

ADJUNCT EXTRAPOSITION: BASE-GENERATION OR MOVEMENT?

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May 2015 – to appear in *Syntax*

ABSTRACT

It has been argued that extraposition from DP is derived differently according to whether a complement or an adjunct is extraposed, with complement extraposition being derived by movement and adjunct extraposition being derived via covert QR of the host DP plus Late Merge of the adjunct (Fox & Nissenbaum 1999). We argue that adjunct extraposition is itself derivationally ambiguous, and may be derived either by movement of the adjunct or by base-generation of the adjunct in extraposed position. Accordingly, we argue for a relaxation of the strictly compositional view that nominal modification is always mediated by syntactic sisterhood. We argue that while base-generated extraposition is possible with quantificational host DPs, adjunct extraposition from definites must be derived by movement. This accounts for a number of asymmetries between extraposition from definites and from other types of DP, concerning reconstruction for Condition C, scope reconstruction, and information-structural restrictions on extraposition.

1. INTRODUCTION

The compositional principle that semantically closely-related elements must also enter into a

* For discussion and judgments, we would like to thank Alison Hall, Vikki Janke, Michelle Sheehan, Gary Thoms and Rob Truswell, as well as audiences at the LAGB Annual Meeting 2011 and the UCL/Potsdam Syntax Workshop in February 2012. In addition, we are grateful to the three anonymous reviewers of this article, who provided very detailed comments that we believe have led to significant improvements, and to David Adger and Klaus Abels for their helpful editorial guidance. Of course, we alone are responsible for any errors that remain.

syntactically local relation has long played an important role in linguistic theory. For example, it is standardly assumed that a predicate must be (externally) Merged with its arguments and that a modifier must be (externally) Merged with the category it modifies. Given these assumptions, cases in which the predicate and argument or modifier and modifiee pairs surface in discontinuous positions must involve movement of one of the two elements. Of course, there are other ‘non-local’ phenomena, such as binding and obligatory control, which have traditionally been treated quite differently from this. Thus, under GB assumptions (in particular, the D-Structure Theta-Criterion of Chomsky 1981), it was not possible for the antecedent of an anaphor to externally Merge with that anaphor, nor for the anaphor to be analyzed as a ‘spelled-out trace’ of its antecedent. Instead, a unification of these three superficially non-local relations (movement, binding and control) was proposed in terms of the concept of government, along with the use of referential indices. With the demise of government and referential indices within Minimalism (e.g., Chomsky 1993), however, a number of authors have instead attempted to unify these relations in terms of movement (or Copy+Merge). Thus, for example, Hornstein (2001) argues that obligatorily-controlled PRO is in fact simply an unpronounced copy of its (moved) antecedent, while Kayne (2002) argues that anaphors (and, in fact, pronouns too) are externally Merged with their antecedents in a ‘big DP’, from which the antecedent subsequently moves. In the context of this work, then, the question arises whether all ‘semantically local’ relations can be made syntactically local in this way.

In this article, we argue that this perspective cannot be generally maintained in the case of nominal modification. In particular, we argue that extraposition from DP is one case where a semantically close relation requires syntactic locality, but not in the sense that the extraposed adjunct must be Merged (either externally or internally) with its modifiee. Thus, we argue that the extraposed relative clause in (1b) need not be Merged with the DP *a woman*

at any point in the derivation, but may be generated in its surface position and related to its ‘host’ DP only at LF (see Guéron & May 1984 for a precedent):

- (1) a. A woman who had three eyes came in.
b. A woman came in who had three eyes.

We assume, following a long line of work, that the relationship between a modifier and a modifiee is thematic, and is therefore subject to the same restrictions as theta-marking (roughly, mutual m-command between the theta-role bearer and the category discharging that theta-role). Crucially, though, we also assume (following, e.g., Neeleman & van de Koot 2002) that the theta-role bearer need not be Merged directly with the category satisfying that theta-role. Rather, as expected in a Minimalist system with no syntax-internal levels of representation, what is important is that the two elements involved in a thematic relation are in a local relation at LF. In a case of adjunct extraposition such as (1), then, assuming that the adjunct is a theta-role bearer and that the determiner of the modifiee discharges that theta-role (Higginbotham 1985), there are two situations in which the adjunct’s theta-role may be discharged. If the adjunct is generated DP-internally and then moves to extraposed position, it will meet the conditions on theta-role discharge prior to movement. However, assuming that the locality conditions on thematic relations only apply at LF and not at the point of external Merger, a second option is available: the adjunct may be base-generated in extraposed position (e.g., adjoined to TP) provided the DP can move to a position where the locality condition can be met. We argue that this is possible only if the DP can undergo Quantifier Raising (in this case, adjoining the DP to TP) followed by ‘restrictor minimization’ as proposed in Chomsky 1993, which deletes the NP restrictor in the top copy of the raised DP at LF. We show that, for semantic reasons, the combination of these two options is available

for universals and indefinites, as in (2a,b) respectively, but not for anaphoric definites, as in (2c):¹

- (2) a. Every woman came in who had three eyes. (base-generation possible)
- b. A/some woman came in who had three eyes. (base-generation possible)
- c. The woman came in who had three eyes. (movement only)

Thus, (2c) cannot involve base-generation under our analysis, because definites may not undergo restrictor minimization, even if they may undergo QR. The only way that extraposition from definites can satisfy the locality conditions on theta-role discharge, then, is if the adjunct has undergone movement (which we take to be rightward A'-movement) from inside its host DP.²

We show that this dual analysis of adjunct extraposition accounts for a number of otherwise puzzling empirical differences between adjunct extraposition from definites and adjunct extraposition from other DPs. Our first argument comes from binding. It has been noted that extraposition often bleeds Condition C, which has been taken as an argument for base-generated extraposition (e.g., Culicover & Rochemont 1990) or Late Merger of the extraposed phrase (Fox & Nissenbaum 1999). However, extraposition from definites behaves differently: Condition C effects hold just as they would with the extraposed phrase *in situ*. Once again, this follows from the rightward movement analysis of extraposition from

¹ For convenience, we henceforth use 'definites' to mean 'anaphoric definites', unless otherwise indicated.

² In this sense, our theory resembles that of Guéron & May (1984), who argue that extraposition from definites is impossible because definites may not undergo QR. Thus, a definite DP can never enter into the required LF locality relation (for them, government) with an extraposed phrase. Our proposal differs from this in that (i) extraposition may involve either base-generation or movement (not just movement), and (ii) extraposition from definites is permitted in principle, but may only involve movement and not base-generation.

definites, since A'-movement typically reconstructs obligatorily for Condition C. Our second argument is similar, but concerns scope reconstruction. We show that extraposition does not affect scope possibilities in the case of most QPs or definites, as we expect. We also show, however, that there is a class of QPs which act as scope islands for QPs they contain, yet allow 'inverse linking' when a QP is extraposed from them. This supports the idea that such cases of extraposition are base-generated. Another scope property that has been associated with extraposition is 'scope-marking': an extraposed phrase marks the scope of its host DP. However, since A'-movement obligatorily reconstructs for scope, we predict that extraposition from definites, which involves rightward A'-movement, does not mark the scope of the definite. We show that this prediction is correct. An additional prediction that we make is that base-generated extraposition should bleed scope reconstruction. We show that in cases where an A-moved QP could normally reconstruct for scope inside an embedded clause, this is prevented where the embedded clause undergoes ellipsis if the QP is linked to a (stranded) extraposed phrase. In the final section, we discuss another distinctive property of extraposition from definites concerning information structure. In particular, extraposition from definites has been observed to be more restricted in its occurrence than extraposition from indefinites and universals. A number of authors have argued that this is because a phrase extraposed from a definite must be interpreted as a contrastive focus in some sense. Since our analysis requires rightward A'-movement (licensed by focus) in the case of extraposition from definites, our analysis also captures this property.

2. BASE-GENERATION VS. MOVEMENT IN THE ANALYSIS OF EXTRAPOSITION FROM DP

The term 'extraposition' has been used to refer to various types of rightward displacement of elements from their canonical positions. Here we restrict our attention to the 'extraposition' that displaces various (putatively) DP-internal items from their canonical positions to clause-

final position. The items that can be extraposed include relative clauses (3a), complement clauses (3b), adjunct PPs (3c) and complement PPs (3d):

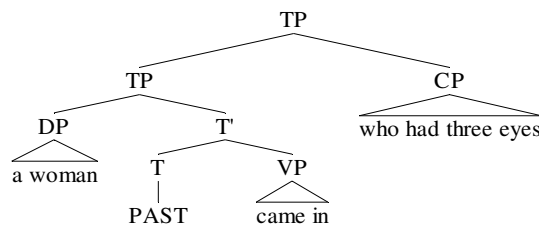
- (3) a. [A woman $_i$] came in [_{CP} who had three eyes]_i
- b. [A claim $_i$] was made [_{CP} that Mary had three eyes]_i
- c. [A woman $_i$] came in [_{PP} with three eyes]_i
- d. [A picture $_i$] was taken [_{PP} of a woman with three eyes]_i

The gap notation ($_$) is intended to indicate a semantic relation between the coindexed extraposed element and the DP without committing to specific syntactic or semantic mechanisms for deriving this relation. While the classic analysis of extraposition (e.g., Ross 1967) involves rightward movement of the extraposed element, a number of authors have argued that extraposition involves base-generation of the extraposed element in its surface position.³ More recently, Fox & Nissenbaum (1999) have argued that extraposition of complements is derived differently from extraposition of adjuncts (including relative clauses): while complement extraposition involves rightward A'-movement of the complement, adjunct extraposition does not involve movement of the adjunct. Rather, the host DP undergoes rightward QR, and the extraposed adjunct is Late-Merged inside the

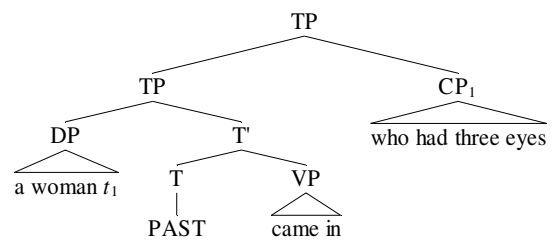
³ Other analyses making use of rightward movement include Baltin 1981, Guéron & May 1984, Müller 1995, Büring & Hartmann 1997 and Fox & Nissenbaum 1999. In addition, leftward movement analyses based on the antisymmetry hypothesis have been put forward in Kayne 1994, Wilder 1995 and Bianchi 2000. Base-generation accounts include Andrews 1975, Koster 1978, 2000, Culicover & Rochemont 1990, Haider 1995, Kiss 2005 and Hunter & Frank 2014. Other authors treat extraposition as a 'stylistic' or PF rule (e.g., Rochemont 1978, Chomsky 2008), or at least as a rule that makes reference to phonological rather than syntactic constituency (Truckenbrodt 1995). Finally, Hawkins (1994) argues that extraposition takes place in a 'performance' module of the grammar in order to facilitate parsing.

covert higher copy of this DP (see Sheehan 2010 for a related analysis). We will argue against the idea that adjunct extraposition uniformly involves base-generation (or Late Merge) of the adjunct, and in favor of a rightward A'-movement derivation for adjunct extraposition from definite DPs. Thus, we propose that both a base-generation structure (4a) and an A'-movement structure (4b) are available in principle for adjunct extraposition:

(4) a.



b.



