Neglect

Dominique Sportiche
UCLA
Dominique.Sportiche@ucla.edu

One central idea behind the minimalist program is parsimony, both for methodological reasons and for empirical reasons. Methodologically, parsimony is just Ockham's razor. Empirically, it seems that various mechanisms plausibly involved in describing the properties of syntactic structures or of their interpretation involve notions of Economy (closest attract, scope economy, closest binder (rule H), etc...), suggesting parsimonious computation.
Implementing this program, the interface between syntax and semantics or syntax and phonetics should in the optimal case be maximally parsimonious, hence trivial: lexical semantics/phonology should provide the properties of the atoms of semantic/phonological computation, an independently justified syntax should provide the structural relations between these atoms, and nothing else should be needed.
Current theories are removed from this optimum.
This article attempts to simplify, possibly eliminate some theoretical enrichments or specific interface mechanisms by critically evaluating their necessity, hoping for a more parsimonious approach, particularly at the syntax/interpretation interface.

Calling LF the syntactic input to semantic interpretation, we start with the standard assumption that LFs must be interpretable by the normal compositional rules of semantic interpretation. These general considerations say little: they allow for any property or a syntactic representation to be deleted as long as the result of such deletion is an interpretable structure. To prevent deletion of interpretable material, we adopt Chomsky's 1995 Principle of Full interpretation (FI) which requires that everything be interpreted at the interfaces, and therefore also that LF-uninterpretable properties be neutralized (checked).

The key general proposal we make is based on the observation that FI is already rightly, and routinely albeit often implicitly, assumed to apply to syntactic objects rather than their occurrences (for example to a chain – a set of movement copies - rather individual copies). This conception derives the existence of interpretive **Neglect**[1], that is the possibility of interpretively ignoring up to all **occurrences** of an interpretable syntactic object but one.[2]
I will argue that **Neglect** subsumes a number of mechanisms postulated to handle the syntax/semantics connection. More concretely, consider the following sentences from the point of view of the syntax-semantics interface:

(1) Every boy will leave
(2) New solutions seem to be needed
(3) * [Which pictures of Picasso$_j$] did he$_j$ buy t
(4) [Some descriptions of Picasso$_j$] seemed to him$_j$ to be t false
(5) [How many friends of hers$_j$]$_i$ did you introduce every girl$_j$ to t_i?

[1] Thanks to Naama Friedman, a discussion with whom led me to this analogy with a behavioral syndrome involving the inability to report, respond, or orient to actually perceived visual stimuli, as if they were not there.
[2] One occurrence that must be interpreted (if the object has semantic content) is the lowest element of a chain (the lowest trace of movement) because of the very widely assumed principle, called here Local Predicate Saturation (see section 3.1).

(6) * [Which pictures of Picasso$_j$] did he$_j$ buy t
(7) [Which pictures that Picasso$_j$ liked] did he$_j$ sell t

It has been argued that the mapping from syntactic structures to interpretation should appeal to a variety of special mechanisms or assumptions: **Trace conversion** (Fox, 2002) for most of these examples, **PF subject raising** (Elbourne and Sauerland, 2002 and references therein) for the second, late **NP insertion** (Lebeaux, 1991) or **Wholesale Late Merger** (Takahashi and Hulsey, 2009) for the contrast between the third and the fourth, Chomsky's 1995 **Preference Principle** for reconstruction (**Minimize Operator Restriction** if possible, see e.g. Elbourne and Sauerland, 2002) for the fifth and the seventh, and **Late Adjunct Insertion** (which I will call **Late Adjunct Merger**) (Lebeaux, 1991) as well as two distinct ways (**Head Raising and Matching**) to build relative clauses to explain the contrast between the sixth and the seventh.

I will show that Neglect can derive the facts handled by these mechanisms and can parsimoniously replace all of them. I will also show how Neglect subsumes a particular theory of Vehicle Change invoked e.g. in May and Fiengo (1994) or Safir (1999).

Summary:

In section 1, I first show that some version of Neglect – selective blindness at the interface - is needed to handle the neutralization of copies of material that would lead to an interface crash. Such cases mean that some properties would have to survive at LF unless the Full Interpretation Principle is understood as applying to syntactic objects rather than their occurrences. As consequence, the existence of Neglect is predicted, and the problem becomes how to properly constrain it, how the selectivity of this interface blindness should be characterized.
I then propose a reinterpretation of Fox Trace conversion rule needed to treat traces as bound variables in terms of Neglect.
I conclude with an abstract overview of the following sections in terms of Total, and Partial Neglect possibilities.

Section 2 discusses total reconstruction. I illustrate, as is fairly standard, that it simply is Neglect of a high movement copy. Looking first at A-movement, I examine Elbourne and Sauerland's 2002 alternative approach to total reconstruction in terms of PF movement, which I show suffers from difficulties that Neglect does not face. In addition, I show that part of their reasoning is based on the idea that wh-movement can partially but not totally reconstruct, which I conclude is unconvincing. Both total and partial reconstruction of wh-movement can be handled by Neglect.

Section 3 discusses how to constrain Neglect.
In the cases of Total Neglect, it has long been recognized, Total Neglect (Trace deletion) must be prevented from applying to lowest copies: a head needs its complement(s) locally at LF. This is an independently requirement: predicates must be locally saturated by their arguments at LF and lowest copies of arguments can thus not be (totally) neglected.
I next discuss Partial Neglect. I show how to subsume Takahashi and Hulsey's 2009 Wholesale Late Merger, under a kind of Partial Neglect that amounts to Vehicle change. I propose to constrain the application of such Partial Neglect by the Binding Theory, in order to handle the A-bar/A-movement asymmetry with respect to Condition C bleeding.

Section 4 focuses on cases of partial reconstruction, which I analyze as Partial Neglect.
The bulk of this section discusses the complement/adjunct asymmetry under reconstruction – focusing on relative clause adjuncts - which led Lebeaux (1991) to postulate Late Adjunct Merger. Building on a substantial literature, I show that this asymmetry is not a complement/adjunct

asymmetry but rather an argument/predicate distinction, and how it can be handled with Neglect and other independently justified results.

In section 5, I discuss a variety of cases which have been claimed to involve Late merger and show how they can be handled by Neglect. I start with Fox and Nissenbaum's 1999 treatment of Extraposition, and its descendants: Hulsey and Sauerland (2006), Bhatt and Pancheva (2004) on comparatives and result clauses, Takahashi and Hulsey (2009) on Head raising relatives and Fox (2002) on Antecedent Contained Ellipsis.

1 Introduction

We start from the following general assumptions.
(i) Chomsky's principle of Full interpretation requires everything present in a syntactic representation at some interface to be interpreted at this interface.
(ii) Movement is simply Remerge so that a trace is an exact copy of what has moved.
(iii) Properties uninterpretable at some interface must have been neutralized and the only neutralization mechanism is pairing with an appropriate item (e.g. feature checking).

1.1 Independent Motivations for Neglect: Uninterpretable features

We first consider a technical problem, as its resolution points to a very general property of the syntax/semantics (and the syntax/phonology) interface also motivating Neglect.
Consider the sentence in (8a), assuming it has the LF representation in (8b) consistent with the copy theory of traces (indices added for ease of reference), where the DP *John* has cyclically raised from its VP internal position to the TP periphery of the infinitive $John_1$, on to the TP periphery of the main clause $John_2$.

