) John participated in winning every event.

My proposal also predicts that the DP-adjunction structure for inverse linking discussed in 2.2 is never possible. We saw above that there are some facts where the DP-adjunction analysis cannot be correct, but some other facts have been claimed to be amendable only to the DP-adjunction analysis of inverse linking. The type of evidence in (42) was first seen by Rooth (1985) to lend itself to a DP-adjunction analysis of inverse linking. In (42a), the inverse linking construction occurs as the object of the verb *need*. Rooth observes that *some Norwegian* can take scope above *every* while taking scope below *need*: According to this reading, Mary's needs would be satisfied if she gets every book of Knut Hamsun or every book of Selma Lagerlöf or every book of some other Norwegian.

(42) For her term project, Mary needs every book by some Norwegian. (Rooth 1985:116)

For this interpretation of (42), *some Norwegian* must take scope above *every book* but below *need*. Since the complement of *need* doesn't seem to be a clause, *some Norwegian* cannot be interpreted in a position where it takes a clause as its complement. Rooth's suggestions, that *some Norwegian* is interpreted in a position adjoined to the QP *every book*. However, Dikken *et al.* (1997) for example argue that despite surface appearance, the complement of *need* in (42) is a clause consisting of an empty subject position bound by *Mary* and an empty verb *have*. If this proposal is correct, *some*

Norwegian can be interpreted as the sister of this hidden clause. But, then DP-adjunction and typeshifting aren't required for the interpretation of (42) on the relevant reading.

Heim and Kratzer (1998) give a slightly different example to argue that DP-adjunction of QPs is possible. Namely they observe that (43) allows an interpretation where *every class* takes scope below *neither ... nor*, but above *a student*. This reading can be paraphrased as: John is neither such that he met a student from every class no such that he met a professor. For this interpretation, *every class* must take scope above *a student*, but below *neither ... nor*. Again, there doesn't seem to be any clausal scope position available to which *every class* could adjoin to, and therefore Heim and Kratzer (1998) propose that it's adjoined to the DP *a student* and interpreted by type-shifting.

(43) John met neither a student from every class nor a professor. (Heim and Kratzer 1998:232)

However, Larson (1985), Schwarz (1999) and others have studied the syntax of *either* and thereby also that of *neither*. One conclusion of Larson (1985) is that *either* itself can undergo quantifier raising. But, if *neither* in (43) undergoes QR to a position with clausal scope, *every class* could also QR to this position without necessarily taking scope higher than *neither*. Therefore, (44) doesn't establish a need for DP-adjunction of QPs.

3.2 Reconstruction

Can all cases of inverse scope be explained in the way argued for in the previous subsection? I don't think so. Consider the case of the dative construction with *to* in (44). In these and all other examples with two VP-internal QPs, both QPs are interpretable only in a position adjoined to vP. Hence both QPs are forced to raise to adjoin to this position violating interface economy. However,

no violation of shortest attract arises if the two QPs move in the way argued for by Bruening—maintaining their vP-internal c-command relationship. But, since a violation of shortest attract can be avoided, it follows that it must be avoided from the fact that shortest attract is an economy condition. Empirically, this is corroborated by the absence of inverse scope in the double object construction discussed by Bruening. However, it also follows that the existence of forced QR doesn't predict inverse scope in cases like (44), and a different approach is needed for such cases.

(44) I gave a doll to each child. (a $\gg$ each, each $\gg$ a)

I believe that reconstruction explains the presence of inverse scope in (44). Dryer (1987:821), Aoun and Li (1993:35), and Pesetsky (1994:221) argue for English that the first object in the ambiguous double object cases is moved from a position below the second object as illustrated in (45).[3] (G is a phonetically null preposition Pesetsky argues for.) Crucially movement in (45) must be a type of movement that *each child* isn't eligible for, and therefore it's possible for *a doll* to move across it without violating syntactic economy.

(45) I gave a doll to each child G *t*

I propose that the availability of total reconstruction in (45) explains the availability of inverse scope. Total reconstruction refers to cases where a moved QP takes scope in its trace position. If reconstruction of *a doll* is available in (45), this predicts that *each child* can take scope over *each child*.