The A'-movement structure in (4b) allows for a straightforwardly compositional analysis of the relation between the extraposed adjunct and the host DP, as the adjunct starts in the same position that it would surface in if not extraposed – Merged to a projection of the host. The base-generation structure in (4a), however, does not satisfy a strict version of compositionality: at no stage in the derivation is the adjunct Merged with its host. On the other hand, previous work on extraposition (e.g., Ross 1967, Reinhart 1980, Baltin 1981, Wittenburg 1987, Culicover & Rochemont 1990) has shown that the relation between the extraposed clause and its host is constrained by locality, which suggests that even a base-generation analysis such as (4a) will need to incorporate a syntactic relation linking the extraposed phrase to its host. Here, we want to capitalize on the widespread idea that nominal modification involves a kind of thematic relation. For example, Higginbotham (1985) proposes that lexical categories, including nouns, bear an external theta-role which may be satisfied either by theta-marking a subject (in which case the DP/NP functions as a predicate) or by being 'bound' under sisterhood with a determiner (in which case the DP functions as an

argument of some other predicate). Thus, in the sentence *Barry is a man*, the theta-role of *man* is assigned to *Barry*, whereas in *Barry hates the man* the theta-role of *man* is bound by the determiner *the*, and the DP *the man* serves as an argument of the predicate *hate*. Thus, both arguments (such as *Barry*) and determiners (such as *the*) may discharge the external theta-role of a nominal predicate. Now, APs may of course also function as predicates (as in *Barry is rich*); when an AP acts as an intersective nominal modifier (as in *Barry met a rich man*), the AP's theta-role needs to be bound by a determiner. However, assuming that a determiner may only bind a single theta-role (the 'theta-binding' equivalent of the Theta-Criterion), this means that the AP's theta-role must be 'identified' with the NP's theta-role in the node immediately dominating the two constituents, such that this single theta-role can be bound under sisterhood by the determiner. This is achieved via theta-role percolation: the theta-roles borne by the NP and AP are copied into the immediately dominating node, and theta-identification ensures that they are merged into a single role in this node.

As it stands, we cannot straightforwardly treat the relation between a base-generated extraposed adjunct and its host DP as parallel to that between an attributive adjective and a determiner, as extraposed adjuncts are generally assumed to be structurally superior to their hosts (e.g., Baltin 1981, 2006, Wittenburg 1987, Kiss 2005; though cf. Culicover & Rochemont 1990). This means that a theta-role could not percolate upwards from the extraposed adjunct and be bound by the determiner under sisterhood. On the other hand, if the host DP could move to a position c-commanding the extraposed adjunct, percolation and theta-binding could take place, provided that satisfaction of the theta-role may take place following movement. Furthermore, if nominal modification is a thematic relation, we might expect the relation between the determiner and the adjunct to observe the same conditions as theta-marking of an argument by a predicate. In the case of theta-binding, the adjunct is analogous to a predicate (it bears a theta-role) while the determiner is analogous to an

argument of that predicate (it discharges the theta-role).⁴ Now, one commonly assumed generalization about theta-marking is the following (e.g., Williams 1980:204, Neeleman & Weerman 1999:20ff.):⁵

- (5) i. An argument of a predicate must c-command the predicate.
- ii. A predicate must m-command its arguments.

Adapting this to theta-binding, we expect the following generalization to hold:⁶

⁴ A reviewer comments that, semantically speaking, the situation is the other way around: the determiner is standardly assumed to take its complement as its argument. While we concede this, we think it is important to make a distinction between syntactic and semantic arguments (only the latter of which are encoded in the form of theta-roles), which may not always coincide. For example, T takes *v*/VP (or some other maximal projection in the extended verbal projection) as its semantic argument, but this is never assumed to be encoded in the form of theta-marking (for example, there is no real equivalent of the ‘linking problem’ for the relations between functional heads and their complements).

⁵ We assume the following definitions of c-command and m-command (along with the segment/category distinction):

- (i) *C-command*: A c-commands B iff A excludes B and the first category dominating A also dominates B. (e.g., Kayne 1994)
- (ii) *M-command*: A m-commands B iff A excludes B and every maximal category dominating A dominates B. (e.g., Aoun & Sportiche 1983, Ernst 1994)

⁶ Neeleman & van de Koot (2002) note that a secondary predicate in fact need not always m-command its argument, as shown by the example in (i):

- (i) The device arrived [while [still explosive]].

- (6) In order for a determiner to discharge a theta-role:
- i. The determiner must c-command the theta-bearer.
 - ii. The theta-bearer must m-command the determiner.

For *in situ* nominal modifiers, the relations in (6) hold if the modifier is adjoined to the NP complement of D, assuming that the segment/category distinction is relevant for c/m-command (e.g., Kayne 1994). As noted above, however, the relations in (6) do not appear to

This raises the question of why an extraposed adjunct could not be in a lower position where it does not m-command the host DP. We think that this possibility can be ruled out if the conditions in (6) refer to the theta-role borne by the adjunct, rather than to the adjunct itself. Neeleman & van de Koot account for (i) by allowing upward percolation of the theta-role of *explosive* followed by identification of this theta-role with that of *arrived* in the VP node; this unified theta-role is then assigned to the subject. However, percolation is blocked by theta-roles on the percolation path, so for example an intervening subject blocks long-distance secondary predication, as in (ii) (Neeleman & van de Koot 2002:561):

- (ii) John₁ ordered Mary₂ [PRO₂ to dance nude_{*1/2}].

Here, the theta-role assigned to PRO (from *dance*) blocks further percolation of the theta-role of *nude* into the matrix clause, thus restricting *nude* to being predicated of PRO (and ultimately the controller *Mary*).

Returning to the question of how far an adjunct can be from its host DP, suppose the adjunct is adjoined to a clause subordinate to that containing the intended host DP. Then percolation of the adjunct's theta-role to a node m-commanding the subject will be blocked by the theta-roles of the embedded predicate. On the other hand, suppose that the adjunct is generated in a position where the only intervening theta-role is itself assigned to the intended host DP. In that case, identification could take place, but it would not be possible for the resulting unified theta-role both to be assigned to this DP (giving a secondary predicate interpretation of the adjunct) and to restrictively modify it, assuming that this represents a violation of the Theta-Criterion (a single theta-role is assigned to/satisfied by more than one element; here, the determiner of the host DP and the whole host DP).

hold in the case of extraposition from DP, as a base-generated adjunct is not c-commanded by the D of its host, or even (arguably) by its maximal projection.⁷ We thus propose, following Neeleman & Weerman (1999), that theta-theory holds only at LF.⁸ This means that an extraposed adjunct must enter into a theta-binding relation with the determiner of its host DP by LF. In principle, this may happen in one of two ways. If the adjunct has undergone rightward A'-movement to extraposed position, then it may reconstruct back into the host DP (i.e., its lower copy may be interpreted) at LF, where the conditions in (6) are met. On the other hand, if the adjunct is base-generated in extraposed position, then the host DP must move to a position local to the extraposed adjunct, and a further operation is required to

⁷ A reviewer comments that the real problem base-generated extraposition would present for semantic interpretation is how to derive the semantic conjunction of the nominal restrictor with the extraposed adjunct, rather than how to relate the nominal restrictor and the extraposed adjunct to the determiner semantically. While we might imagine the nominal restriction and the adjunct entering independently into relations with the determiner, rather than with each other, the reviewer claims that this is not a particularly parsimonious view if a rule like predicate conjunction (e.g., Heim & Kratzer 1998) is available anyway. However, since both *in situ* and extraposed cases of nominal modification can be accommodated by the rules in (6), we can in fact do without the predicate conjunction rule (and its syntactic counterpart, theta-identification). (This means that in cases of theta-marking, too, we need to invoke multiple theta-marking in cases such as *Barry is a tall man* and in cases of secondary predication.) While this is less appealing from the point of view that all semantic rules involve syntactic sisters (a strict version of compositionality), we believe that purely syntactic arguments for a less strictly compositional syntax/semantics interface should be taken seriously, and that the evidence we present in this paper can be taken as such an argument. Note that there is nothing unsystematic about the relation between the syntax and semantics of modification here; we merely take the syntactic encoding of the relation to be in terms of c/m-command (perhaps implemented in terms of percolation) rather than sisterhood. (See Reeve 2012 for a similar type of argument concerning cleft constructions.) As the reviewer notes, however, this view is in conflict with standard formulations of the Theta-Criterion; see fn. 14.

⁸ This assumption is desirable from a Minimalist perspective, since Minimalism eschews all other levels (D-Structure, S-Structure, etc.) at which such conditions could be assumed to apply.

ensure that the quantificational D itself (as opposed to the whole DP) c-commands the extraposed adjunct. It has been argued that extraposed adjuncts adjoin to the first maximal projection dominating their host DPs: thus, adjuncts extraposed from subjects adjoin to TP, and adjuncts extraposed from objects adjoin to VP (Baltin 1981, Culicover & Rochemont 1990). These also correspond to the positions targeted by Quantifier Raising, according to the influential account of Fox (2000). What we would like to argue, then, is that base-generated extraposition is only possible if the host DP undergoes QR followed by what we will call ‘restrictor minimization’ (originating in Chomsky 1993). In that case, for extraposition from subjects, we will end up with the LF configuration in (7a).⁹ Here, the PP m-commands the DP (as it did before QR), but the determiner does not c-command the PP. However, it is frequently assumed that an LF operation (‘restrictor minimization’) deletes the NP restrictor from the higher copy and the quantifier from the lower copy, as in (7b).¹⁰ Suppose that this

⁹ Note that the step in (7a) apparently violates Fox’s (2000:23) Scope Economy condition, which requires applications of QR to have a semantic effect if they are not independently forced by semantic type considerations (which is not the case with quantified subjects). It could, however, be argued that licensing an otherwise unlicensable extraposed modifier counts as a ‘semantic effect’. In any case, we can see no particular motivation in Fox’s work for ruling out ‘short QR’ of subjects to TP-adjoined position: his evidence for Scope Economy primarily concerns cases where one QP crosses over another. Indeed, the use of QR in Fox & Nissenbaum’s (1999) analysis of adjunct extraposition would obey Scope Economy only under this weaker definition. We therefore assume that QR always applies, as discussed in fn. 12.

¹⁰ Restrictor minimization is similar to Heim’s (1982) Quantifier Construal, which simply takes the quantificational D and attaches it to the closest dominating S node. A reviewer notes a potential undesirable consequence of adopting restrictor minimization: that quantifiers would have to be lexically ambiguous depending on whether they undergo QR or not, as the NP restrictor would not be composed directly with the quantifier in the latter case as a result of restrictor minimization. The reviewer notes that this problem could be sidestepped if QPs always undergo QR, regardless of whether this is necessary to repair a type mismatch or to establish a new scope reading (May 1985, Fox 2000), but that this raises the problem of how we can show that

literally deletes the relevant parts of the copies of *a woman* – the NP complement of D in the higher copy (*woman*) and the determiner (*a*) in the lower copy -- as might be expected if an interface requires that only material interpreted at that interface should be present there. Under bare phrase structure, the higher copy of the DP thus becomes a simultaneously minimal and maximal D. Thus, we are left with a structure in which the determiner does c-command the extraposed PP, and the conditions in (6) are met:¹¹

- (7) a. [TP [DP *a woman*]_i [TP [TP [*a woman*]_i came in] [PP with three eyes]]]
 b. [TP [DP ~~*a woman*~~]_i [TP [TP [*a woman*]_i came in] [PP with three eyes]]]

What this analysis implies is that base-generated extraposition is only possible if the steps in

an example such as *Every man watched the game* involves QR of *every man*. The reviewer therefore asks why we adopt QR plus restrictor minimization rather than Fox & Nissenbaum's QR plus Late Merge. While we recognize the difficulties of the 'always QR' view, we cannot see an alternative that will capture the empirical facts we discuss below (involving cases where the extraposed adjunct does not behave as if it is contained within a copy of the host DP) and satisfy plausible locality restrictions on modification, as discussed above. We therefore assume that QR always applies, and is interpreted as proposed by Sauerland (2004): the quantifier quantifies over choice functions, and the lower copy of the quantifier is a variable over choice functions, which allows the nominal restrictor to be interpreted *in situ* as the argument of this choice function variable.

¹¹ Extraposition from a VP-internal object will differ in that the adjunct will be adjoined to VP (or *vP*) and the host DP will QR to VP (or *vP*), as assumed in Fox 2000. This allows us to preserve the locality restrictions noted by Baltin (1981) and others on the height of attachment of extraposed clauses, at least in the case of base-generated extraposition. However, as we show in section 4, base-generated extraposed clauses may arguably appear in a *lower* clause than their hosts. The restriction that extraposed clauses may not appear in a *higher* clause than their hosts appears to apply to both base-generated and movement-derived extraposition. We have no particular syntactic explanation for this, but we believe that a parsing-based account of the limitations on rightward movement seems most promising (e.g., Ackema & Neeleman 2002).