(8) a. John appears to have left
b. $John_2$ T_2 appears [$John_1$ T_1 have $John_0$ left]]

As the structure is progressively built, $John_0$ must enter into some relation (e.g. agreement) with T_1, and move to $John_1$. Next $John_1$ must enter into some relation with T_2 (agreement), and raise to $John_2$. Agreeing with T_2 is meant in part to neutralize the uninterpretable Nominative Case feature of *John*. But at the point of Agreeing with T_2, there are two identical occurrences of *John* (due to the copy theory of traces), $John_1$ and $John_0$ and only one of them is checked by T_2.[3] Chomsky's 1995 Full Interpretation Principle (FI), a principle of Economy, bans the presence of pieces of structures illegible at the interpretive interfaces, here an uninterpretable feature, as FI requires that literally everything fed to LF be interpreted:

(9) **Principle of Full Interpretation (version 1) :** Interpret everything

Even though $John_0$ still contains a semantically uninterpretable Case feature illegible at LF, the resulting structure is well formed. How come? Some general mechanism must insure well formedness. What is needed is simple: such a feature can be ignored, because one of its copies (in $John_1$) has been checked. How exactly should this ignoring mechanism, call it **Neglect**, be specified? The simplest specification is as follows:

[3] A way around this would be to use e.g. simultaneous Agree between T2 and T1 and *John* in the position $John_0$ prior to any movement, an undesirable option as the latter relation would violate strict cyclicity.

(10) **Neglect (version 1)**: Freely ignore any material at any interface

This is of course too permissive. Neglect must be appropriately constrained and the simplest way is to reformulate (weaken) the Full Interpretation Principle so that an illegible feature can be ignored if one of its copies is checked:

(11) **Principle of Full Interpretation (FI) :** Interpret every syntactic object.

According to (11), what FI cares about is not occurrences of objects but objects themselves (fundamentally what is called "chains"). If a single syntactic object, a DP like *John* contains an uninterpretable feature F and has multiple occurrences, checking F once – that is having only one occurrence of this DP in the right checking configuration - suffices to allow Neglect of all instances of F on the possibly multiple copies of this object interpreted at some interface: satisfying a requirement on some occurrence of an object is enough to satisfy it for all occurrences of this object.[4] We thus reformulate Neglect as follows:

(12) **Neglect**: Any material at any interface can be ignored up to crash

We thus understand that anything can be freely neglected anywhere up to crash, that is as long as all relevant principles are satisfied (e.g. LF must be interpretable, FI must be satisfied, etc..).
Concretely, assume that, as an element fetched from the lexicon or from an existing structure to be merged or remerged, it is colored red. Once fully interpreted as part of some substructure, it becomes green. We can think of this in terms of multidominance: a single object can be multiply dominated in a structure. A fully interpreted object turns green. As long as all syntactic objects end up green, there is convergence with respect to FI (mutatis mutandis for other principles).

1.2 Traces as Bound Variable: Neglecting Determiners

Safir (1999) discusses Chomsky's (1995) Preference Principle. The relevant aspect of this discussion is illustrated by a case such as (13a):

(13) a. [Which picture] did you buy t
b. [Which picture] did you buy [which picture]
c. [Which picture] did you buy [~~which~~ picture]
d. [Which x picture (x) you bought [x ∧ picture (x)]

Given the copy theory of movement, the representation of t in (13a) is *[which picture]* as in (13b). Assuming for now with Chomsky and Safir that *which* is a quantifier (see below section 2.2 for further discussion), they note that the lower quantifier must be deleted because a QP cannot bind another QP quantifier as a variable, and a copy of A-bar movement must count in some sense as a variable.[5]
This means that the lower *which* must be ignored as in (13c). Rules for interpretation must be given for (13c) yielding a (restricted) bound variable.

The same problem arises in other types of movement. Once QR has applied to (14a) yielding b), assuming that every is a quantifier, its lower instance of *every* must be ignored as in (14c) and, as in

[4] On the PF side, the same idea underlies why not all copies of an object must be pronounced.
[5] I will further discuss this, including an alternative in terms of Fox's Trace conversion below.

the previous case, rules for interpretation must be given for (14c) yielding a (restricted) bound variable.

(14) a. Mary tasted every cake.
b. [[every cake] [Mary tasted [every cake]]]
c. [[every cake] [Mary tasted [~~every~~ cake]]]
d. [[every x, cake (x)] [Mary tasted [x ∧ cake (x)]]]

Fox (1999b, 2002) proposes a procedure, Trace Conversion, to introduce variable binding and take care of the lower instance of the quantifier (see also Elbourne 2005 and Sauerland 1998, 2001, 2004 for related proposals).

(15) Trace Conversion (Fox 2002:67)
Variable Insertion: (Det) Pred → (Det) [Pred λy(y=x)]
Determiner Replacement: (Det) [Pred λy(y=x)] → the [Pred λy(y=x)]

Trace Conversion has three components.
First, Variable Insertion introduces a predicate (λy. [y=x]) into the lower copy that combines with the restrictor of a determiner (e.g., *cake* in (16)) by Predicate Modification (see Heim and Kratzer 1998:126 for the formulation of this rule). This part of Trace Conversion establishes a variable-binding dependency between the lower copy and the λ-operator introduced by movement of the QP, as illustrated in (16c) by making sure that the same variable is used.
Second, the determiner of the lower copy is deleted.
Third, a definite determiner is introduced into the empty lower D slot, converting the lower copy into a definite description, which can be interpreted in situ.
The output representation in (16d) can now be compositionally interpreted.

(16) a. [Mary tasted every cake] → QR
b. [[every cake] λx. [Mary tasted [every cake]]] → Variable Insertion
c. [[every cake] λx. [Mary tasted [every cake x]]] → Determiner Replacement
d. [[every cake] λx. [Mary tasted [the cake x]]]

Clearly, in a system in which there are traces and traces are copies, some process must make these traces fit with the normal rules of interpretation. Trace conversion does the job. But while some aspects of it are justified, its formulation raises some questions.
For example the NP restriction is not systematically deleted (even though it could in principle) because it would empty the otherwise motivated copy theory (see below) of content. Similarly, variable insertion is needed to link the copies together in a single interpreted object. What is less clear is:
(i) why a definite determiner is introduced (other than the fact that it works).
(ii) why the variable introduced must be the same as that introduced by QR of the high copy. Interpretability could be satisfied as long as there is some binder somewhere for a variable introduced by variable insertion: for example, *everyone said that someone t left*, could end up being interpreted as *everyone-i said that someone is such he-i left*. What this means is that reference to all copies must be included in variable insertion.
(iii) why the rule applies to traces only and not to all copies. If it did, the result could be well formed as long as some higher binder for the variables introduced is present. For example, *everyone said that someone t left*, could end up being interpreted as *everyone-i said that he-i left*.

Point (iii) can be taken care of by FI. The determiner can't be deleted in all copies.