If QPs are uninterpretable in vP-internal positions, reconstruction alone doesn't place the quantifiers in positions where they can be interpreted. I assume therefore that reconstruction can

[3]See also Anagnostopoulou 2000 for Modern Greek and Yatsushiro (1998) for Japanese.

feed quantifier raising in the derivation of (45): both quantifiers undergo QR to vP in the scope preserving way Bruening introduced.

Not every account of reconstruction allows reconstruction of a QP to be followed by QR. It is predicted to be possible on the analysis of reconstruction of Aoun and Benmamoun (1998) and Sauerland and Elbourne (1999). Specifically, Sauerland and Elbourne (1999) argue that PF-movement is the only analysis of total reconstruction. Since the surface order is actually that shown in (44), the proposal predicts that QR can take place from this structure.

(46) a. John gave to [each child] G [a book]

b. PF: John gave [a book] to [each child] t

c. LF: [each child] [a book] John gave t t

4 Scope over the Subject

The third case of inverse scope is scope over the subject by any VP-internal QP. There is evidence that scope over the subject involves both mechanism suggested in the previous section: obligatory QR for type reasons and reconstruction of the subject to a lower position.

The evidence for subject reconstruction is found in the literature. Namely, Hornstein (1995) and Johnson and Tomioka (1997) argue independently that scope over the subject requires the subject to reconstruct. If Sauerland and Elbourne (1999) are correct, this requires the subject to remain in a lower position for the entire derivation, except for the phonological branch. For reasons of type resolution, the object is forced to QR to a position above the base position of the subject, and therefore will take scope over the subject if the subject remains in its base position.

(47) every bank$_x$ a policeman is standing in front of x

It turns out that this analysis cannot be maintained for empirical reasons. In the following subsection, I show that the full picture argues for the assumption that subjects also must QR obligatorily.

4.1 An Empirical Problem and Subject QR

The problem discussed in this section is posed by the difference between inverse linking and the double object construction. In the inverse linking construction, as was shown in 2.1, the two QPs cannot be separated by the subject—it's impossible that one of them take scope over the subject and the other one take scope below the subject. This is correctly predicted by the above view of how scope over the subject is derived, since both QPs must QR above the base position of the subject.

(48) Two politicians spy on someone from every city.

However, the double object construction behaves differently as Bruening shows. For example in (49), the subject can take scope between the two QPs in the object positions: (49) can be true in a situation where for every girl there are two boys such the each of the boys gave each of the boys a different flowers. This is evidence for the scopal order *every girl* $\gg$ *two boys* $\gg$ *a flower*.

(49) Two boys gave every girl a flower.

The approach sketched above also predicts for examples like (49) that the subject cannot take scope between the two objects in (50): After both of the objects adjoin to vP, the subject can take scope only below both of them in Spec(vP) or above both of them in Spec(TP). (49) shows that the subject must have a third position other than Spec(vP) and Spec(TP) where it can take scope.

The problem seems quite difficult and the following account of mine I regard as in part speculative. One assumption almost forced by the presence of inverse scope in (49) is that the subject is allowed to QR to a position between the two objects. But, why shouldn't it also be

possible to QR the subject between the two QPs of the inverse linking construction? The idea of my proposal is that the relevant difference between the inverse linking and double object constructions, is that only in inverse linking one of the QPs contains the other initially. I claim that therefore the two QPs in the inverse linking construction must move together before the inversely linked QP moves out. In the double object construction, however, movement of the higher QP doesn't change the position of the lower QP (or vice versa). This difference becomes relevant if another assumption is made: that the subject can also undergo QR and, furthermore, that QR of the subject can preceed or follow QR of any vP internal QP. If the subject must also QR to adjoin to vP, it must QR in a way that doesn't violate syntactic economy. That means it cannot move across QP that already adjoined to vP, since this would violate the shortest move condition. On the other hand, object QR following QR of the subject must place the object below the QR-ed subject, since the object is interpretable in any position above the subject trace. I show now that the diffence between (48) and (49) can be accounted for along these lines.