(7) are also possible.¹² We would expect them to be possible when the deletion in (7b) leaves behind an operator with clausal scope, since the semantic rationale for restrictor minimization is that only the quantifier is interpreted ‘high’. This is the case with indefinites and universal quantifiers, for example.¹³ (Non-existential) definites, on the other hand, do not have clausal

¹² Our analysis implies a violation of part (a) of Higginbotham’s (1985) Theta-Criterion (“If *X* discharges a thematic role in *Y*, then it discharges only one”; p. 561). For example, the theta-roles of the extraposed PP and the nominal restriction (*woman*) in (7) appear to be separately theta-bound by the determiner (*a*). One way of avoiding this problem would be to adopt Williams’ (1989) version of the Theta-Criterion, which merely requires every external theta-role to be assigned.

¹³ Indefinites are well-known to have exceptional scope properties; in particular, their scope is not clause-bounded, unlike that of universal quantifiers, for example. This has generally led researchers to reject the idea that such exceptional scope is derived via QR of the indefinite. Instead, the indefinite is taken to lack quantificational force of its own, and either represents a variable bound under existential closure (Kamp 1981, Heim 1982) or an individual derived via application of a choice function to the nominal predicate, with an existential quantifier over choice functions being inserted at LF at the relevant scope position (Reinhart 1997, Winter 1997). However, it is also recognized that indefinites often have ‘double scope’ properties: the existential quantification and distributive interpretation of an indefinite may be distinct (Ruys 1992, Abusch 1994). Crucially, while the existential component may scope out of its clause, the distributive component is clause-bounded. However, as noted by Reinhart (2006b), numeral indefinites may take scope over a higher indefinite, as in (i):

- (i) Three identical flags were hanging in front of two buildings.

As inverse scope here cannot be derived by existential quantification over choice functions alone (reversing the order of the existential quantifiers does not lead to a difference in interpretation), it must be the distributive operator of the lower DP (essentially a universal quantifier) that takes wide scope. Supposing that this operator is a property of the DP itself (or, rather, its head *D*), this suggests that indefinites *may* undergo QR (subject to Scope Economy). Thus, if the suggestion in fn. 11 is correct, QR of indefinites may be licensed either by wide scope of the distributive operator or by licensing an otherwise unlicensed extraposed modifier. In the latter case,

scope (assuming the non-Russellian iota-operator analysis of definites; see, e.g., Elbourne 2013:48 fn. 10). Even if a definite undergoes QR, therefore, it will not undergo restrictor minimization. This means that the definite determiner will not come to c-command the base-generated extraposed adjunct, which will therefore remain unlicensed. In turn, this means that extraposition from definites may only be derived via rightward A'-movement.¹⁴ By contrast,

therefore, we do not predict exceptional Right Roof Constraint violations in the case of extraposition from indefinites, which appears to be correct.

¹⁴ The fact that adjuncts to DP may not be *wh*-moved out of DP, as shown in (ia), has sometimes been taken as evidence against a movement analysis of adjunct extraposition (Fox & Nissenbaum 1999); compare extraction of complements, as shown in (ib). In addition, if adjunct extraposition from definite DPs involves movement of the adjunct, we might expect to see 'definiteness island' effects of the type in (ic) (Chomsky 1973, Fiengo & Higginbotham 1981):

- (i) a. *?*[From where]_i did you see [_{DP} a painting *t_i*]?
 - b. [Of whom]_i did you see [_{DP} a painting *t_i*]?
 - c. ?*[Of whom]_i did you see [_{DP} the painting *t_i*]?

Extraposition from definite DPs would also have to violate the Subject Condition, since extraposition from definite subjects is possible. A reviewer suggests one way of reconciling the movement analysis of adjunct extraposition with the restrictions in (ia,c). Sabbagh (2007) observes that right node raising must in some cases involve movement, yet does not exhibit the island effects that would be expected under a movement analysis. He proposes that what is crucial is the presence or absence of phonologically intervening material, as expressed in his Rightward Crossing Constraint (ibid.:359):

- (ii) Rightward movement of X may not cross phonologically overt material which is not contained within the cyclic node (=vP, PP) wherein X is initially merged.

Assuming that (ii) is the only 'island constraint' applying to rightward movement, we expect movement-derived extraposition to be possible in principle, as long as it does not show overt evidence of having moved out of

we expect extraposition from indefinites and universal quantifiers to be derivable, in principle, via either base-generation or rightward A'-movement (though in section 4.2 we will provide reasons to restrict it to base-generation). The main consequence of this analysis is that adjuncts extraposed from definites will also be syntactically present inside the host DP in the form of an unpronounced copy, while this will not necessarily be the case for adjuncts extraposed from quantified DPs. The analysis thus makes predictions about (non-)reconstruction, some of which we explore in the next two sections. Put simply, we expect that grammaticality violations induced by the effects of obligatory reconstruction will be found with extraposition from definites (for which only a movement-based analysis is available) but not with extraposition from indefinite/quantified DPs (where a base-generation analysis is always available).

3. CONDITION C (NON-)OBVIATION

According to our analysis of adjunct extraposition, extraposition from definites differs from extraposition from other DPs in that it must be derived by rightward A'-movement of the extraposed phrase. We therefore predict that adjuncts extraposed from definites may show obligatory reconstruction effects that other cases of adjunct extraposition do not, since the former case will always involve a copy of the adjunct within the host DP. It is by now generally assumed in the literature that A'-movement obligatorily reconstructs for certain binding and scope phenomena. Where such reconstruction effects are absent, it is standard to appeal to an explanation based on Late Merge (Lebeaux 1988, following observations by Freidin 1986). For example, *wh*-movement and focus-movement both reconstruct for

vP/VP. Of course, this (re-)raises the question of why rightward and leftward movement should differ in their island-sensitivity in this way, a question that we must leave for future research.

Condition C, as shown in (8a,b).¹⁵ However, when the R-expression is contained not in a complement but in a relative clause, as in (8c,d), the Condition C effect is not found. This can be accounted for if adjuncts, not being selected, may be merged subsequent to *wh*/focus-movement of the constituents containing them:

- (8) a. ?*[Which picture of John₁]_i did he₁ dislike *t_i*?
 b. ?*[A PICTURE of John₁]_i, he₁ disliked *t_i*, not a painting.
 c. [Which picture that John₁ had drawn]_i did he₁ dislike *t_i*?
 d. [A PICTURE that John₁ had drawn]_i, he₁ disliked *t_i*, not a painting.

Under a Late Merge analysis, then, the R-expression will be c-commanded by the coindexed pronoun prior to A'-movement in (8a,b), but not in (8c,d), accounting for the contrast. Fox & Nissenbaum (1999) appeal to this kind of analysis to account for Condition C asymmetries between complement and adjunct extraction. Thus, for example, they note (following Taraldsen 1981, Culicover & Rochemont 1990) that adjunct extraposition bleeds Condition C:

- (9) a. ??/*I showed him₁ an argument that supports John₁'s theory yesterday.
 b. I showed him₁ an argument that supports his₁ theory yesterday.

¹⁵ It is probably fair to say that the kind of Condition C effect observed in such cases is not as strong as in 'prototypical' Condition C violations where c-command between the pronoun/R-expression and a coreferential R-expression remains in the overt syntax:

- (i) *He₁ knew that John₁'s mother was angry.

We do not speculate here on the origin of this difference between the kinds of Condition C effect.

- c. I showed him₁ an argument yesterday that supports his₁/John₁'s theory.

The unacceptability of (9a) can be attributed to a Condition C violation. Double object (DP-DP) constructions are standardly taken to involve a structure in which the first object asymmetrically c-commands the second (Barss & Lasnik 1986, Larson 1988). If the relative clause modifying the second object in (9a) is contained in this object, then the R-expression *John* will be c-commanded by the first object, the pronoun *him*. Under Fox & Nissenbaum's analysis, (9c) would be derived by covert rightward QR of the host DP *an argument* followed by Late Merge of the relative clause inside the covert higher copy of *an argument*. Assuming that this copy is structurally higher than the indirect object *him* (as would be the case if QR targeted *vP* rather than the lower *VP* of a *VP*-shell), Fox & Nissenbaum's analysis can account for the Condition C obviation, since there will be no copy of *John* in the c-command domain of *him*. Complements contrast with adjuncts in that extraposition of complements does not appear to obviate Condition C effects:¹⁶

- (10) a. ??/*I showed him₁ an argument that this sentence supports John's₁ theory yesterday.
 b. ??/*I showed him₁ an argument yesterday that this sentence supports John's₁ theory.

In (10b), the CP, being a complement and hence selected by the noun *argument*, must be merged to the lower copy of *an argument* before extraposition takes place, and hence fails to avoid being c-commanded by the indirect object.

¹⁶ It has been noted in the literature that the contrast in Condition C effects involving adjuncts vs. complements is not attested for all speakers. In particular, many speakers do not find examples with an R-expression in a complement clause particularly degraded; see, e.g., Lasnik 1998, Safir 1999, McCarthy 2003. We do not pursue this matter further here as it does not directly affect our argument.

Consider what the present analysis of adjunct extraposition predicts about reconstruction for Condition C. Given that A'-movement obligatorily reconstructs, we expect rightward-movement-derived extraposition to induce Condition C effects. This is because we have argued that definite DP hosts require the extraposed adjunct to originate inside the host DP to satisfy the thematic conditions on modification. It is therefore not possible for the adjunct to undergo Late Merge in this case, since (in contrast to Fox & Nissenbaum's analysis) there is no higher copy of the DP to which the adjunct could Late Merge. By contrast, we have argued that other DP hosts are compatible with base-generated extraposition, since the host can license the extraposed adjunct under QR plus restrictor minimization. While a movement derivation of extraposition in these cases would also be expected to induce a Condition C effect, for such sentences an alternative base-generation derivation is available which permits the adjunct to be Merged outside the host DP, thereby circumventing the Condition C effect. This expectation is borne out, as shown in (11):

- (11) a. ??/*I showed him₁ an/the/every argument that supports John₁'s theory yesterday.
 b. I showed him₁ an argument yesterday that supports John₁'s theory.
 c. ??/*I showed him₁ the argument yesterday that supports John₁'s theory.
 d. ?I showed him₁ every argument yesterday that supports John₁'s theory.
 e. ?I showed him₁ few arguments yesterday that support John₁'s theory.

As (11a) shows, unextraposed relative clauses give rise to Condition C effects. Extraposition ameliorates the effect if the host DP is an indefinite, as in (11b), but not if it is a definite, as in (11c).¹⁷ With other quantifiers, the Condition C effect seems weaker, although not fully

¹⁷ Because extraposition from anaphoric definite DPs is also restricted by information-structural considerations (see section 5), some care must be taken in evaluating (11c). Specifically, we should embed this example in a

absent.¹⁸ These contrasts are problematic for any uniform movement or base-generation analysis of adjunct extraposition. If extraposition is uniformly derived by A'-movement of the extraposed phrase (e.g., Müller 1995, Buring & Hartmann 1997), we expect to see Condition C effects in all cases; if it is uniformly base-generated (e.g., Culicover & Rochemont 1990, Haider 1995), we expect to see no Condition C effects in any of the cases. The facts in (11) are also mysterious under Fox & Nissenbaum's QR/Late Merge analysis.¹⁹ If Late Merger of

context in which the relative clause answers the 'immediate question under discussion' in the sense of Roberts 1996:

- (i) A: I know you showed John several arguments, but which did you show him yesterday?
 B: ??/*Well, I showed him_i the argument yesterday that supports John_i's theory.

Compare this with a case that does not involve a potential Condition C violation:

- (ii) A: I know you showed John several arguments, but which did you show him yesterday?
 B: Well, I showed him_i the argument yesterday that supports his_i/Mary's theory.

Thanks to a reviewer for emphasizing this point.

¹⁸ While the contrasts for *every* and *few* appear less clear than for *a/some*, the relevant examples are clearly better than the cases with anaphoric definites.

¹⁹ Fox (2002:73) provides the following contrast in support of Fox & Nissenbaum's analysis:

- (i) ?I told him_i about your new argument the other day that supports John_i's theory.
 (ii) *I told you about his_i new argument the other day that supports John_i's theory.