Point (ii) means that some reference must be made to some property shared by all copies, e.g. its index.
One way to achieve this is to adopt Irene Heim's "formula" hypothesis advocated in Heim (1997), augmented by the copy theory of movement. On this view, quantificational determiners at LF carry a variable subscript and combine with two constituents ϕ and ψ that are formulas, as in (17):

(17) [[every ϕ] ψ]

Under Heim's hypothesis,
(i) the NP ϕ after the determiner contains a silent subject, which is a variable coindexed with the determiner. (ii) when a DP headed by a quantificational determiner moves, it leaves as trace a variable coindexed with the determiner (and no λ-abstractor is introduced).
The LF of a sentence such as *every man left* would be:

(18) [[$_{DP}$ every$_x$ [$_{NP}$ x man]] [x left]]

If we want to integrate the copy theory of movement, we must amend this so that when a DP headed by a quantificational determiner moves, it leaves as trace a copy converted into a variable restricted by the NP and coindexed with the determiner.

(19) a. [[$_{DP}$ every man]] [every man left]]
b. [[$_{DP}$ every$_x$ [$_{NP}$ x man]] [[$_{DP}$ every$_x$ [$_{NP}$ x man]] left]]

First, as the same *every$_x$* (where we can take x to be the index of the DP) is used, all variables introduced in (19b) are the same. Given the option of Determiner Neglect, neglect of the content of both determiners is excluded by FI, and Neglect of the content of the top one only, or of neither yields uninterpretable structures.[6] The only option is therefore:

(20) [[$_{DP}$ every$_x$ [$_{NP}$ x man]] [[$_{DP}$ ~~every~~$_x$ [$_{NP}$ x man]] left]]

Now, a rule– in effect a version of determiner replacement - must be provided for the structure *[$_{DP}$ ~~every~~$_x$ [$_{NP}$ x man]]*, to make explicit the role of the null D. This rule must be such that *[$_{DP}$ ~~every~~$_x$ [$_{NP}$ x man]]* is an argument of *left*. In keeping with Heim's proposal, I will define the null determiner to yield an unbound variable restricted by the NP (much like an indefinite article, under certain approaches):

(21) [[$_{DP}$ ~~det~~$_x$ [$_{NP}$ x man]] → x ∧ [$_{NP}$ x man]

Applied to (13c) or (14c), this leads to (13d) and (14d).
Then, an interpretation for such structure as (20) can be:

(22) [[every$_x$ ϕ] ψ]]^g = 1 iff [[ψ]]$^{g[x/a]}$ = 1 for every a such that [[ϕ]]$^{g[x/a]}$ = 1.

1.3 An abstract overview of what follows

Neglect at the interface(s) must be allowed.

[6] Note that neglect of the D category entirely would also yield an uninterpretable structure.

In what follows, I will defend the idea that Neglect, that is controlled deletion or blindness at the interface allowed by this version of FI, is the only mechanism by which portions of structures can be ignored at the interface(s).
To see what we expect to find, assume there is a chain C formed of exactly two instances of the single object XP, which we assume here has some interpretable property, that is two copies of some XP, indexed 1 and 2 for ease of reference. Assume further that XP contains some Y - a phrase, a feature…- also indexed 1 and 2 for ease of reference. We can represent C as follows:

C = ($[_{XP1}$…Y1…], $[_{XP2}$… Y2…])
Given FI and Neglect above, here are a variety of options regarding how C is interpreted at LF, that is mapped to a semantic representation, depending on what is neglected (indicated by ∅).

In the following first four options, either some occurrence of XP – that is some position in C - is completely neglected or not all:

(23)
1. (XP1, XP2)
2. (∅, ∅)
3. (XP1, ∅)
4. (∅, XP2)

Option 1 is allowed as everything is interpreted. Option 2 is excluded because of FI since XP is not interpreted at all.[7] In option 3, only the top copy of XP is interpreted: the bottom copy is completely neglected. As we will see, this is (standardly assumed to be) always excluded. If XP is an argument, this is excluded by an additional principle (Local Predicate Saturation) requiring that the predicate XP is an argument of be locally saturated. If XP is an adjunct, it is excluded (i) because the top copy is never in a position to have an interpretable syntactic relation with anything (an adjunct can't move to become the adjunct of something else) and (ii) it can't be a "remote" adjunct to anything either.
Option 4 is what is called Total or Radical reconstruction and is allowed, as is well known and we will illustrate.

In these next representative options, only portions of XP are neglected.

(24)
5. ($[_{XP1}$…∅…], $[_{XP2}$… ∅…])
6. ($[_{XP1}$…Y1…], $[_{XP2}$… ∅…])
7. ($[_{XP1}$…∅…], $[_{XP2}$… Y2…])
8. ($[_{XP1}$…Y1…], Y2)
9. (Y1 , $[_{XP2}$… Y2…])

Suppose Y is uninterpretable. We can think of licit outcomes at LF in two equivalent ways. Suppose that an uninterpretable checked element it remains visible at LF but is treated as a neutral element for (syntactic or) semantic computation. This would be represented either by option 6 or 7, depending on where Y is checked (respectively the high position, the low position, or both[8]).
The other option is one in which an uninterpretable checked element is always neglected. This would be option 5.

[7] If XP were wholly uninterpretable and properly checked in one of its locations, this would be licit, and could be illustrated by a chain consisting of an expletive and its trace.
[8] This last option is typically assumed not to be available since an uninterpretable feature is assumed not to enter into any further computation.

In all cases, the occurrences in unchecked positions must be neglected.
For example, option 6 (or 5) is what happens if Y is the uninterpretable Nominative Case feature discussed earlier.

Suppose next that Y is interpretable.
Option 5 is excluded by FI since Y is not interpreted.
Option 6 is allowed. If Y is an adjunct to some head within XP, this configuration is equivalent to Late (post movement) Adjunct merger in the high copy. Late Adjunct Merger is therefore not needed. With Y the (encyclopedic) content of an N within a DP, this would turn the lower copy into the pronominal version of the high copy. This subsumes the effects of Late NP insertion (or Wholesale Late Merger) which is thus not independently needed. In effect, this case corresponds to vehicle change of a full DP to his pronominal version (which is independently needed in Ellipsis constructions). Finally, with Y the content of the D of a moved DP, this subsumes part of Fox's Trace Conversion.
Option 7 is predicted possible, and is found. We will discuss it.
Option 8 cannot arise. If XP is uninterpretable, it must be deleted everywhere. If XP is interpretable, it must be interpreted low (by Local Saturation, discussed below in section 3.1, and section 4.2.2.2).

2 Total Reconstruction as Neglect at the syntax/semantics interface

I now discuss option 4, and the role played by Neglect and FI in both A and A-bar movement.

2.1 A-movement

A prominent case of total reconstruction in seen in A-movement cases. A sentence such as (25a) below receives as most natural interpretation the paraphrase in (25b) (with *need* outscoping *a solution*), which arises from the representation in (25c) in which the raised subject is totally reconstructed.

(25) a. **A solution** seems to be needed ~~**a solution**~~
b. it seems that there is a need for **a solution**
c. ~~**a solution**~~ seems to be needed **a solution**

This can be straightforwardly handled by Neglect. The syntactic object *a solution* has two occurrences (ignoring intermediate traces), the first one as object of *needed*, the second as main subject. As long as one of them is interpreted, the other can be ignored. Total reconstruction arises when the first is fully interpreted and the second one not at all[9] - as the standard treatment holds in fact.
Given the independently justified need for Neglect, this option comes for free. Any alternative would have both to explain how total reconstruction under A-movement arises and why an other mechanism than Neglect is necessary. As far as I know, such justifications are lacking.