A number of people have proposed that also subjects must QR (May 1985, Heim 1997a, Johnson and Tomioka 1997, and others). Within the theory of binding developed in Heim and Kratzer (1998), a strong argument for this assumption comes just from the possibility of binding by the subject. Heim and Kratzer (1998) assume that only QPs that underwent movement of some type can act as binders, since only the movement rule inserts a λ-operator. Since subjects even when they take narrow scope below an object can bind vP internal variables (shown by (50)), it must be assumed that subjects can undergo QR from the vP-internal subject position. And, since this QR violates interface economy, it's the easiest assumption that QP-subjects are actually forced to QR when they haven't undergone some other form of movement.

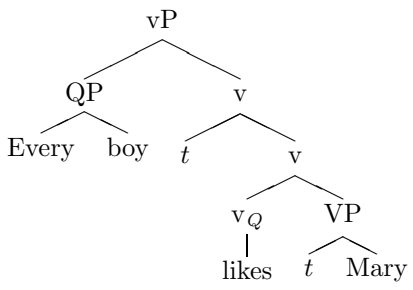
(50) Only one student$_i$ painted himself$_i$ in every class.

I propose therefore that QPs when they remain in the subject position of vP must QR to a higher specifier of vP. The reason for this QR might be that every QP must bind a variable in its scope as originally proposed by Chomsky (1976) and May (1977) (see also Heim 1997b). The shortest movement that could possibly satisfy this requirement would be QR of the subject QP to a specifier position of the same projection: Movement from the lowest Spec(vP) to the next higher Spec(vP). As far as I know, there are no cases in the literature where exactly this kind of movement—from the Spec of one projection to a higher Spec of the same projection—has been proposed. However, movement from a position internal to a Spec to a higher Spec of the same projection is made use of in many analyses of possessor raising (references xxx).

As for the syntax of subject QR, when the subject remains in vP, the expectation is that it's one instance of the general movement mechanism. Since current work in syntax argues that movement is implemented as always involving checking of a feature, evidently subject QR must also involve checking of a feature with v, which is the head attracting the subject QP. The relevant feature must be the feature involved in QR generally. The movement postulated is illustrated in (51) assuming that the subject *every boy* doesn't move to Spec(TP) in the part of the derivation leading to LF.[4]

(51) a. Every boy likes Mary.

b.

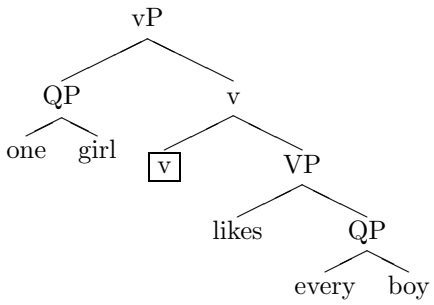


[4]The analysis of (51) assumes that the subject in this particular example may move to Spec(TP) only at PF. I don't actually believe that this aspect of the analysis in (51) is correct, but use (51) only to illustrate how subject QR would take place if the subject were to not move to Spec(TP).

Consider now the example in (52). At the stage of the derivation of (52a) shown in (52b), v bears a Q-feature that needs to be checked. There are two QPs that could check to the Q-feature of v, the subject *one girl* and the object *every boy*. The question is which of the two, the subject or the object, is closer to v. I claim that both QPs are closest to v (in the technical sense of *closest* of course), and hence both can move to Spec(vP).

(52) a. One girl likes every boy.

b.