If both (i) and (ii) involve covert QR of the possessive DP (*your new argument/his new argument*) followed by Late Merger of the relative, the contrast follows: Late Merger will bleed Condition C in (i) in the same way as it does in (9b); in (ii), on the other hand, the pronoun coindexed with the R-expression *John* is contained in the DP that undergoes QR, and so will end up c-commanding the Late-Merged DP, in violation of Condition C. This

extraposed adjuncts is possible, we would surely not expect its availability to be contingent on the definiteness or otherwise of the host DP. Furthermore, even if Late Merge could be prevented from applying when the host DP is definite, this would predict that overt movement of definite DPs never bleeds Condition C. As (12) shows, this is incorrect for focus-movement, which is just like *wh*-movement in bleeding Condition C if the R-expression is contained in an adjunct modifying the moved DP:

- (12) a. [Which picture that John₁ had drawn]_i did he₁ dislike *t_i*?
 b. [A/the PICTURE that John₁ had drawn]_i, he₁ disliked *t_i*, not a/the painting.

As noted above, examples such as (12a) have been used to support the hypothesis that relative clauses can be Late Merged to a *wh*-phrase following *wh*-movement, thus bleeding Condition C (Lebeaux 1988). As (12b) shows, the same judgments obtain with focus-movement, even if the focus-moved DP is definite. Under Fox & Nissenbaum's analysis, in which the extraposed relative is Late Merged to the covertly moved host DP, it is not clear how Late Merge could be blocked from applying in the case of extraposition from definites (to account for the fact that Condition C is not bled in (11c)) without also incorrectly blocking it from applying in (12b). Under the present analysis, the difference is simply that

contrast appears problematic for our analysis: if possessive DPs with a definite possessor are also definite (e.g., Barker 2000), then both (i) and (ii) must involve A'-movement derivations rather than base-generation, and so both should violate Condition C. However, there is another possibility that should be considered: possessives might not actually be bona fide definites, and the host DPs in both (i) and (ii) could then undergo QR and operator-variable reduction. In (i) this would license base-generated extraposition, according to our analysis, thus bleeding Condition C. In (ii), on the other hand, operator-variable reduction would at least delete *new argument* from the higher copy of the host DP at LF, potentially leaving behind *his*, which according to our analysis will then c-command the extraposed adjunct, giving rise to a Condition C violation.

the relative in (12) is not extraposed. Assuming the possibility of Late Merging the relative in such cases, the lack of Condition C effect in (12b) can be accounted for. If the relative is extraposed, however, the only option is to move the relative; thus, the relative must reconstruct into the host DP, which in (11c) is c-commanded by the pronoun.

If the crucial factor permitting base-generated extraposition is whether the host DP's determiner is an operator with clausal scope, then we further predict that definites will permit base-generated extraposition as long as they are interpreted existentially (i.e., as 'novel definites' in the sense of Heim 1982). For example, in (13) the definite DP *the water supply* must be interpreted as an existential quantifier over which the negative operator takes scope, as the sentence does not presuppose the existence of a particular water supply:

- (13) The water supply hasn't been made that can put out a manure fire. (*Language Log*, 20/01/2011)

We thus expect these kinds of 'existential' definites to behave differently from anaphoric definites with respect to extraposition. In particular, extraposition from existential definites should be able to be base-generated, and hence should be able to obviate Condition C effects, in contrast to (11c). Once again, this is correct: in examples such as (14a), the definite is interpreted in the scope of negation, which requires it to be interpreted with clausal scope. In this case, the extraposed relative may indeed contain a DP coreferential with the indirect object pronoun (compare (14b), under which an anaphoric interpretation of the definite seems preferable):

- (14) a. I couldn't give him₁ the (crucial) data yesterday that would support John₁'s theory.

- b. ??/*I was able to give him₁ the crucial data yesterday that supported John₁'s theory.

This contrast shows clearly that the semantic interpretation of the host DP is crucial to whether a Condition C effect obtains.

A reviewer notes that under our analysis, not just covert movement (QR), but also overt movement should be able to license base-generated extraposition. Further data from Culicover & Rochemont 1990 would suggest that this is the case: they note that extraposition from a *wh*-moved DP obviates Condition C effects too:

- (15) [How many girls]_i did he₁ say he₁ invited *t*₁ to the party [that John₁ dated in high school]?

There are potentially two ways in which Condition C could have been obviated here. First, the relative clause could have been base-generated higher than the pronouns and licensed by the overtly moved host DP (following restrictor minimization). Second, the relative clause could have been Late-Merged inside the *wh*-moved DP after *wh*-movement, and then the relative could itself have undergone rightward A'-movement.²⁰ We return to the question of

²⁰ A reviewer notes another interesting prediction of the analysis: that cases of overt movement where restrictor minimization is independently blocked should also not permit base-generated extraposition. One such case, provided by the reviewer, is given in (i), where the restrictor must not be minimized if the anaphor is to be bound by *John* in the matrix clause, but must be minimized (or at least interpreted in the lower position at LF) if the anaphor is to be bound by *Bill* in the embedded clause:

- (i) John₁ wondered [which pictures of himself_{1/2}]_i Bill₂ saw *t*_i.

how to disambiguate the two structures in section 5, where we consider the role of information structure.

In this section, we have shown that differences in Condition C obviation can be

Thus, (iia) should be worse than (iib), as (iia) should not permit base-generation, and hence the relative clause should be reconstructed inside the trace position of the *wh*-phrase, leading to a Condition C violation:

- (ii) a. John₁ wondered [which pictures of himself₁]_i she₂ saw *t*_i [that Mary₂ liked].
- b. John wondered [which pictures of Bill]_i she₁ saw *t*_i. [that Mary₁ liked].

While the contrast seems to us to go in the expected direction, it is very slight. However, given that these examples involve *picture*-reflexives, it is not really clear that we can use them to test the predictions in any case. It is well-known that *picture*-reflexives do not behave like locally-bound reflexives, and they have often been argued to be exempt from Condition A (e.g., Pollard & Sag 1992, Reinhart & Reuland 1993, Runner 2002). Even if this is not assumed, Hicks (2008) argues that Condition A has two parts: (i) the reflexive must be locally c-commanded by its antecedent at some point in the derivation, and (ii) the reflexive must be c-commanded (but not necessarily locally) by its antecedent at LF. This version of Condition A would be met in (i) and (iia) even if the *wh*-phrase underwent restrictor minimization.

The same reviewer notes that, given the information-structural condition on movement-derived extraposition discussed in section 5, we would expect examples like (iia) (but without the Condition C violation) to involve the same condition, as they should only be derivable via movement of the relative clause. Unfortunately, this does not seem to be the case: (iii) is perfectly fine in an ‘out-of-the-blue’ context:

- (iii) John₁ wondered [which pictures of himself₁]_i Mary saw *t*_i [that she liked].

One possible interpretation of the contrast between extraposition from definites (which imposes the information-structural condition) and the extraposition in (iii) is that it is not whether restrictor minimization takes place that determines the derivation of extraposition, but simply whether the host DP can undergo QR, with definites being unable to exercise this option (as previously proposed in Guéron & May 1984). We leave a fuller investigation of the issues raised in this footnote for future research.

accounted for under our mixed analysis of adjunct extraposition. Extraposition from non-existential definites must be derived by rightward A'-movement, and hence must reconstruct for Condition C; extraposition from other DPs may be base-generated and licensed through QR of the host, and hence bleeds Condition C. The contrasts discussed here are problematic for uniform theories of extraposition, as well as for Fox & Nissenbaum's analysis of adjunct extraposition as QR plus Late Merger.

4. SCOPE RECONSTRUCTION

4.1. Scope reconstruction of the extraposed phrase

The dual analysis of adjunct extraposition proposed here also makes a number of predictions about both the scope of the extraposed adjunct and the scope of the host DP. Consider first the scope of the extraposed adjunct. Suppose that both the host DP and the extraposed adjunct are or contain quantifier phrases. If the extraposed adjunct is base-generated in its surface position, then we expect scopal ambiguity between the two QPs, as in (16), assuming that both can undergo QR:

- (16) [Host/QP A book] got published [Adjunct about [QP every subject]]. (*a > every; every > a*)

On the other hand, the movement derivation makes a different prediction about the scope of the extraposed adjunct with respect to that of the host DP. If the A'-movement that derives adjunct extraposition from definites is licensed by focus (e.g., Rochemont 1986, Huck & Na 1990; see also section 5), then we expect to see obligatory scope reconstruction of the extraposed adjunct inside the host DP. That focus-movement in general exhibits obligatory scope reconstruction is best demonstrated by using long-distance A'-movement, in order to control for the interfering effect of (clause-bounded) QR. As the following example from

Neeleman & van de Koot 2008:145 (fn. 9) shows, a contrastively focused QP that has undergone long-distance A'-movement cannot take surface scope; that is, it must reconstruct into the embedded clause:

- (17) [Every BOOK]_i, at least one girl claimed [that Mary had read *t_i*].

(*at least one* > *every*; **every* > *at least one*)

We thus expect to see scope reconstruction in cases where an extraposed adjunct must have undergone movement.

Fiengo & Higginbotham (1981) note that a certain class of DPs, which they label 'specific', both blocks *wh*-movement out of the DP and prevents QPs embedded in the DP from taking scope over the DP (inverse linking).²¹ They interpret these two facts as connected: specific DPs block movement out of them in general and thus interfere with both *wh*-movement and QR. For example, while 'non-specific' determiners such as *a* and *two* allow both *wh*-extraction and QR (i.e. *every subject* can take wide scope), as shown in (18a) and (19a,b), 'specific' determiners such as *the* and *few* disallow both, as shown in (18b) and (19c,d):

- (18) a. What did you read a book/two books about *t*?
b. What did you read *the book/??few books about *t*?

- (19) a. A book about every subject got published. (*a* > *every*; *every* > *a*)

²¹ Fiengo & Higginbotham's use of the term 'specific' is clearly distinct from the more widely-assumed definition of specificity in terms of semantic features (e.g., Eng 1991). According to this latter definition, DPs headed by *few* would certainly not be described as specific.

- b. Two books about every subject got published. (*two* > *every*; *every* > *two*)
- c. The book about every subject got published. (*the* > *every*; **every* > *the*)
- d. Few books about every subject got published. (*few* > *every*; ?**every* > *few*)

The *about*-PPs in (18-19) are arguably adjuncts to NP (e.g., Heycock 1995).²² Consider what our analysis of adjunct extraposition predicts if the PP *about every subject* is extraposed. The determiners *a*, *two* and *few* are quantifiers with clausal scope, and so should be able to undergo QR and restrictor minimization.²³ This means that they should be able to license base-generated extraposition. On the other hand, non-existential *the* is not a quantifier with clausal scope, and so only a movement derivation of extraposition should be available in such cases. Our analysis thus predicts, first, that in (19a,b,d) extraposition should permit wide scope of *every subject*, since the PP may be base-generated outside the subject. In (19c), on the other hand, we predict that extraposition should not facilitate wide scope of *every subject*, since the PP must have undergone focus-movement from inside the subject, and hence should

²² For example, *about*-PPs obviate Condition C under *wh*-movement, in contrast to the least controversial cases of complements of nouns (examples from Heycock 1995:556-7):

- (i) [Which allegations about John_i]_j do you think he_i will deny *t_j*?
- (ii) ?? [Which fan of Madonna_i] did she_i like *t_j* best?

Sheehan (2010) argues that even *about*-PPs are complements; several of her arguments concern (sub)extraction possibilities. However, since VP/clausal adjuncts can clearly be extracted or subextracted from in principle in English (though not always), it may not be reliable to draw conclusions about the adjunct/complementhood of DP-internal PPs on the basis of extraction facts. In other cases, such as *one*-replacement and copular predication, *about*-PPs pattern differently from *of*-PPs, as Sheehan notes.

²³ Fiengo & Higginbotham (1981) seem to classify *few* as both quantificational and specific: quantificational because it gives rise to weak crossover effects, and specific because it blocks movement.

reconstruct inside its host DP for scope. In other words, *every subject* should be interpreted for scope in its base position inside the definite host DP, and since definite DPs block QR, *every subject* should only take narrow scope. These predictions are correct, as shown in (20):^{24,25}

- (20) a. A book got published about every subject. (*a* > *every*; *every* > *a*)
 b. Two books got published about every subject. (*two* > *every*; *every* > *two*)
 c. The book got published about every subject. (*the* > *every*; **every* > *the*)
 d. Few books got published about every subject. (*few* > *every*; *every* > *few*)

What the examples in (20a-c) show is that extraposition from DPs headed by *a*, *two* and *the* does not alter scope possibilities. In the first two cases this result would follow from either a movement or a base-generation derivation (although in 4.2 we will argue that only the latter is possible in these cases); in the case of *the*, it follows only from a movement derivation. *Few* is different in that extraposition appears to facilitate scope ambiguity (compare (19d) and (20d)); this follows only from the availability of a base-generation derivation.