Other ways (reviewed in Elbourne and Sauerland, 2002) have been proposed to handle total reconstruction. They can all be seen as different implementations of Neglect except for the one defended by Elbourne and Sauerland themselves, namely that syntactic movement may, but need not feed LF which I will now discuss.

[9] The reverse is not possible for reasons we will come to (see Local Saturation of Predicates in section xxx).

Elbourne and Sauerland 2002 argue for the existence of PF movement in the case of A-movement as in (25). I will discuss the two main reasons Elbourne and Sauerland provide for their view.[10]
The first one is based on the following British English paradigm:

(26) a. A northern team is likely to be in the final. (∃ > likely, likely > ∃)
b. A northern team are likely to be in the final. ∃ > likely, *likely > ∃)
c. There is likely to be a northern team in the final.
d. * There are likely to be a northern team in the final.
e. __ are likely to be a northern team in the final

In a PF movement approach, the starred reading in (26b) must be generated by leaving the DP unmoved as in (26e). But "mereological" plural agreement as in (26b) is not possible without overt raising as (26d) shows. Therefore, if mereological agreement is there, Movement must have been overt and total reconstruction (i.e. the excluded reading in (26b)) is excluded.
Elbourne and Sauerland (2002) states that :

> "The LF lowering theory, the copy theory of movement, [both variants of Neglect- DS and the theory of semantic reconstruction have one thing in common: namely, that the subject of a raising sentence like [(26a) [renumbered from the original always moves to Spec,TP in the normal way, and then the movement can be reversed somehow to obtain inverse scope. Under these theories, then, it is hard to see how the contrast between the two readings in [(26b)] can be obtained at all: the uninterpretable [Mereology: plural] feature on T will be checked in the normal way when the subject moves to Spec,TP, and the subsequent reversal of the movement cannot alter this fact. In other words, these three theories state that subject-verb agreement in raising sentences takes place the same way regardless of whether the subject has wide or narrow scope with respect to a lower scope-bearing element."

But why does mereological agreement behave this way, unlike standard agreement? Elbourne and Sauerland (2002) note the correlation between (26b) and (26d) but offer no explanation as why it holds. Furthermore, their criticism of other theories assume that they would share the assumption repeated in the quote above - that there is an *uninterpretable* mereological feature. But giving up this assumption provides an immediate explanation of the data. Suppose that agreement is semantic in nature: it is a reflex of the fact that a formally singular N can be conceived of as consisting of a plurality of members and agreement expresses this interpretive property. Thus assume that the feature plural on the verb is *interpretable* (it means: my formally marked singular subject is composed of a plurality of members). This explains the distribution of this agreement: as semantic agreement, it must hold at LF, but only of a property (the main clause T-bar) and its subject. Totally reconstructing this subject destroys this predication relation and is thus not available. Neither is is plural agreement in (26d), say under Agree, which is only sensitive to formal features.
The behavior of this type of semantic agreement is general. Thus consider the following French paradigm:

(27) a. Une bonne moitié d'entre nous est toujours là
A good half among us is (3rd pers sg) always here
b. Une bonne moitié d'entre nous sont toujours là
A good half among us are (3rd pers pl) always here
c. Une bonne moitié d'entre nous sommes toujours là
A good half among us are (1st pers pl) always here

[10] See also Thoms (2009) for specific criticism of Elbourne and Sauerland (2002) and Ruys (2011) for further reasons not to adopt PF movement.

Agreement in the second and third sentences does not meet the structural description of syntactic agreement. Syntactically, the subject is singular (there is only one half). Because the subject refers to a subset of us, semantic plural agreement is possible (with 1st person only if the subset in question includes the speaker). This correlates with a difference in meaning, attributable to reconstruction options. In the first sentence, *a good half* can be reconstructed in its VP internal position and thus read in the scope of *always* (it is always the case that there is some good half of us or other is here). Not so in the second or third (it can only mean: there is a particular good half of us who are always here). Thus the correlation described by Elbourne and Sauerland holds even when the analogue of mereological agreement is demonstrably not syntactic.
Incidentally, just like in British English, the scope of a subject raised from an infinitive is sensitive to agreement:[11]

(28)a. Une bonne moitié d'entre nous est susceptible d'être là
A good half among us is (3rd pers sg) is likely to be here (a>likely, likely> a)
b. Une bonne moitié d'entre nous sont susceptibles d'être là
A good half among us are (3rd pers pl) likely to be here (a>likely, ??likely> a)
c. Une bonne moitié d'entre nous sommes susceptibles d'être là
A good half among us are (1st pers pl) likeley to be here (a>likely, ??likely> a)

Elbourne and Sauerland 2002's second argument hinges on whether total reconstruction is available in A-bar movement cases. We now turn to this question and I will conclude that the answer is positive.

2.2 A-bar movement

Elbourne and Sauerland (2002)'s second argument is based on Barr's generalization illustrated below:

(29) a. [How likely to t_i address every rally]$_j$ is some politician$_i$ t_j?
(some>likely/every, *likely/every>some)
b. [Some politician]$_i$ is likely to t_i address every rally.
(some>likely/every, likely/every>some)

They argue that this pattern can be explained under a PF movement approach because wh-movement, contrary to A-movement, cannot never fully reconstruct and thus cannot involve PF movement. Since overt wh-movement would bleed PF A-movement of the subject (for c-command reasons), A-movement must precede it, and thus cannot be interpreted as totally reconstructed. Other accounts it is claimed cannot make this distinction.
However, the reasons for concluding that wh-movement cannot fully reconstruct - premise to this reasoning - are not convincing. Indeed, the main argument given is the following (attributed to Saito (1989)): the sentence in (30a) cannot have the reading in (30b):

(30) a. [Which relative$_i$ did Mary ask whether to invite t_i?
b. Did Mary ask which relative to invite?

[11] Note that 3rd pers singular and 3rd pers plural agreement sound the same except in certain tenses, hence the tense change in b.

The reason given is that "the scope of moved wh-phrases in English is fixed by their surface position". Let us first clarify what the "the scope of moved wh-phrases" precisely refers to here.

Suppose for example that Mary wants to invite some of her neighbors and she is mistaken in thinking that all her neighbors are athletes, as in fact none of them are. It is still possible to ask *which athletes did Mary say she wants to invite?* where *athlete* is read *de dicto* (non *de re*), thus in the scope of *say* (and therefore not with surface scope). So scope cannot mean of scope of the whole phrase.
Second, it should be clear that the question property Q is not coded by, and is independent from the wh-phrase. This is corroborated by the fact that the very same wh-phrase can be used in non question constructions, e.g. relative clauses. The Q property is an arbitrary property of the matrix C, or a property of an embedded C selected or allowed by the embedding predicate.
What does seem true is that the surface position of the moved wh-phrase fixes its relation with the question operator Q: by moving "to Q", the wh-phrase becomes the focus of the question. I take it that this is what the quote above means by "scope". But this says little about the *syntactic* position of the wh-phrase *which relative* **at LF**. Indeed, the fact that wh-movement (in English) explicitly codes which Q operator the wh-phrase associates is a formal property. Semantically, it could scope wherever.
So no matter where the wh-phrase scopes, the reading in (30b) is expected not to be available, precisely because movement fixes the relation between the wh-phrase and some Q (here the matrix Q). But let us even assume that this association Q/wh were not fixed; the reading in (30b) would still not be available, Indeed, in (30b), the wh-phrase would at LF be associated with the embedded complementizer area. Such association is not freely available: it could come about only if it was reconstructed there. Assume reconstruction is possible: when it does takes place, reconstruction is back into a position from which the reconstructed phrase has moved. But for whatever reason (see e.g. fn 39, or criterial reasons as in Rizzi (2007)), movement of the matrix wh-phrase cannot have proceeded through the intermediate Comp checking the embedded question property and proceed further (regardless of whether or not it moves further to some other Q position). So the reading in (30b) is independently predicted not to be available.