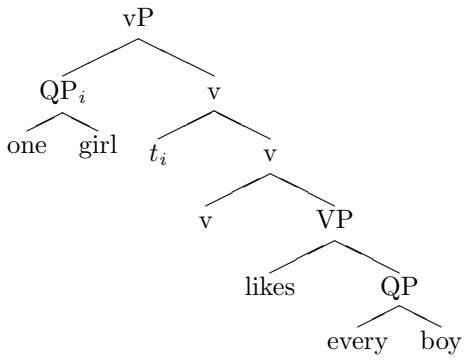


The standard concept of closeness I assume is that going back to Rizzi (1990:27). In essence, what Rizzi argues is that Y is closest to X if there's no Z such that X c-commands Z and Z c-commands Y. In our example (52), X would be the attracting head v, and find those phrases with bearing a Q-feature that are closest to it. On Rizzi's proposal, actually only the object QP (or its head) is closest to v. However, Rizzi's proposal would never allow movement from the Specifier of a head X to a higher Specifier of the same head. Therefore, I assume that actually Y is closest to X if there's no Z such that Z is c-commanded by one of X or Y and c-commands the other one. This keeps the insight that Z must not intervene in the path along the tree that connects X and Y.

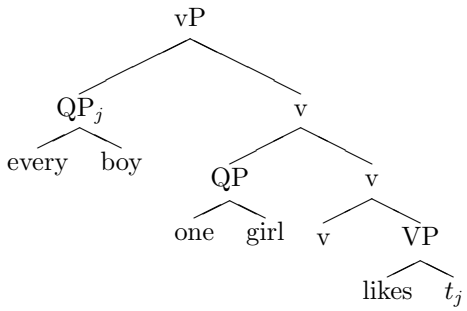
The concept of closest according to which both the subject and the object are closest to v makes the right prediction for the case at hand. It predicts that at the stage of the derivation shown in (52b) the target of attract can be either the subject or the object. The landing site of this movement is determined by two considerations: a) the landing site must be type t, and b) the distance between

the source site and the landing site of movement must be minimal. This predicts that whichever target of attract is chosen, the landing site of movement is a specifier position immediately above the subject because this is the only position of type t. Hence, depending on whether the subject or object is the target of attract, the two representations in (53) a derived from (52b).

(53) a.



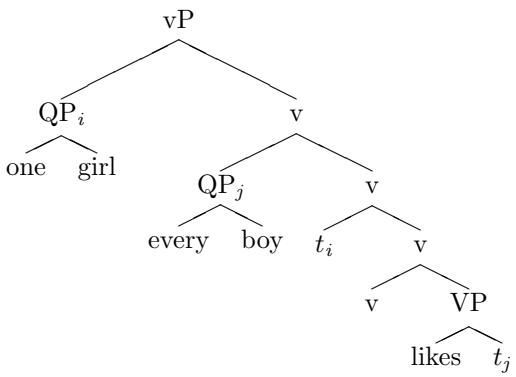
b.



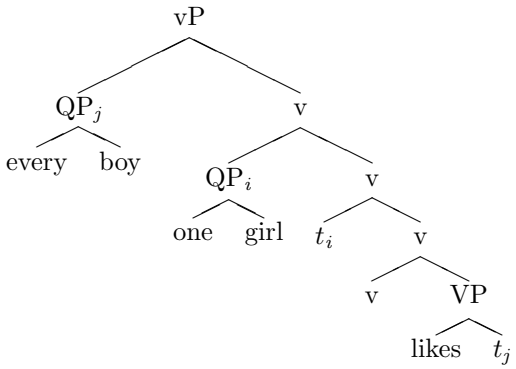
Both representations in (53) are still not interpretable according to our assumptions. In (53a), the object QP isn't yet in a position where its complement is of type t and therefore (53a) isn't interpretable. In (53b), the subject isn't yet in a position where it binds a trace and therefore also not interpretable. Hence, in both cases a further application of quantifier movement is required again implemented as the checking of a Q-feature of v. Again the landing site of this movement is determined by the two considerations a) and b) mentioned above. As a result the second instance of QP-movement in both (53a) and (53b) targets a position immediately below the already moved quantifier. (54a) shows the structure derived from (53a), and in this representation the subject takes

wide scope over the subject. (54b), which is derived from (53b), is the representation that results in inverse scope.

(54) a.



b.