While alternative analyses of extraposition account for certain of these facts, none can account for all of them simultaneously. Uniform A'-movement theories of extraposition predict that extraposition should not lead to scope ambiguity in (20d), since there should be reconstruction for scope in all cases. This means that 'specific' DPs in Fiengo & Higginbotham's sense (crucially including *few*-DPs) should still block wide scope of *every*

²⁴ The judgments in (19) and (20) are the authors'. All four speakers who provided judgments for us on these examples agree that all the examples with indefinites are ambiguous and that all those with definites are unambiguous, and (perhaps most crucially) that extraposition facilitates inverse scope with *few*.

²⁵ In the examples in (20a,b,d), the wide scope reading of *about every subject* seems to be facilitated by putting contrastive stress on *every*. We currently have no explanation for this.

subject. Fox & Nissenbaum's movement-plus-Late-Merge analysis makes the same predictions as a uniform A'-movement analysis. Recall that under their analysis, the host DP undergoes covert rightward movement and then the adjunct is Late Merged inside the covert higher copy. Thus, the extraposed PP is still inside a copy of the host DP, and 'specific' determiners should prevent it from undergoing QR out of this DP, while 'non-specific' determiners should not. Finally, uniform base-generation theories predict that extraposition should lead to scope ambiguity in *all* cases, since the PP could always be base-generated outside the subject and hence *every subject* could always take scope over the subject. This would incorrectly predict that (20c) will allow wide scope of *every subject*.

4.2. *The scope of the host with respect to intensional elements*

We now move on to consider how the scope of the host DP is affected by adjunct extraposition. The observation that extraposition typically fixes the scope of the host DP goes back to Williams 1974, and has been discussed in detail more recently by Fox & Nissenbaum (1999), who note certain differences between complement and adjunct extraposition with respect to the scope of the host. Specifically, while complement extraposition does not alter the scopal properties of its host DP, adjunct extraposition forces the host DP to take scope in the position where the adjunct is attached. The examples in (21) contain the intensional verb *look for*, which may in principle scope over or under an indefinite object DP. However, adjunct PP extraposition from such an object DP, as in (21a), forces the wide-scope reading of the indefinite. On the other hand, complement PP extraposition, as in (21b), allows both wide-scope and narrow-scope readings:

- (21) a. I looked for a picture very intensely by this artist.
 (*a picture* > *look for*; **look for* > *a picture*)

- b. I looked for a picture very intensely of this artist.

(a picture > look for; look for > a picture)

Fox & Nissenbaum take the contrast in (21) to support their claim that complement extraposition involves rightward A'-movement while adjunct extraposition involves covert rightward QR plus Late Merger. In the former case, the fact that the complement has moved does not impose any requirement on the host DP to undergo QR; in the latter case, the host DP is forced to undergo rightward QR in order to host the Late-Merged adjunct, and hence the host DP must take scope over the intensional verb.

In the case of the base-generated derivation of adjunct extraposition, our analysis directly captures the scope-marking effect of extraposition in (21a), because the conditions on thematic relations discussed in section 2 force the host DP to undergo QR to a position both c-commanding the extraposed adjunct and m-commanded by it. Assuming that the target of QR is higher than the intensional verb (e.g., VP), this predicts that the host DP will outscope the verb. On the other hand, because (21a) could also be derived in principle through movement of the extraposed adjunct, the example might in fact be expected to be scopally ambiguous, like (21b). Under a movement derivation of (21a), the PP would already be thematically licensed in its original position inside the host DP. Thus, no QR requirement is imposed on the object, which should be able to take scope under the intensional verb.

This potential overgeneration can be avoided if the base-generation and movement derivations of adjunct extraposition are in competition, and base-generation is the 'unmarked' option which must be chosen if possible. This kind of logic has been applied by Reinhart (2006a) to a number of phenomena (inverse scope, the relation between stress and focus, and the binding principles). The unifying factor behind all of these phenomena, according to Reinhart, is that a 'marked' operation may only apply if it leads to an interface effect (i.e., an

effect on LF and/or PF) that could not be achieved in the absence of that marked operation. We can apply this view to extraposition as follows. Both base-generation and rightward A'-movement lead to identical (overt) constituency relations and PF outputs, and hence to identical advantages from the point of view of the interfaces. For example, they achieve clause-final focus and result in light constituents preceding heavy ones, both of which have been observed to be favored cross-linguistically (e.g., Hawkins 1994). Yet base-generation is 'structurally simpler' than A'-movement, in that the former lacks one copy of the extraposed phrase that is present in the latter. In a situation where either base-generation or A'-movement is available in principle, then, we might expect base-generation to be the unmarked option, and hence to block A'-movement.²⁶

Given this assumption, we can correctly capture the difference between (21a/b). Because base-generation is available in (21a), it must be chosen, and hence the object must take wide scope with respect to the intensional verb.²⁷ If Fox & Nissenbaum are correct that complement extraposition, as in (21b), can only be derived by rightward A'-movement, then the adjunct will reconstruct inside the host at LF, thus imposing no QR requirement on the host DP.²⁸ The ungrammaticality of (22) (Fox & Nissenbaum 1999:5) can be accounted for in

²⁶ This would require 'reference set computation' in the sense of Reinhart 2006a, or a 'translocal constraint' in the sense of Müller 2011. In other words, two or more output representations which have the same meaning are compared, and the one which is structurally simpler is selected.

²⁷ For some reason, adjunct extraposition does seem to permit narrow scope of the object if the extraposed adjunct is a relative clause, as in (i):

- (i) I looked for a paper very intensely that would help me with my thesis(, but there wasn't one).
(look for > a paper possible)

The possibility of the relevant reading in (i) is problematic for Fox & Nissenbaum's analysis as well as ours.

²⁸ In other words, we are assuming that a base-generation derivation of the type we have proposed for adjunct

a similar way. The NPI indefinite must occur in the scope of the intensional verb in order to be licensed, but this conflicts with the fact that the extraposed adjunct (which must be base-generated) forces wide scope of the indefinite.²⁹

(22) *I looked for anything very intensely that will/would help me with my thesis.

If base-generation is favored over movement, then, our account of adjunct extraposition will make very similar predictions to that of Fox & Nissenbaum with respect to the scope of the host. In the following section, however, we will discuss some new observations about the scope of the host which are accounted for under our analysis but which are problematic for Fox & Nissenbaum's 'rightward QR' account, as well as for uniform base-generation and movement accounts.³⁰

extraposition from non-definites is unavailable for complement extraposition. Fox & Nissenbaum (1999), following Lebeaux (1988), argued that a Late Merger analysis of complement extraposition is unavailable because the Projection Principle forces the thematic requirements of the complement-taking noun to be satisfied prior to movement. Given our assumption that the Theta-Criterion applies at LF, we cannot adopt this explanation as such. Given the theta-marking generalizations in (5), however, a base-generation analysis of complement extraposition is ruled out because, even after QR, the noun *picture* will not m-command its argument (*of this artist*):

(i) [VP [DP a picture]_i [VP [VP looked for *t_i*] [PP of this artist]]]

While we are not aware of any clear evidence that against the movement-only analysis of complement extraposition, the issue clearly deserves further consideration.

²⁹ This presupposes that base-generation is possible (and hence obligatory) here even though it leads to a failure of NPI-licensing (i.e., the landing site of QR is too high for the NPI to be licensed).

³⁰ A reviewer draws our attention to another piece of evidence from Fox & Nissenbaum 1999 that complement

4.3. *Scope reconstruction of the host*

Recall that, under our analysis, the scope-marking effect of adjunct extraposition seen in (21a) is captured – in the case of fully quantificational DPs, at least – by the requirement for the host DP to undergo QR to a position local to the extraposed adjunct. This implies that, in a structure in which a DP occurring in clause A may normally undergo scope reconstruction into an embedded clause B, adjunct extraposition from such a DP will permit scope reconstruction of the DP into clause B if the extraposed adjunct surfaces in clause B, but will

extraposition involves movement of the complement while adjunct extraposition does not involve movement of the adjunct: the former permits ATB extraction while the latter does not (their judgments indicated):

- (i) a. I wanted to present an argument and discuss evidence very badly that what John told me is right.
- b. *I wanted to present an argument and discuss evidence very badly that John told me about.

The reviewer notes that our analysis predicts that extraposition from definite DPs should pattern with (ia) rather than (ib). However, we are not fully convinced of the generality of Fox & Nissenbaum’s observation. In particular, we think that the following example, parallel to (ib), is fully acceptable (with either indefinites or definites):

- (ii) I wanted to buy a/the bike and rent a/the car yesterday that I found on eBay.

We therefore think that this argument is not convincing support for a general structural distinction between adjunct and complement extraposition. It does give rise to something of a puzzle, however. Under Fox & Nissenbaum’s interpretation, the acceptability of (ii) would indicate that the relative clause must have ATB-moved. On the other hand, the fact that the verbs of extraposed subject relatives show plural rather than singular agreement in such cases (Perlmutter & Ross 1970) seems to favor a base-generated derivation (see, e.g., the introduction to Webelhuth et al. 2013). We leave further investigation of this issue for future research.

prevent reconstruction if the extraposed phrase surfaces in clause A or some other clause. Thus, if the DP in (23a) can be interpreted for scope in its trace position, then this should also be possible in (23b), but not in (23c) (where ‘Adjunct’ is base-generated in extraposed position):

- (23) a. [IP-A DP₁ ... [IP-B ... t₁ ...] ...]
 b. [IP-A DP₁ ... [IP-B ... t₁ ... Adjunct₁] ...]
 c. [IP-A DP ... [IP-B ... t₁ ...] ... Adjunct₁]

The situation in (23a) is arguably instantiated by A-movement. As Barss (1986) observes, A-movement may undergo scope reconstruction in cases such as (24a):

- (24) a. [Some young lady]_i seems [t_i to be likely [t_i to dance with every senator]].
 (*some* > *every*; *every* > *some*)
 b. [Some young lady]_i seems to herself_i [t_i to be likely [t_i to dance with every senator]]. (*some* > *every*; **every* > *some*)

In (24a), the raised subject may either take scope over or under the embedded universal QP *every senator*. In principle this could be because of (i) scope reconstruction of *some young lady* into the embedded clause, or (ii) QR of *every senator* into the matrix clause. Examples such as (24b) have been taken to constitute strong evidence against the latter option (e.g., Fox 2000, Lebeaux 2009), as the presence of the anaphor *herself* disambiguates scope in favor of surface scope. We can see this ‘trapping’ effect as resulting from the requirement for *some young lady* to be interpreted in its surface position at LF so that it can bind the anaphor. This suggests that *every senator* cannot QR into the matrix clause, as this should allow it to take c-

command and hence take scope over the higher copy of *some young lady* that binds the anaphor.³¹

Given that our analysis requires a local relation at LF between a base-generated extraposed adjunct and its host, we might expect extraposition to induce a similar ‘trapping’ effect on scope. That is, if the raised subject in (24a) is linked to an extraposed adjunct, the subject should be interpreted at LF in the same clause in which the extraposed adjunct is base-generated. However, the height of attachment of an extraposed adjunct will normally be potentially ambiguous; this is the case in (25b) below, for example. We thus expect that extraposition will not disambiguate scope in such cases: the extraposed adjunct will either be attached inside the embedded clause, in which case the raised subject will be able to scope under the universal, or inside the matrix clause, in which case the raised subject will necessarily scope over the universal. The context questions in (25) have been designed to favor one or the other scope interpretation: Q1 favors a wide scope reading of the raised subject, while Q2 favors a narrow scope interpretation. As expected, the examples in (25a,b) are both possible as an answer to either context question.^{32,33}

³¹ A further reason to think that ‘long QR’ is not available in such cases is that at least one potential scope reading predicted by long QR is missing: the reading where *every senator* takes scope over *some young lady* and *some young lady* takes scope over *likely*. In the examples that follow, we omit discussion of scope relations with *likely*, as ellipsis does not seem to have an effect on these, which may simply be because clausemates are scopally ambiguous (and in the following examples, *likely* is a clausemate of the raised subject).