A formal relation is established by movement between the matrix question property – (coded in the matrix C-system) and the wh-phrase *which relative* so that the matrix question has to be about relatives. The only question remaining is thus what *syntactic* position of the wh-phrase *which relative* at LF is compatible with this question interpretation. This leaves open the question of whether total reconstruction of moved wh-phrases is in fact possible?

As Elbourne and Sauerland (2002) reports (and as the *de dicto* case above suggests), a sentence such as (31a) below for example, can receive the interpretation shown in (31b) (with *nobody* binding, thus outscoping, *his*), which arises from the representation in (31c) in which the moved phrase is totally reconstructed (as a copy of the pronoun cannot be outside of the scope of its binder) except perhaps for the word *which*:

(31) a. Q **which pictures of his parents** did nobody say he burned ~~**which pictures of his parents**~~
b. Nobody$_k$ say he burned some picture of his$_k$ parents. Which ones?
c. Q ----------did nobody say that he burned **(which) pictures of his parents**

Another example involves quantity questions already discussed. A sentence such as (32a) below can receive the cardinal interpretation shown in (32b), which arises from the representation in (32c) in which the moved phrase is totally reconstructed except perhaps for *how*:

(32) a. Q **how many pictures** did you say you burned ~~**how many pictures**~~

b. What is the number such that you said you burned this many pictures
c. Q ---------- did you say you burned **(how) many pictures**

Presumably then, whether total reconstruction of wh-movement is possible hinges on whether or not **wh-words** themselves can reconstruct (if they indeed move). This depends on what wh-words are. As noted, wh-words in general are not question words per se. *Which* ranges over properties (like a wh-adjective), while *how* in *how many* ranges over degrees. What is the scope of the property *which* denotes?
Consider the following context: Mary says she burned a certain picture of her parents, and she did burn it. I know that Mary mistakenly thinks it is the picture of their wedding. In fact there are no wedding pictures and this is an engagement picture.
To the question: *which picture of her parents did Mary burn?* The answer *their engagement picture* would be fine but the answer *their wedding picture* is inappropriate, since there is no such picture. But this second answer becomes possible if it is to the question: *which picture of her parents did Mary say she burned?* This shows that whatever denotes the distinguishing property of the picture, which is, informally speaking, what *which* asks, can be read *de dicto*, that is in the scope of *say*. The possibility of this *de dicto* answer suggests that *which* (as well as the rest of the wh-phrase) can reconstruct: the LF of the question should be like (31c), with the Q operator high and *which* reconstructed (thus tolerating a non *de re* answer).[12]

Finally, Elbourne and Sauerland (2002) gives one technical reason why the wh-word cannot reconstruct but the reason they give is not compelling. They claim that in: *(i) [Which relative of hers$_j$ did every student$_j$ invite t_i?*
deletion of the entire top copy of a wh-movement, which – let us assume with them - creates a λ-abstract, would yield the structure (ii): *(ii) *λf did every student$_j$ invite [which relative of hers$_j$]*
instead of: *(iii) which λf did every student$_j$ invite [f(relative of hers$_j$)]*
(ii), they write, "plausibly is ill formed because it is not of the right semantic type—it is a predicate rather than a question—and the λ-operator does not bind anything". But it is easy enough however to write the lambda abstract in the logical form of the question as: *(iv) λf did every student$_j$ invite which λg g=f and g(relative of hers$_j$)* with the entire wh-phrase in situ.

Total reconstruction of moved wh-phrases is thus possible, in fact expected under current movement theories, and given the discussion of the *de dicto* reading above, and straightforwardly handled by Neglect (of high copies). But this also means that PF movement in fact provides no explanation for Barr's generalization.[13]

Finally, it is worth noting that two further reasons cast doubts on the availability of PF movement.
Firstly, postulating it leads to problems because it severs the connection between phonology and interpretation: moving a phrase does constrain interpretation in a way that is unexpected if movement can be in PF only. To see this, consider first the following sentences of French, keeping in mind that wh-movement can fully reconstruct (hence be PF moved according to Elbourne and Sauerland):

(33) a. Combien veulent-ils tous acheter de photos
(i) *How many pictures are there that they all want to buy.
(ii) What is the number such that they all want to buy this number of pictures

[12] Another question which I will not pursue here is when reconstruction of wh-words is allowed, as it seems clear that reconstruction is not always possible.
[13] Note that the examples in (29) do not form a minimal pair (and the same is true of all the examples that Elbourne and Sauerland (2002) provides) as *likely* is modified by a degree only in the examples without reconstruction. To my ear (in French), this seems to play a crucial – although unexplained – role (similar to what is observed in Howard Lasnik's famous examples: (i) Every coin is 50% likely to land heads up *likely> every). See Sportiche (2005) for discussion.

b. Combien de photos veulent-ils tous acheter
(i) How many pictures are there that they all want to buy.
(ii) What is the number such that they all want to buy this number of pictures
c. Ils veulent tous acheter combien de photos
(i) How many pictures are there that they all want to buy.
(ii) What is the number such that they all want to buy this number of pictures

Sentence (33a) can only receive the cardinal interpretation (ii), not the referential interpretation (i).[14] How do we guarantee this connection between form and meaning? Both (19b) and (19c) with wh-movement or wh in-situ are well formed and allow both. Since there is no connection between form and interpretation, nothing prevents an LF representation such as in (19c) (with wh-in situ), thus allowing both interpretations but with the form as in (19a) produced in PF which only allows one. If PF movement is not available, this problem simply does not arise. The referential interpretation is incompatible with a particular form (that of (19a)): because the formal relation between the question operator and the wh-phrase is unambiguously with *combien* alone, its restriction cannot function as if it had moved: it must have narrow scope (presumably because of Economy considerations).

Secondly, allowing PF movement raises a question the answer to which must be stipulated.
Why is movement (= remerge) allowed not to feed LF, but (first) merge is not? If it were, FI would be obviously false as all material could in principle be merged in PF and thus not semantically interpreted at all. For example, a PF merged adjunct could simply be fully ignored interpretively. Clearly this is a most undesirable outcome. But the very conception of Move as Remerge makes it unclear how exactly to distinguish Merge from Remerge: Remerge and Merge is one and the same operation.

In conclusion, in addition to being independently motivated, the approach in terms of Neglect is also theoretically simpler and empirically superior to a PF movement approach.

3 Constraining Neglect

3.1 Total Neglect

We now briefly discuss why, as has long been assumed, option 3 in (23) is excluded. What we have seen is needed is:

(34) FI applies to syntactic objects

As a result, Neglect (interpretive blindness) is allowed: when multiple copies of an object are present in a structure, only one of them needs to be fully interpreted. This immediately allows total reconstruction of A-movement or of A-bar movement, which arises when only the lowest copy of a moved object is interpreted at LF.