4.2 Account of Double Objects and Inverse Linking

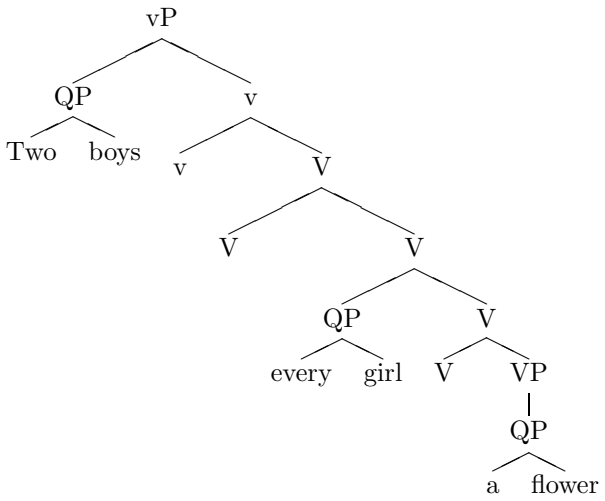
Consider now double objects and inverse linking again. This section shows that the interaction of subject QR and QR of the vP internal QPs derives the difference between the two constructions.

The availability of scope for the subject between the two objects of a double object construction is illustrated in (55) (repeated from (49)).

(55) Two boys gave every girl a flower.

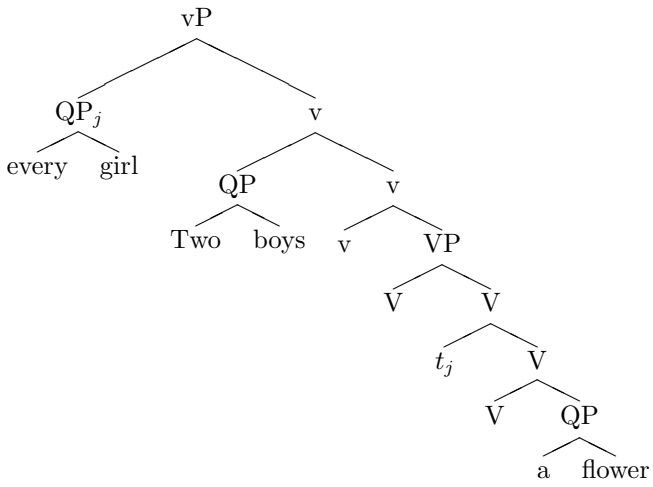
In the discussion of the transitive example, I argued that subject QR can take place either before or after object QR. This optionality also exists in (56). But, as the structure in (56) shows, no optionality is predicted for the QR of the two objects—because of shortest attract the higher object must undergo movement first.

(56)



Relevant is the derivation arising from (56) if the object *every girl* undergoes QR first (If the subject undergoes QR first, the hierachical order of quantifiers will remain unchanged). QR of *every girl* has to move to a specifier position above the subject—the resulting representation is shown in (57). (57) isn't interpretable without further applications of QR: QR of the subject and QR of the second object. Crucially, for this second application of QR again the optionality between subject and object QR exists since both are closest to v. For the subject this is the case for the same reasons as above, for the second object this is the result of the higher object having moved out of the way, so to speak (On any theory of movement, traces like t_j even if they are assumed to be copies, aren't eligible to movement—see Chomsky 1995:304.)

(57)



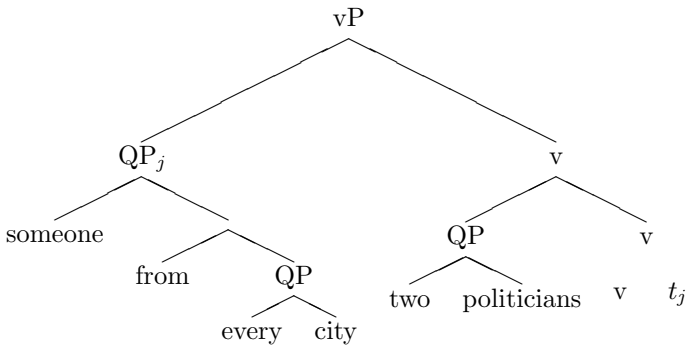
If the second object QRs first in representation (57), the scopal relations first object ≫ second object ≫ subject result. If, however, the subject QRs first in representation (57), the scope of is different as the scopal order resulting is first object ≫ subject ≫ second object. This scopal order is the one, the earlier account without subject QR couldn't generate.