³² The relative in (25b) is intended to modify *some young lady*, rather than *every senator*. While we believe that (25b) is grammatical under the intended interpretation, it may be difficult to access this interpretation because of the (presumably processing-related) preference for an extraposed constituent to modify the linearly closest DP.

³³ Sheehan (2010:39-40) claims that extraposition (of adjuncts or complements) disambiguates scope in favor of the narrow scope reading with respect to *likely*, providing the following examples:

- (i) a. Someone from this region is likely to be knighted. (*some* > *likely*, *likely* > *some*)

(25) Q1: Who is likely to dance with every senator at some point during the evening?

(favors $a > every$)

Q2: What kind of lady is likely to be dancing with every senator when I go in?

(favors $every > a$)

a. A lady (who comes) from New York is likely to be dancing with every

senator. ($a > every$, $every > a$)

b. A lady is likely to dance/be dancing with every senator (who comes) from

New York. ($a > every$, $every > a$)

One way to neutralize the structural ambiguity of (25b), and thus allow us to test our prediction about scope, is to use examples where the embedded clause has undergone ellipsis, stranding the extraposed adjunct. If the adjunct is not part of the constituent undergoing ellipsis, it must be in the matrix clause. We therefore expect that scope will be unambiguous

b. Someone is likely to be knighted from this region. (* $some > likely$, $likely > some$)

We think that this may be an effect of using *someone* rather than an indefinite with a nominal restriction, as the following example seems to us to be clearly scopally ambiguous:

(i) c. Some young man is likely to be knighted from this region. ($some > likely$, $likely > some$)

This scope ambiguity seems to be preserved under ellipsis:

(i) d. Some young man is ~~likely to be knighted~~ from this region. ($some > likely$, $likely > some$)

However, since this scope relation (unlike the relations between *some* and *every* in the main text examples) involves clausemates (*some* and *likely*), this may be the reason for the preservation of the scope ambiguity.

in this case: another ‘trapping’ effect. On the other hand, if the adjunct is not extraposed, then ellipsis should not disambiguate scope: the raised subject could be interpreted in its surface position or in the embedded clause at LF, just as it can in (25a). The examples in (26) bear this out: while (26a) can be used with either context question, (26b) is felicitous with Q1 but not with Q2:³⁴

- (26) Q1: Who is likely to dance with every senator at some point during the evening?
(favors $a > every$)
- Q2: What kind of lady is likely to be dancing with every senator when I go in?
(favors $every > a$)
- a. A lady (who comes) from New York is ~~likely to dance with every senator~~. ($a > every, every > a$)
- b. A lady is ~~likely to dance with every senator~~ (who comes) from New York. ($a > every, ?*every > a$)

In addition, we expect that if extraposition forces wide scope in such cases, it should give rise to ill-formedness in cases where a wide scope reading is independently impossible or disfavored. The adjective *unlikely* differs from *likely* in the required way: it seems to force a narrow scope reading of a raised indefinite subject. Thus, while both of the context questions in (27) are well-formed, the replies are only felicitous with Q2', which favors the inverse linking reading:

- (27) Q1': Who is unlikely to dance with every senator at some point during the evening?

³⁴ The judgments here are the authors'. Some speakers we consulted do not find inverse scope fully acceptable in (26a), but all of them agree that there is a contrast with (26b), in which inverse scope is unavailable.

(favors $a > \text{every}$)

Q2': What kind of young lady is unlikely to be dancing with every senator when I go in? (favors $\text{every} > a$)

- a. A lady (who comes) from New York is unlikely to dance/be dancing with every senator. ($?*a > \text{every}$, $\text{every} > a$)
- b. A lady is unlikely to dance/be dancing with every senator (who comes) from New York. ($?*a > \text{every}$, $\text{every} > a$)

We thus expect that extraposition in this case will be impossible in combination with AP-ellipsis. This is correct, as shown in (28):

(28) Q1': Who is unlikely to dance with every senator at some point during the evening?

(favors $a > \text{every}$)

Q2': What kind of lady is unlikely to be dancing with every senator when I go in? (favors $\text{every} > a$)

- a. A lady (who comes) from New York is ~~unlikely to dance/be dancing with every senator~~. ($?*a > \text{every}$, $\text{every} > a$)
- b. # A lady is ~~unlikely to dance/be dancing with every senator~~ (who comes) from New York.

Recall from section 4.2 that we are assuming that base-generation and rightward A'-movement derivations of extraposition are in competition, with base-generation blocking A'-movement wherever the former is possible. With this assumption in place, our analysis can capture the observations above. Because the extraposed PPs in (26b) and (28b) must be base-generated in the matrix clause, their host DP must take matrix scope. Consider how other

analyses fare in this regard. Uniform A'-movement analyses predict that ellipsis should not disambiguate scope even when the extraposed adjunct is stranded, as in (26/28b). This is because such analyses do not impose a particular LF locality restriction on the extraposed adjunct and its host, and so the raised subject may be reconstructed as normal. Uniform base-generation analyses correctly capture the distinctions in (26/28) in the same way as the present analysis, though they face problems with the data in 4.1. Fox & Nissenbaum's Late Merge analysis faces problems distinct from those of uniform A'-movement theories. Because they take the host DP to undergo covert QR, extraposition should always fix the scope of the host DP, as is the case for base-generated extraposition under our analysis. However, this means that extraposition should disambiguate scope not only in (26/28b) – a correct result – but also in examples where no ellipsis has taken place, such as (25b), which is incorrect. Furthermore, extraposition in (27b) should lead to ungrammaticality. The reason is that a reconstructed reading of the raised subject in (25b) or (27b) would at the very least require improper movement: extraposition (i.e., rightward QR plus Late Merger of the extraposed adjunct) would have to happen within the most deeply embedded clause for *a young lady* to take narrow scope; this would then have to be followed by overt A-movement to the matrix subject position (either of *a young lady* alone – movement of a non-constituent – or of the whole DP including the adjunct, with spellout of *a young lady* only in the highest copy). Since QR is an A'-movement, this would constitute improper movement under standard assumptions.

5. THE RELATION BETWEEN A'-MOVEMENT AND FOCUS INTERPRETATION

Extraposition from DP has frequently been described as a focus-related operation (Rochemont 1986, Huck & Na 1990). Perhaps the most accurate way of characterizing this is to say that the extraposed phrase and/or its host DP must be interpreted as the focus of the

sentence, where by ‘focus’ we mean ‘new or non-presupposed information’ in some sense. Since the focus must normally bear the main stress of the sentence, this means that the extraposed phrase or its host must bear main stress. However, the extraposed phrase and/or its host need not be the sole focus of the sentence. In other words, focus may ‘project’ from the main-stressed constituent to higher constituents, including the whole sentence, just as in the non-extraposed case.

This property is not shared by leftward focus-movement, which requires the non-moved portion of the clause to be interpreted as non-focused, or more accurately as the ‘background’ of the moved focus. In addition, the focus-moved phrase bears an additional interpretative property in addition to focus, normally described as ‘contrast’ (see, e.g., É. Kiss 1998, Molnár 2006, Neeleman et al. 2009). That is, for focus-movement to be felicitous, there must be some ‘comparison set’ in the discourse context to which the focus belongs, and in general it is asserted that the background is true of the focus and false of some other member of the comparison set. Thus, for example, focus-movement may be used in response to a yes/no-question, as in (29), where the comparison set is *{the cake, the pie}*:

- (29) A: Did Sue eat the cake?
 B: No, [The PIE]_i, Sue ate *t_i*.

However, (29B) may not generally be used to answer an all-focus question (e.g., *What did Sue eat?*) or to contradict an entire sentence (e.g., *Bill drank the whisky*). That is, the focus may not ‘project’ beyond *the pie* in (29a); or alternatively, the remnant IP ‘*Sue ate t*’ must be interpreted as the background of the focus *the pie*. If *the pie* remains *in situ*, on the other hand, focus may project from it, and thus *Sue ate the PIE* may be used to answer an all-focus question or to contradict an entire sentence.

Interestingly, extraposition from definites has been argued to differ from other types of extraposition in a way that parallels the difference between focus-movement and *in situ* focus (Ziv & Cole 1974, Huck & Na 1990, Maynell 2008). Consider the following contrast between extraposition from indefinites and from definites (Maynell 2008:112):³⁵

- (30) a. A cocktail waitress who was wearing a blond wig entered the dining room.
b. A cocktail waitress entered the dining room who was wearing a blond wig.
c. The cocktail waitress who was wearing a blond wig entered the dining room.
d. (??)The cocktail waitress entered the dining room who was wearing a blond wig.

Extraposition from definites, as in (30d), is a marked option in comparison to extraposition from indefinites, as in (30b). It has been argued that this contrast is not a difference in grammaticality as such; rather, extraposition from definites imposes particular restrictions on the information structure of the sentence. Huck & Na (1990) argue that in the case of extraposition from definites, the extraposed constituent must be a ‘contrastive focus’. For them, a focus is contrastive if it is the only constituent in the utterance that differentiates it from some previous utterance in the discourse context. For example, (30d) could be uttered if the speaker had been discussing a number of cocktail waitresses that might have entered the room; in this case the relative clause picks out one of those waitresses. As Maynell (2008) notes, Huck & Na’s contrastive focus requirement, together with the semantics of definites, predicts that the extraposed constituent in such cases must be ‘given’ with respect to the

³⁵ The intended reading of (30d) is the restrictive reading, under which the definite determiner picks out a contextually unique/presupposed member of the intersection of the set of cocktail waitresses and the set of people wearing blond wigs. Under the non-restrictive reading, under which the definite determiner merely picks out a contextually unique/presupposed member of the set of cocktail waitresses, and the relative clause asserts that this waitress is wearing a blond wig, (30d) is fully acceptable.

discourse context. Maynell shows that, in fact, a constituent extraposed from a definite need not be given as long as it answers the ‘question under discussion’ (in the sense of Roberts 1996; henceforth ‘QUD’). Consider the following example (adapted from Maynell 2008:127):

- (31) (*Setting*: Terry, a doctor, is telling Jan about her trip to a conference. One particular evening, a group of the conference participants chose to attend a football game, while several others went to a Tony Bennett concert. Terry was not feeling well, so she returned to her hotel room and went to bed early. The next morning, she noticed that some of the doctors were in a disagreeable mood.)

Terry: I’m still not certain, but I think those doctors were sulking who had been at the FOOTBALL game the night before. Paul told me later that it was a bad game, and their team lost.

Maynell argues that (31) involves the following QUD ‘stack’, with a ‘broad QUD’ provided by the discourse context and an ‘immediate QUD’ provided by the non-extraposed part of Terry’s utterance (*those doctors were sulking*):

- (32) IMMEDIATE QUD: Which doctors were sulking?

BROAD QUD: How was the conference that you attended?

Thus, the extraposed relative in Terry’s utterance in (31) (*who had been at the football game the night before*) represents an answer to the QUD represented by the rest of the clause (*those doctors were sulking*). Maynell argues that this is the condition that extraposition from definites must meet to be acceptable. To show this, she provides the example in (33), in

which the rest of the clause (*the doctors were singing and dancing*) does not represent a QUD:³⁶

(33) (*Setting: As in (31), but minus the information that some doctors were in a bad mood the next morning.*)

Terry: ??The next day, during the first coffee break, the doctors were singing and dancing who had been at the Tony BENNETT concert.

In fact, this is essentially the same requirement that applies in cases of leftward A'-movement of constituents bearing main stress. Thus, (29a) is felicitous only if there is an 'immediate QUD' *What did Sue eat?*. This has been expressed in the literature in terms of obligatory 'focus-background' mapping. For example, Neeleman & van de Koot (2008) argue that A'-movement of a focus is licensed not by the focus interpretation itself, but by the interpretation of the remainder of the clause as the background of that focus. A background in this sense is a predicate which, when applied to the focus, yields a proposition: thus, in (29a), the background of the focus 'the pie' would be the predicate ' λx .Sue ate x'. Thus, Maynell's 'immediate QUD' requirement can be expressed in terms of obligatory backgrounding.³⁷

³⁶ Maynell claims that Huck & Na's contrastive focus condition would incorrectly predict (33) to be acceptable, but we disagree: the remainder of the clause apart from the extraposed relative is not found in some previous utterance, and so the relative would not count as a contrastive focus in this case. However, Maynell does provide further examples which Huck & Na's condition could not account for (see especially Maynell 2008:130-134).