Is the choice of interpreted occurrence free? It is in fact well known that the answer is negative.
To see this, assume e.g. two copies generated by a one step movement as below:

(35) a. How many [**pictures of Picasso** [did he want to buy ~~**how many pictures of Picasso**~~
b. How many pictures of Picasso are there such that they all want to buy them
c. How many pictures of Picasso are there such that they all want to buy these pictures of Picasso

[14] Imagine a context in which they all want to buy six pictures, but they all agree on only three of them. The answer to the cardinal reading is *six*; while the answer to the referential reading is *three*.

The four simple options we discussed are: interpreting the bottom copy only, the top one only, both or neither. Of all these options, the last one, interpreting neither, is excluded by FI. The first option, bottom only, is of course what is needed for total reconstruction. Nothing prevents interpreting both. Consider for example (35a) with the reading indicated in (35b). Because of the existential scope indicated (wider than *want*'s) it is plausible to take the top copy to be interpreted.[15] The reason to conclude that the bottom copy is too is that this sentence is unacceptable if *he* and *Picasso* are presupposed to corefer: we witness a binding Condition C effect. This effect can be accounted for if the LF of (35a) is better paraphrased as (35c), with the bottom copy interpreted too. This is in fact one of the main motivations for the copy theory of movement.
But note that for this account to go through, the interpretation of the name in the bottom copy must be required. Why is there such a requirement? The principle involved is routinely adopted (see Chomsky, 1995, Safir 1999 a.o.) in part because of the condition C effect just alluded to but its theoretical motivation goes back to the earliest for trace theory, namely that at the interpretive interface, at LF, predicate argument relations must be strictly local.[16]

(36) Local Predicate Saturation:
At LF, a predicate must be locally saturated by its arguments

If this requirement did not exist – if predicate saturation could be done long distance - there would be no need for say an argument of a verb to ever be generated within the syntactic projection of this verb. And if the argument was generated locally to its verb but moved without leaving a trace prior to interpretation, this would yield an input to interpretation equivalent to one in which the argument was never local to its predicate.
In conclusion then in simple cases,

(i) FI requires the Interpretation of the full content of at least one occurrence of a syntactic object
(ii) Local Saturation requires the interpretation of at least the lowest copy of a syntactic object which is an argument (because movement is never downward).
(iii) Any other occurrence can be freely Neglected.

3.2 Partial Neglect

3.2.1 A-movement/A-bar movement asymmetry: Neglect as Vehicle Change

Nothing in what precedes requires interpreting the name *Picasso* as a name in the bottom copy, as long as it is interpreted as a name in the top one. If instead, what was interpreted low was a pronominal version of this name, Local saturation would be satisfied, but Condition C would wrongly be bled. It turns out that this option is in principle available, as a result of the availability of Neglect.
To this see, consider the following well known asymmetry between A and A-bar movement:

(37) * Which pictures of **Picasso** did **he** display **t** prominently.
(38) The pictures of **Picasso** *seemed to* **him** to be t unattractive

First, the well formedness of the second sentence is not due to some blanket property of A-movement: if one guarantees narrow scope for the A-moved constituent Condition C effects reappear (see e.g. Fox,

[15] A priori, it could appear that the relevant reading could be obtained by only interpreting the bottom copy but having the existential quantification high (by means of e.g. a choice function). The French example in (33a) suggests this is not allowed. Indeed, in it, which has no high copy, the existential quantification can't be higher than *all.*
[16] This was made necessary by the shift to surface, that is post movement, interpretation as opposed to interpretation at deep structure of the earlier models.

Romero, Sportiche xxx). Thus we observe the deviance of the following sentence under coreference of *Fermat* and the pronoun, under the most prominent (and perhaps only) reading under which the raised subject is interpreted in the scope of *need (to construct)*:

(39) * More explicit proofs of **Fermat**'s theorem *seemed to* **him** to be needed **t**

Naturally, this property – suggesting a form mismatch between a high copy and its A-trace - needs to be derived. Let us ask what the structural differences are between and a name and a coreferential pronoun. Following much work (e.g. Elbourne, 2001, 2005), I assume that both names and pronouns are definite descriptions, consisting of a definite D and a complement NP (in addition, possibly, to various intermediate projections) which differ only in the content of the N. The set of features of the N of a name is a superset of that of the corresponding pronoun, the additional features which I will call here R-features (some with phonological exponent) helping to fix the particular reference of the DP. Thus the (accusative forms of the) names Fermat and Picasso and the pronoun him are identical except for the R-features of their respective Ns: when the R-features of a name are deleted, what is left is the corresponding pronoun.

This said, there is a straightforward way of deriving the well formedness of (38) by invoking Neglect. The relevant chain is:

C = ([the pictures of Picasso], [the pictures of Picasso])

Using the format in (24), with *The pictures of Picasso* being the XP and Y being the set of R-features of the name *Picasso*, we can neglect Y in the low copy as in (24), option 6 yielding the chain :

C = ([the pictures of Picasso], [the pictures of him])

As *Picasso* is an argument of *pictures*, it cannot delete outright, as this would run afoul of Local Saturation. But such partial neglect of R-features only is allowed since the pronoun is an argument in a local relation with *pictures*. And this bleeds Condition C, as desired.
Such partial Neglect is not available in (37), otherwise, it would be well formed.
The main difficulty is to explain why.

Several attempts are found in the literature to draw the requisite distinction. For example Lebeaux (1998) proposes that the argument is merged as a pronoun, and is replaced by lexical material at a later stage of the derivation, and no later than the case position of this argument. In light of what we say about R-features, this comes down to late inserting R-features. A very similar proposal is made in Takahashi and Hulsey (2009). I will first present a solution and next compare it with Takahashi and Hulsey's 2009 alternative.

3.2.2 Vehicle Change Asymmetries from Cyclic Check

The idea I will develop is the following: Neglect takes place at the point of Transfer, that is at Spell Out.
Neglect of a full XP is freely available up to crash.

Assume however that Neglect of a subset of features of a category, call it Subcategorial Partial Neglect, as e.g. neglect of the R-features of an N must be somehow restricted to cases involving A-movement.[17]

Charnavel and Sportiche (2015) conclude, based on binding theoretic considerations – namely that A-movement but not A-bar movement can feed anaphor binding - that the A/A-bar distinction is defined in terms of movement span: A-movement is movement taking place within a condition A binding domain, while A-bar movement crosses such a binding domain boundary.
Furthermore, they conclude that the binding domain for an anaphor is the smallest spell out domain containing it. Consequently, A-movement is movement taking place within a single spell out domain, while A-bar movement is movement to a phase edge, thus not within a single spell out domain.

As a result, when movement takes place within a single spell out domain, it is A-movement and Subcategorial Partial Neglect (of R-features) may take place, as it does in (38), since the partially neglected lower copy and the higher copy are, by definition, within the same spell out domain. By contrast in (37), Subcategorial Partial Neglect (of R-features) is not allowed.