Now consider again Larson's inverse linking example repeated in (58). Again there's optionality: the first step of QR can move either the subject or the object. Again only derivations that start with QR of the object need to be considered, since if the subject QRs first neither object will take scope over the subject.

(58) Two politicians spy on someone from every city.

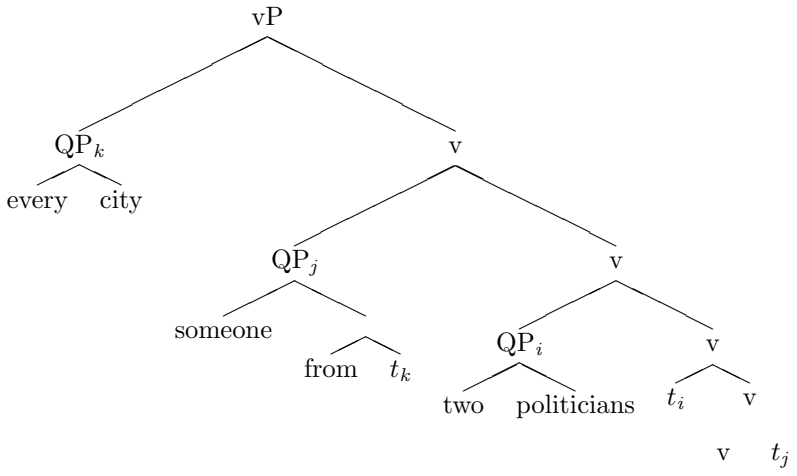
The representation arising from QR of the object in (58) is shown in (59). The important difference to the double object case is that the inversely linked QP in (59) has been moved along as the object moved to Spec(vP).

(59)



Again further applications of QR must take place to derive an interpretable structure from (59): QR of the subject and QR of the inversely linked QP. Since there is no c-command relation amongst these two QPs both of them are closest to v, and the order in which the two operations take place isn't fixed. Regardless of the order of operations, however, the subject will take lowest scope: The subject must QR to a position below the object that has already undergone QR because of Shortest Move. The inversely linked QP, on the other hand, must QR to a new highest specifier of vP because it c-commands its trace only from that position. Therefore the structure in (60) is the only interpretable structure arising from (59). This structure results in the scopal order observed by Larson, and the only other scopal order predicted is the subject taking widest scope.

(60)



4.3 Clause Boundedness [rough]

The restrictions on quantifier raising developed in the previous sections predict an interesting interaction between QR and clause boundaries. I argued that in two cases (inverse linking and scope over the subject) inverse scope over a higher QP is only possible because the interpretability condition that quantifiers must take scope over a proposition forces movement that is in violation of syntactic economy. Therefore, inverse scope over another QP should be impossible if there is a constituent of type t lower than this QP. However, scope over a scope taking verb should still be available in such a case.

For inverse linking this prediction is observed in (61)—the complement clause is a proposition and therefore movement of *every abstract* into the higher clause isn't forced.

(61) John presented one argument that every abstract is wrong. (*every $\gg$ one)

The more interesting case is the relative scope of the subject and a vP internal QP. The prediction is that if the lower QP could target a closer position of type t movement across the subject should be possible. This predicts straightforwardly the well-known observation that a quantifier embedded in a finite clause cannot take scope over the matrix subject because the finite clause constitutes a proposition and QR over the matrix subjects base position isn't forced.

(62) a. One teacher suspects that every boy did it. (*every $\gg$ one)

b. One teacher suspects that Mary will marry every boy. (*every $\gg$ one)

Finiteness, however, doesn't play any role in the explanantion here, and the prediction should also hold for infinitival complements. For infinitival complements with an overt subject, the object of the embedded clause is predicted to not be able to take scope over the matrix subject. Hornstein

(1995:156) presents some such examples of infinitival complements where scope over the subject isn't available. (see also Aoun and Hornstein 1985)[5]

(63) a. Someone persuaded John to attend every class.

b. Someone believes John to be attending every class.