³⁷ This view of the licensing of A'-movement is an instance of the 'interface-driven' approach to movement, which regards syntactic operations as costly (and hence banned) unless they lead to an 'interface effect' (e.g., Reinhart 2006a, Chomsky 2008). Neeleman & van de Koot argue that the interface effect in question here is a more direct mapping between syntax and information structure: the background of the focus constitutes a syntactic constituent after A'-movement, but not (normally) prior to it.

Recall that our analysis of extraposition from definites forces it to be derived by rightward A'-movement of the extraposed constituent. One long-standing problem associated with analysing extraposition in terms of movement has been the nature of the trigger: while *wh*-movement clearly involves moving at least an entire [+wh] constituent, and leftward focus-movement involves moving at least an entire [+focus] constituent, extraposition appears to allow movement of a subconstituent of a [+focus] constituent. In other words, extraposition permits focus projection, unlike other cases of focus-movement. We can now see that extraposition is not as exceptional as it seems: where it must be derived via rightward A'-movement, essentially the same condition applies as with leftward focus-movement. Where extraposition may be base-generated – in cases where the host DP undergoes QR and operator-variable reduction – there is no movement that needs to be licensed, and hence no information-structural condition applies.

Our analysis predicts that not only indefinites, but universal QPs, will allow base-generated extraposition and hence focus projection. That universals easily allow extraposition was noticed as early as Williams 1974:200-201, and can be illustrated by comparing the examples in (30) above with those in (34), the relevant context being one in which the hearer does not know that anyone entered the dining room:^{38,39}

³⁸ That extraposition from universal QPs is possible in an all-focus context shows that the relevant contrast is not between 'assertive' (essentially, non-restrictive) and 'defining' (essentially, restrictive) relatives, which was Ziv & Cole's (1974) account of the definite-indefinite contrast. The relative in (34b) must be interpreted restrictively, yet may be extraposed in such contexts.

³⁹ It is true that (34b) is not quite perfect, presumably because of the length of the intervening material. It is important to note that this is not because the host is a universal QP: indefinite hosts also show this effect when the relative is clearly interpreted restrictively, as in the preferable interpretation of (i):

(i) At least one cocktail waitress entered the dining room who was wearing a blond wig.

- (34) a. Every cocktail waitress who was wearing a blond wig entered the dining room.
 b. Every cocktail waitress entered the dining room who was wearing a blond wig.

Thus, a dual analysis of adjunct extraposition is capable of accounting for an otherwise puzzling difference between extraposition from definites and from other types of DP: the former requires the extraposed constituent to be the answer to the QUD represented by the remainder of the clause, while the latter imposes no such requirement. This follows from the structural distinction between A'-movement and base-generation: A'-movement imposes an interface licensing requirement (obligatory backgrounding), while base-generation does not.

We can now return to a question that was raised in section 3 but only partially answered: if QR can license base-generated extraposition, can overt movement also do so? We noted that, while extraposition from a *wh*-moved DP can obviate Condition C effects, this could either be due to base-generation or to Late Merger of the adjunct after *wh*-movement followed by rightward A'-movement of the adjunct to extraposed position.⁴⁰ We will end this section by noting some contrasts in the possibility of extraposition from topic/focus-moved DPs, contrasts which provide further support for our dual analysis of adjunct extraposition. It is generally accepted that in English, a non-*wh* DP that undergoes A'-movement to the left

⁴⁰ Note that this use of Late Merge in the classic sense of Lebeaux 1988 should be distinguished from the use of Late Merge in Fox & Nissenbaum's (1999) analysis of extraposition. It is consistent to assume the former (in order to account for lack of reconstruction effects with adjuncts in *wh*-moved constituents) while rejecting Fox & Nissenbaum's idea that extraposition is derived via QR of the host DP plus Late Merge of the adjunct to the covert higher copy of the host DP. This does, however, raise the question of what should prevent Late Merge to the higher copy of a QR-ed DP. One answer to this, though maybe not a particularly insightful one, could be that null DPs in general resist overt modification (for example, PRO and *pro* cannot be modified by *only* or *too*).

periphery may be interpreted as a focus or a (contrastive) topic (e.g., Prince 1981). While a focus evokes a set of propositions answering a single *wh*-question under discussion (QUD), a contrastive topic evokes a set of sets of propositions, each of which answers a distinct *wh*-QUD, with each of these QUDs being subquestions of a multiple *wh*-QUD (e.g., Büring 2003). The contrastive topic then indicates a shift in the sub-QUD being considered. For example, in (35), *the salad* is a contrastive topic because it shifts from the QUD *Who ate the beans?* to the QUD *Who ate the salad?*, with both of these QUDs being subordinate QUDs of the superordinate question *Who ate what?* The focus *Mary* then answers the new subordinate QUD:

- (35) Q: Who ate the beans?
 A: Well I don't know, but [the salad]_i, MARY ate *t_i*.

It is possible to create a context where a single DP modified by a relative clause can be split into contrastive topic and focus. For example, if there are a number of food items on a buffet table (e.g., chicken, salad, beans, ...), the following dialogue is possible, either with the DP *in situ*, as in (36a), or with A'-movement of the DP plus relative clause extraposition, as in (36b). That the DP including the relative cannot be in fronted position, as in (36c), shows that this constituent is not simply a single focus, but consists of a separate topic and focus:

- (36) Q: Who brought the beans that Mary ate?
 a. Well, I don't know, but she ate some salad that BILL brought.
 b. Well, I don't know, but [some salad]_i she ate *t_i* that BILL brought.
 c. #Well, I don't know, but [some salad]_i that BILL brought she ate *t_i*.

Interestingly, though, fronting plus extraposition does not appear to be possible in this kind of context if the host DP is definite, as in (37):

- (37) Q: Who brought the beans that Mary ate?
- a. Well, I don't know, but she ate the salad that BILL brought.
- b. #Well, I don't know, but [the salad]_i she ate *t_i* that BILL brought.

This distinction between indefinites and definites in fact follows from our dual derivation analysis of extraposition together with the information-structural constraint on A'-movement that we have discussed in this section and a separate information-structural constraint discussed by Neeleman & van de Koot (2008). They note that, while the linear ordering of contrastive topics and foci is free if the two constituents are in situ, a fixed ordering emerges if one (or both) of them move(s). Specifically, while a topic can A'-move to a position c-commanding a focus, a focus cannot A'-move to a position c-commanding a topic. This can be shown by the following English examples:

- (38) Q1: Who ate the beans?
- a. Well, I don't know, but [the salad]_i, MARY ate *t_i*.
- Q2: What did Mary eat?
- b. #Well, I don't know, but [the BEANS]_i John ate *t_i*.

In (36b) above, base-generated extraposition should be possible, assuming that the A'-moved topic DP can undergo restrictor minimization (either in its surface position or after a further operation of QR). This being the case, the relative clause, despite being a focus c-commanding a topic, did not A'-move to that position and hence does not violate Neeleman &

van de Koot's generalization. On the other hand, base-generated extraposition should not be possible in (37b), as the A'-moved topic is definite and hence cannot undergo restrictor minimization. Thus, in this case the relative clause must have A'-moved, in which case a focus (the relative clause) A'-moves to a position c-commanding a topic (the host DP), violating Neeleman & van de Koot's generalization. That this is the correct account of the contrast is suggested by the fact that, if the host DP is instead interpreted as a contrastive focus, then extraposition of the relative (also interpreted as a contrastive focus) becomes possible, as shown in (39b):

- (39) Q: Mary ate the beans that John brought, didn't she?
- a. No, she ate the SALAD that BILL brought.
- b. No, [the SALAD]_i she ate *t_i* that BILL brought.

Here, Neeleman & van de Koot's generalization does not apply, as there is no contrastive topic; therefore A'-movement of the relative out of the host DP is licit.⁴¹ Finally, we note that,

⁴¹ Neeleman & van de Koot do discuss a different type of information-structural restriction which only applies to foci: a 'subordinate' focus may not cross a 'superordinate' focus. This accounts for data such as the following in Dutch:

- (i) Q: Wie lezen er heden ten dage eigenlijk nog dichters?

'Who still reads poets these days?'

A: #PIET leest veel dichters, maar ik geloof dat [_{DP} alleen BLOEM_{sub}] FRED_{sup} *t_{DP}* leest.

Peter reads many poets, but I believe that only Bloem Fred reads

Here, the question under discussion is essentially 'Who reads which poets?', with the two foci corresponding to the two *wh*-phrases. On the other hand, the foci in (39) seem to be behaving as a single focus: because of the restrictive modification contributed by the relative clause, *the salad* does not have a referent independently of

in the acceptable cases of extraposition from an A'-moved DP, Condition C effects can be obviated:

- (40) a. ... [some salad]_i she₁ ate *t_i* that Mary₁ got from BILL.
b. ... [the SALAD]_i she₁ ate *t_i* that Mary₁ got from BILL.

As we noted in section 3, this is expected whether or not extraposition is derived via base-generation or rightward A'-movement, assuming the independently required operation of Late Merge. In the base-generation case, available in (40a), the relative clause can be base-generated in extraposed position, and is thus never in the c-command domain of the pronoun. In the A'-movement case, the only option available in (40b), the relative clause can be Late Merged inside the moved DP after focus-movement of this DP, once again avoiding c-command by the pronoun.

6. CONCLUSION

This paper has argued for a dual derivation of adjunct extraposition from DP, according to which the adjunct may either be base-generated in its extraposed position or undergo rightward A'-movement from inside its host DP. This choice is not free: base-generation is possible only if the DP is of the type that undergoes QR and restrictor minimization (i.e., DPs headed by a quantifier with clausal scope). This has consequences for reconstruction: we only expect reconstruction effects where extraposition is derived by movement. We have shown that while Condition C effects are obviated in the case of extraposition from indefinites and universals (a well-known observation), they are not obviated in the case of extraposition from

the relative clause, and thus answers no question under discussion on its own. We thus do not expect Neeleman & van de Koot's restriction to apply here.

non-existential indefinites. Furthermore, our analysis can account for two types of contrast in scope possibilities. First, extraposition from definite DPs does not facilitate wide scope of the adjunct, while extraposition from *few*-DPs does. Second, ellipsis stranding the extraposed adjunct forces the adjunct to take wide scope, in contrast to the ambiguity that is present if no extraposition takes place. Our final piece of evidence came from information structure: the observation that extraposition from non-existential definites is restricted by information structure in a way that extraposition from other types of DPs is not. That is, extraposition from definites is only felicitous if the extraposed adjunct is interpreted as an answer to the question under discussion represented by the remainder of the clause.⁴²

References

⁴² A reviewer notes another prediction of the analysis, which is that extraposition from two singular DPs of a relative with a plural verb (a phenomenon originally observed by Perlmutter & Ross (1970)) should be possible only in the case of base-generated extraposition, as there should be no underlying source for the A'-movement derivation. We think that the contrast (though subtle) goes in the right direction:

- (i) a. A man entered the room and a woman left who have written a book together.
- b. ?The man entered the room and the woman left who have written a book together.

A potential problem here (and for any movement or deletion approach to adjunct extraposition) is that we might expect an across-the-board derivation to be possible, resulting in singular agreement on the relative clause verb, but this is clearly not the case (even controlling for the focus requirement discussed in section 5):

- (ii) *The man entered the room and the woman left who has written a book on extraposition.

Such facts are familiar from right node raising constructions, which are normally analyzed in terms of movement, ellipsis or multidominance; see, e.g., Wilder (1997), de Vries (2009), Larson (2012).