Why does Subcategorial Partial Neglect display this anaphoric behavior? Recall that FI must be satisfied and in the end, we know that it has been because all syntactic objects are "colored green". If we assume that this coloring is syntactic in nature, it should only apply to object that syntax can manipulate, presumably X^0s and XPs. This leaves no option for checking that Subcategorial Partial Neglect is consistent with FI. If Subcategorial can only be done in the presence of a local, full fledged antecedent, this anaphoric dependency guarantess that FI is met.

Such an approach makes some correct predictions
One concerns how Case can be licensed. Indeed, recall that getting rid of unchecked copies of uninterpretable features motivated Neglect in the first place. But neglecting such features is a case of Subcategorial Partial Neglect. We thus predict that Case licensing cannot occur through some intermediate A-bar step. Here is an example of a ruled out improper movement configuration:

(40) John seems [~~John~~ [that it was killed ~~John~~]]

The nominative Case property on *John* cannot be licensed by first moving *John* to the edge of its phase (for some other reason) and then entering into a relation with the matrix T: the lowest copy of *John* not having an antecedent in its spell out domain, its uninterpretable Case feature on cannot be subject to Subcategorial Partial Neglect. More generally, Case can never by acquired by A-bar movement.

Another prediction concerns how uninterpretable features on T can be checked.
T is postulated to have an Edge Feature (EF) to enforce the EPP, that is to account for the fact that T requires a subject. But how does this EF guarantee the presence of a subject? The following derivation without subject ought to be possible:

(41) Who did [~~did~~ seem to [~~who~~ [that it was raining]]

Here T would first move to C. T's EF is then checked by *who*.
But this would have to be a case of Subcategorial Partial Neglect of the EF of T in the trace position. This derivation is excluded because T's trace does not have an antecedent in its spell out domain (TP).

[17] Takahashi and Hulsey (2009) argue otherwise (that the distinction is not an A/A-bar distinction) but on grounds we reject. See below.

3.2.3 Takahashi and Hulsey's alternative

Takahashi and Hulsey's 2009 proposal shares a great deal with our overall proposal. In effect, they claim (following others) that Late merger of anything is routinely available, as long as the result is LF interpretable. Thus adjuncts can be Late inserted, but so can arguments, under certain circumstances. It is the mirror image of an approach in terms of Neglect (insert whenever up to crash, instead of neglect whatever up to crash).
Assume with them that NP's are complements and arguments of D. Echoing Lebeaux's 1998 proposal, they derive the A/A-bar asymmetry from the postulate that NP's (as well as D's) need to check an uninterpretable Case feature at the latest in the position in which the DP gets Case.
This approach crucially relies on, or makes predictions given, an array of assumptions, some of which are not motivated on principled grounds.
For example, it relies on assumptions found e.g. in Hulsey and Sauerland (2006) regarding the structure of relative clauses (which I reject in Sportiche, 2015), as well as Fox and Nissenbaum's1999 treatment of Extraposition in terms of Late merger which I also discuss below in section 5.1 and reject. It also relies on the details of Fox's Trace Conversion which I discussed and modified in a way that is inconsistent with their analysis, or more precisely on a modified version implicit in Bhatt and Pancheva, 2004 (Takahashi and Hulsey, 2009, fn 8 p 398),) which is more powerful than Fox's. Indeed, it must be able to apply to convert a DP trace which does not include an NP. So parentheses must be added around Pred to Fox's version as below:

(42) Trace Conversion modified
Variable Insertion: (Det) (Pred) → (Det) [(Pred) λy(y=x)]
Determiner Replacement: (Det) [(Pred) λy(y=x)] → the [(Pred) λy(y=x)]

This is what allows late merger of complements. But Late merger of complements is subject to restrictions that are not independently justified. Consider (37) repeated below:

(37) * Which pictures of **Picasso** did **he** display **t** prominently.

Late merging of the NP *[$_{NP}$ pictures of Picasso]* must be ruled out as it would bleed Condition C. It is claimed to be excluded because the NP headed by *pictures* needs to check its case when it is c-commanded by the case assigner of its DP: Late NP insertion would be too late.
But it is unclear why NP's need to check case the way D's do. AP's agree in case with D's and NP's but they behave like adjuncts and thus can be late merged. They must therefore be assumed to check their case property differently than D's, and it is unclear why NP's could not function casewise the same way.

Next, given that they (and we) analyze proper names as NPs with a silent definite article so that Picasso = *[~~the~~ [$_{NP}$ Picasso]]*, countercyclically merging the NP Picasso would also wrongly bleed condition C as it would guarantee that t does not contain the name. This is possibly excluded for a different reason (see Takahashi and Hulsey 2009, p. 401 fn 12): both a DP and its NP must be assigned Case immediately "upon the merging its case assigner, here *of*." This assumption is not independently justified.[18]

[18] This property does fall out in a strictly cyclic system: merging a case assigner must trigger a probe/goal search upon merger if the uninterpretable features of the probe are checked cyclically. If countercyclicity is allowed, it must be stipulated.

The sums of these assumptions yields a "conspiracy" effect preventing Late Merge of NP's in moved wh-phrases.[19]

4 Partial Reconstruction as Neglect

We now turn to discussion of options involving partial copy Neglect, that is total Neglect of some YP inside a moved XP.

4.1 Partial Reconstruction

Consider the following sentence (43a):

(43) a. How many stories did he want to publish
b. How many stories are there that he wants to publish
c. How many stories he wants to publish ~~how~~ many stories
d. What is the number such that he wants to publish this number of stories
e. How many ~~stories~~ he wants to publish ~~how~~ many stories

The sentence (43a) is ambiguous between the readings (43b) and (43d). This ambiguity is typically described by assigning (43a) the rough LFs in (43c) and (43e) in which the crossed out parts are not interpreted. (43e) is the key reading as it shows that parts of a preposed constituent can be selectively interpreted either in the moved position, or in its original position.
What allows part of the syntactically present preposed material to be ignored? The obvious suggestion is of course Neglect: the higher occurrence of *stories* can be ignored since its lower occurrence is interpreted. This provides a straightforward motivation for mechanism that decouples what moves where and what is interpreted where, that is Neglect.
Notice however that all these readings could in fact be derived by assuming total syntactic reconstruction of the moved wh-phrase, as discussed earlier. But in section 4.2.2.2 below, we will see examples where such partial reconstruction is in fact possible and motivated.

4.2 Partial Reconstruction instead of Late Merger

4.2.1 Neglecting Adjuncts but not Complements: Take 1

The following asymmetry motivated Lebeaux's 1991 classic Late Adjunct Merger proposal:

(44) a. Which *pictures* [that Picasso$_i$ liked] did **he$_j$** sell
b. * Which *pictures* [of Picasso$_i$] did **he$_j$** sell
c. * Whose *hypothesis* [that **Picasso$_i$** left] did **he$_j$** deny **t**

Here is the standard account in terms of Late merger.

[19] Note that relative clauses derived by head raising raise additional problems. Indeed, we would expect the head NP in such cases to always bear the same case as the relative pronoun (which is a D taking the NP as complement) given the requirement on late NP merging. Yet, in many languages, the NP head of any relative, hence of head raising relatives, always has a Case determined relative clause externally. This suggests that Case on NP is a rather "surfacy" phenomenon unexpected under Takahashi and Hulsey's approach.