For infinitival complements without an overt subject, the prediction is that if the infinitival complement has a subject, the object of it cannot take scope over the matrix subject. However, if the complement has no subject, the object of the complement can take over the matrix subject. One case of infinitival complement that clearly has a subject are raising verbs. Lebeaux (1995) shows that scope over the subject is available with raising verbs only if the subject takes scope in the lower clause.

For control complements, Wurmbrand (1998) argues that it depends on the embedding verb whether the infinitival complement has a subject: the embedded subject below restructuring verbs is optionally represented as PRO, the subject below non-restructuring verbs is obligarily represented. This predicts that non-restructuring verbs should not allow an embedded object to take scope over the matrix subject. I don't know whether this prediction is correct, but it is the one Hornstein (1994, 1995) argues for.

(64) Someone hoped to recite every poem.

(65) (Hornstein 1994:(27))

a. Someone expects to dance with every woman.

b. Someone wants to dance with every woman.

[5]ECM subject vs. other subjects xxx

An issue separate from scope over the subject is, though, whether scope over a higher verb is possible. I argued in Section 2.4 that movement across a higher verb doesn't violate syntactic economy, and therefore this movement can occur even when a QP already occupies a position of type t. Initially, this seems surprising since the shortest movement across a verb would lead to a position below the subject, and therefore to a position not of type t. Since such a structure wouldn't be interpretable, movement must actually cross the subject position. I claim that there's in fact one case where the Spec position above the subject is as close to a vP internal QP as the position below the subject: namely, in case the subject position is occupied by a trace: this is the abstract structure shown in (66c).

(66) a. *subject QP_i v+verb $\ldots t_i \ldots$

b. *QP_i subject v+verb $\ldots t_i \ldots$

c. QP_i t_j v+verb $\ldots t_i \ldots$

The difference between (66a) and (66b), on the one hand, and (66c), on the other, is the material that makes the movement shown longer than movement to a position below the base position of the subject. In (66c), this material is just a trace. Since it's well known that traces are irrelevant for the computation of shortest attract, I suspect that traces are also irrelevant for shortest move. This would predict the pattern in (66). I show now empirical evidence for this pattern.

One widely used test for wide scope of an embedded quantifier over a higher verb is the possibility of Antecedent Contained Deletion which included the matrix verb in the ellipsis resolution. As Kennedy (1997) argues (contra Hornstein), restructuring verbs allow wide scope ACD. If it was true, that restructuring verbs allowed wide scope ACD, but not wide scope over the subject this would in fact be another case of relativized minimality.

More dramatic is the case of finite clauses. Fiengo and May (1994) and Wilder (1997) show that quantifiers embedded in a finite clause can take scope over the embedding verb.[6]

(67) John said that you were on every committee that Bill did.

5 Extension: The Immediate Scope Constraint [notes only]

Linebarger (1980) observes that an NPI is only licensed by negation when no other quantifier takes scope between negation and the NPI.

(68) a. *She doesn't budge for everybody. (Linebarger 1980:29)

b. She doesn't budge for me.

(69) a. I didn't want Kai to eat any cheese.

b. *I didn't want every boy to eat any cheese.

Imagine an approach to NPIs, where the NPI or parts of it must QR to a position above negation for the NPI to be licensed. Then, the contrasts in (68) and (69) follow from superiority.

Lahiri (1997) argues for such an approach to Hindi NPI (see also references in Lahiri 1997). Hindi NPI are composed out of *even* and *one* which yields contradictory implicatures .

(70) a. #I read even one book.

b. 'There's a number $n \neq 1$ such that I read n books.'

c. #'Of all numbers, it's least likely that I read one book.'

[6]This isn't the case for subjects. See Fox (1999) for an explanation.

But, if *even* takes scope above negation, while *one* takes scope below it, the implicatures of 'even' are non-contradictory.

(71) a. I didn't read even one book. (even≫one)

b. 'There's a number $n \neq 1$ such that I didn't read n books.'

c. 'Of all numbers, it's least likely that I didn't read one book.'

Lahiri (1997) assumes that *even* must move to a position above negation by QR in order to take scope there.

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