- Abusch, D. 1994. The scope of indefinites. *Natural Language Semantics* 2:83–136.
- Ackema, P. & Neeleman, A. 2002. Effects of short-term storage in processing rightward movement. In *Storage and computation in the language faculty*, eds. S. Nooteboom, F. Weerman & F. Wijnen, 219–256. Dordrecht: Kluwer.
- Andrews, A. 1975. Studies in the syntax of relative and comparative clauses. Ph.D. dissertation, MIT.
- Aoun, J. & Sportiche, D. 1983. On the formal theory of government. *The Linguistic Review* 2:211–236.
- Baltin, M. 1981. Strict bounding. In *The logical problem of language acquisition*, eds. C. L. Baker & J. J. McCarthy, 257–295. Cambridge, MA: MIT Press.
- Baltin, M. 2006. Extraposition. In *The Blackwell companion to syntax, volume 2*, eds. M. Everaert & H. van Riemsdijk, 237–271. Malden, MA: Blackwell.
- Barker, C. 2000. Definite possessives and discourse novelty. *Theoretical Linguistics* 26:211–227.
- Barss, A. 1986. Chains and anaphoric dependence. Ph.D. dissertation, MIT.
- Barss, A. & Lasnik, H. 1986. A note on anaphora and double objects. *Linguistic Inquiry* 17:347–354.
- Bianchi, V. 2000. The raising analysis of relative clauses: a reply to Borsley. *Linguistic Inquiry* 31:123–140.
- Büring, D. 2003. On D-trees, beans, and B-accent. *Linguistics and Philosophy* 26:511–545.
- Büring, D. & Hartmann, K. 1997. Doing the right thing. *The Linguistic Review* 14:1–42.
- Chomsky, N. 1973. Conditions on transformations. In *A festschrift for Morris Halle*, eds. S. Anderson & P. Kiparsky, 232–286. New York: Holt, Rinehart and Winston.
- Chomsky, N. 1981. *Lectures on government and binding*. Dordrecht: Foris.
- Chomsky, N. 1993. A minimalist program for linguistic theory. In *The view from Building 20:*

- Essays in linguistics in honor of Sylvain Bromberger*, eds. K. Hale & S. J. Keyser, 1–52. Cambridge, MA: MIT Press.
- Chomsky, N. 2008. On phases. In *Foundational issues in linguistic theory: Essays in honor of Jean-Roger Vergnaud*, eds. R. Freidin, C. P. Otero & M. L. Zubizarreta, 133–166. Cambridge, MA: MIT Press.
- Culicover, P. W. & Rochemont, M. S. 1990. Extraposition and the Complement Principle. *Linguistic Inquiry* 21:23–47.
- É. Kiss, K. 1998. Identificational focus vs. information focus. *Language* 74:245–273.
- Elbourne, P. 2013. *Definite descriptions*. Oxford: Oxford University Press.
- Enç, M. 1991. The semantics of specificity. *Linguistic Inquiry* 22:1–25.
- Ernst, T. 1994. M-command and precedence. *Linguistic Inquiry* 25:327–335.
- Fiengo, R. & Higginbotham, J. 1981. Opacity in NP. *Linguistic Analysis* 7:395–421.
- Fox, D. 2000. *Economy and semantic interpretation*. Cambridge, MA: MIT Press.
- Fox, D. 2002. Antecedent-contained deletion and the copy theory of movement. *Linguistic Inquiry* 33:63–96.
- Fox, D. & Nissenbaum, J. 1999. Extraposition and scope: a case for overt QR. *West Coast Conference on Formal Linguistics (WCCFL)* 18:132–144.
- Freidin, R. 1986. Fundamental issues in the theory of binding. In *Studies in the acquisition of anaphora. Vol. 1, Defining the constraints*, ed. Barbara Lust, 151–188. Dordrecht: Reidel.
- Guéron, J. & May, R. 1984. Extraposition and Logical Form. *Linguistic Inquiry* 15:1–31.
- Haider, H. 1995. Downright down to the right. In *On extraction and extraposition in German*, eds. U. Lutz & J. Pafel, 245–271. Amsterdam: John Benjamins.
- Hawkins, J. A. 1994. *A performance theory of order and constituency*. Cambridge: Cambridge University Press.

- Heim, I. 1982. The semantics of definite and indefinite noun phrases. Ph.D. dissertation, University of Massachusetts, Amherst.
- Heim, I. & Kratzer, A. 1998. *Semantics in generative grammar*. Malden, MA: Blackwell.
- Heycock, C. 1995. Asymmetries in reconstruction. *Linguistic Inquiry* 26:547–570.
- Hicks, G. 2008. Why the binding theory doesn't apply at LF. *Syntax* 11:255–280.
- Higginbotham, J. 1985. On semantics. *Linguistic Inquiry* 16:547–593.
- Hornstein, N. 2001. *Move! A minimalist theory of construal*. Malden, MA: Blackwell.
- Huck, G. & Na, Y. 1990. Extraposition and focus. *Language* 66:51–77.
- Hunter, T. & Frank, R. 2014. Eliminating rightward movement: extraposition as flexible linearization of adjuncts. *Linguistic Inquiry* 45:227–267.
- Kamp, H. 1981. A theory of truth and semantic representation. In *Formal methods in the study of language*, eds. J. Groenendijk, T. Janssen & M. Stokhof, 277–322. Amsterdam: Mathematische Centrum.
- Kayne, R. S. 1994. *The antisymmetry of syntax*. Cambridge, MA: MIT Press.
- Kayne, R. S. 2002. Pronouns and their antecedents. In *Derivation and explanation in the minimalist program*, eds. S. D. Epstein & T. D. Seely, 133–166. Malden, MA: Blackwell.
- Kiss, T. 2005. Semantic constraints on relative clause extraposition. *Natural Language and Linguistic Theory* 23:281–334.
- Koster, J. 1978. *Locality principles in syntax*. Dordrecht: Foris.
- Koster, J. 2000. Extraposition as parallel construal. Ms., University of Groningen.
- Larson, B. 2012. A dilemma with accounts of right node raising. *Linguistic Inquiry* 43:143–150.
- Larson, R. K. 1988. On the double object construction. *Linguistic Inquiry* 19:335–391.

- Lasnik, H. 1998. Some reconstruction riddles. In *Proceedings of the 22nd Annual Penn Linguistics Colloquium*, eds. A. Dimitriadis, H. Lee, C. Moisset & A. Williams, 83–98. *University of Pennsylvania Working Papers in Linguistics* 5.1. Philadelphia: University of Pennsylvania, Penn Linguistics Club.
- Lebeaux, D. 1988. Language acquisition and the form of the grammar. Ph.D. dissertation, University of Massachusetts, Amherst.
- Lebeaux, D. 2009. *Where does Binding Theory apply?* Cambridge, MA: MIT Press.
- May, R. 1985. *Logical Form: Its structure and derivation*. Cambridge, MA: MIT Press.
- Maynell, L. A. 2008. Discourse constraints on extraposition from definite NP subjects in English. *Ohio State University Working Papers in Linguistics* 58:110–137.
- McCarthy, C. 2003. Reconstruction and Condition C: Some unexpected symmetries. In *McGill Working Papers in Linguistics* 18, eds. T. Grüter & T. Takehisa, 25–44. Montreal: McGill University, Department of Linguistics.
- Molnár, V. 2006. On different kinds of contrast. In *The architecture of focus*, eds. V. Molnár & S. Winkler, 197–233. Berlin: Mouton de Gruyter.
- Müller, G. 1995. On extraposition & successive cyclicity. In *On extraction and extraposition in German*, eds. U. Lutz & J. Pafel, 213–243. Amsterdam: John Benjamins.
- Müller, G. 2011. *Constraints on displacement: A phase-based approach*. Amsterdam: John Benjamins.
- Neeleman, A. & Koot, H. van de. 2002. The configurational matrix. *Linguistic Inquiry* 33:529–574.
- Neeleman, A. & Koot, H. van de. 2008. Dutch scrambling and the nature of discourse templates. *Journal of Comparative Germanic Linguistics* 11:137–189.
- Neeleman, A., Titov, E., Koot, H. van de & Vermeulen, R. 2009. A syntactic typology of topic, focus and contrast. In *Alternatives to cartography*, ed. J. van Craenenbroeck,

- 15–51. Berlin: Mouton de Gruyter.
- Neeleman, A. & Weerman, F. 1999. *Flexible syntax: A theory of case and arguments*. Dordrecht: Kluwer.
- Perlmutter, D. M. & Ross, J. R. 1970. Relative clauses with split antecedents. *Linguistic Inquiry* 1:350.
- Pollard, C. & Sag, I. 1992. Anaphors in English and the scope of the binding theory. *Linguistic Inquiry* 23:261–305.
- Prince, E. F. 1981. Topicalization, focus-movement, and Yiddish-movement: A pragmatic differentiation. *Berkeley Linguistics Society (BLS)* 7:249–264.
- Reeve, M. 2012. *Clefts and their relatives*. Amsterdam: John Benjamins.
- Reinhart, T. 1980. On the position of extraposed clauses. *Linguistic Inquiry* 11:621–624.
- Reinhart, T. 1997. Quantifier scope: How labor is divided between QR and choice functions. *Linguistics and Philosophy* 20:335–397.
- Reinhart, T. 2006a. *Interface strategies: Optimal and costly computations*. Cambridge, MA: MIT Press.
- Reinhart, T. 2006b. Scope shift with numeral indefinites: Syntax or processing? In *Non-definiteness and plurality*, eds. S. Vogeleer & L. Tasmowski, 291–310. Amsterdam: John Benjamins.
- Reinhart, T. & Reuland, E. 1993. Reflexivity. *Linguistic Inquiry* 24:657–720.
- Roberts, C. 1996. Information structure in discourse: towards an integrated formal theory of pragmatics. *Ohio State University Working Papers in Linguistics* 49.
- Rochemont, M. S. 1978. A theory of stylistic rules in English. Ph.D. dissertation, University of Massachusetts, Amherst.
- Rochemont, M. S. 1986. *Focus in generative grammar*. Amsterdam: John Benjamins.
- Ross, J. R. 1967. Constraints on variables in syntax. Ph.D. dissertation, MIT.

- Runner, J. 2002. When minimalism isn't enough: an argument for argument structure. *Linguistic Inquiry* 33:172–182.
- Ruys, E. 1992. The scope of indefinites. Ph.D. dissertation, University of Utrecht.
- Sabbagh, J. 2007. Ordering and linearizing rightward movement. *Natural Language and Linguistic Theory* 25:349–401.
- Safir, K. 1999. Vehicle change and reconstruction in A'-chains. *Linguistic Inquiry* 30:587–620.
- Sauerland, U. 2004. The interpretation of traces. *Natural Language Semantics* 12:63–127.
- Sheehan, M. 2010. Extraposition and antisymmetry. *Linguistic Variation Yearbook*, 201–251.
- Taraldsen, T. 1981. The theoretical interpretation of a class of marked extractions. In *Theory of markedness in generative grammar: Proceedings of the 1979 GLOW Conference*, eds. A. Belletti, L. Brandi & L. Rizzi, 475–516. Pisa: Scuola Normale Superiore.
- Truckenbrodt, H. 1995. Extraposition from NP and prosodic structure. *North East Linguistic Society (NELS)* 25:503–517.
- Vries, M. de 2009. On multidominance and linearization. *Biolinguistics* 3:344–403.
- Webelhuth, G., Sailer, M. & Walker, H. eds. 2013. *Rightward movement in a comparative perspective*. Amsterdam: John Benjamins.
- Wilder, C. 1995. Rightward movement as leftward deletion. In *On extraction and extraposition in German*, eds. U. Lutz & J. Pafel, 245–271. Amsterdam: John Benjamins.
- Wilder, C. 1997. Some properties of ellipsis in coordination. In *Studies on Universal Grammar and typological variation*, eds. A. Alexiadou & T. A. Hall, 59–107. Amsterdam: John Benjamins.
- Williams, E. 1974. Rule ordering in syntax. Ph.D. dissertation, MIT.
- Williams, E. 1980. Predication. *Linguistic Inquiry* 11:203–238.

- Williams, E. 1989. The anaphoric nature of θ -roles. *Linguistic Inquiry* 20:425–456.
- Winter, Y. 1997. Choice functions and the scopal semantics of indefinites. *Linguistics and Philosophy* 20:399–466.
- Wittenburg, K. 1987. Extraposition from NP as anaphora. In *Discontinuous constituency*, eds. G. Huck & A. Ojeda, 428–445. New York: Academic Press.
- Ziv, Y. & Cole, P. 1974. Relative extraposition and the scope of definite descriptions in Hebrew. *Chicago Linguistic Society (CLS)* 10:772–786.