The boxed relative clause in (44a) is taken to be an adjunct to the noun *pictures*, the boxed phrase in (44b, c) a complement to the noun (*pictures* or *hypothesis*). The Late Adjunct Merger analysis allows (44a) to be derived in either of the following two ways:

(45) a. Which *pictures* that Picasso$_j$ liked did **he$_j$** sell ~~**which *pictures* that Picasso$_j$ liked**~~
b. Which *pictures* that Picasso$_j$ liked did **he$_j$** sell ~~**which *pictures***~~

If the trace is a full copy of the moved phrase as in (45a), the (unpronounced) bottom copy in bold must be interpreted; this yields a condition C effect at LF. But Late Adjunct Merger also allows the derivation in (45b) with the boxed part inserted after wh-movement, thus circumventing Condition C. (44a) with this derivation is fine.
Because the *of* phrase in (44b) or the *that* clause in (44c) is assumed to be a complement, it cannot be late inserted (because of Local Predicate Saturation). Consequently, the bottom copy must recursively contain *picture*, a complement (of the D complement of) *sell*, and *of Picasso* or the *that* clause, which are complement of the nouns. The full representation of (44b) for example must contain the substructure below, triggering a Condition C effect:

(46) …. **he$_j$** sell … ~~***pictures* of Picasso$_j$**~~

Clearly, Neglect can handle these facts just as well. As we just saw, to satisfy FI, it is enough that one copy of an object be interpreted; all other copies can be ignored. Crucially, nothing in FI forces copy interpretation to be an all or nothing choice: particular copies can also be partially neglected and partially interpreted (as long as all other principles are satisfied). Here, it suffices to ignore the underlined part (of the relative clause) in (45a) to yield (45b) at the interface and thus avoid a Condition C violation. Crucially, Local Saturation prevents this from happening to the complements in (44b,c) (or in (35c)).

Note that Late Adjunct Merger assumes that adjuncts are interpreted where there are merged.
Neglect + FI derives the same effect but differently: adjuncts can be neglected only when they are moved as a result of being pied piped within a larger constituent because they remain in an interpretable position within this moved larger constituent.[20] Suppose for example that an adjunct A first merged in position A1 adjunct to some constituent C is moved to a position A2. Can the copy in A1 be neglected? The answer is negative: by FI, A must be interpreted. If A1 is ignored, this means it must be interpreted in A2. But this would mean that movement of an adjunct can make this adjunct an adjunct to some other constituent C'. This is never possible (quite independently of Neglect).[21] If it were, it should be possible to interpret such a moved adjunct as modifying both C and C'.

4.2.2 Neglecting Adjuncts but not Complements: Take 2

I will now argue that although it is right in spirit, the details of the account of the complement adjunct/asymmetry under Neglect or Late Adjunct Merger are wrong, in such a way that Late Adjunct Merger cannot be the right account in general, although Neglect can be.

4.2.2.1 Late Adjunct Merger and Cyclicity

[20] Thanks to Luigi Rizzi for raising this question.
[21] While this seems to be correct empirically, it is unclear why, especially if movement into a theta position is allowed as in control as movement proposals (Hornstein, 1999).

Let us begin by remembering that allowing Late Adjunct Merger requires undesirable assumptions. Fundamentally, Late Adjunct Merger requires not only countercyclic syntactic operations, but an unboundedly countercyclic syntax.[22] Its countercyclicity comes from the fact that the relative clause in (44a) must be assumed to be late inserted in the position in which it is interpreted, namely inside the complement structure of the determiner of the relative clause: this makes this insertion countercyclic since merger is not at the edge. But the logic of this account requires that such late merger be unboundedly countercyclic. This illustrated by the following kind of examples:

(47) Whose criticism of Mary's rendition of (……) the claim [that you [formulated (…) the hypothesis [that Henri [met a man **who knew Picasso**$_k$ did he$_k$ endorse t

Such sentences with the indicated coreference are well formed. This means that the boxed relative clause must have been late inserted. But it is late adjunction to an element (*a man*) which is a recursive complement of a complement of the main head noun *criticism*. This means that none of this intervening material can be late inserted: as a result, the late merger of the relative clause must take place inside the four bracketed constituents all of which are phases. Furthermore, it should be clear that the example can be modified so that late merger be required in an arbitrarily deeply embedded constituent. If unboundedly countercyclic syntactic operations are allowed, Phase theory loses any explanatory force when it comes to accounting for islandhood because of Phase Impenetrability.

A Neglect approach involves no syntactic operation. Rather it has to do with what is transferred to interpretation and thus imposes no countercyclic syntax.[23]

Let us now turn to why Late Adjunct Merger is analytically inadequate. We provide two reasons. First there are well formed cases that it disallows. Secondly it is irrelevant in the cases it is used because the premise it is based on is incorrect: the relevant asymmetry is not one between adjuncts and complements: all the relevant constituents have in fact the same status.

4.2.2.2 Late Adjunct Merger is too strong

Let us begin with the cases it cannot handle. One such case involves wh-movement of predicates, which it has been known since Barss (1986) or Heycock (1995) must obligatorily totally reconstruct. We can illustrate this with VP preposing as follows:[24]

(48) a. Arrive before John ate, he says you did
b. Arrive before John ate, he says you did ~~arrive~~
c. Arrive before John ate, he says you did ~~arrive before John ate~~

[22] Further such cases are found in Fox, 2014.
[23] Interpretation is unlikely to obey cyclicity. Thus, ruling out a condition C configuration requires knowing the presence of an arbitrarily deeply embedded name for example, regardless of the presence of e.g. island boundaries. This may also be the case for computing the value of arbitrarily deeply embedded bound pronouns. It should be clear that Neglect does not need any access to structures or embedded elements.
[24] The classic arguments to this effect are that movement a predicate neither increases the binding options of an anaphor it contains unlike what happens with non predicate movement, nor bleeds Condition C effects due to a name it contains. The first observation is correct (but see Charnavel and Sportiche, 2015, which controls for potential confounds) but it is not clear what it shows because it may be the case, as argued by Huang 1993 or Takano 1995, that the preposed predicates contain a subject trace closing off the anaphor binding domain. If a trace must be treated as a variable bound by their antecedent, obligatory reconstruction follows. The second case must be properly controlled as in the text because the copy theory of traces in general prevents bleeding of condition C effects by movement.

(49) a. Quiet in the way John often is, he thought you were yesterday
b. Quiet in the way John often is, he thought you were ~~quiet~~ yesterday
c. Quiet in the way John often is, he thought you were ~~quiet in the way John often is~~ yesterday

The sentences (48a) (resp. (49a)) is ill formed if *he* and *John* are coreferential. This is unexpected if predicate preposing need not reconstruct. Indeed, if reconstruction is not required, the adjunct *before John ate* (resp. *in the way John often is*) could have been late inserted after VP preposing as in (48b) (resp. (49b)). Suppose however that the preposed predicate must reconstruct. We must exclude the possibility that the adjunct has been late inserted and left stranded high once the predicate is totally reconstructed. Surely this is excluded because it would no longer an adjunct to anything.

The principle involved in excluding this adjunct "stranding" is similar to (36): both predicate-argument (saturation) and phrase-modifier (predicate modification) relations must be encoded locally in the syntactic input to interpretation. I will take this to mean that that an XP modified by an adjunct YP is in fact an argument of the adjunct where the adjunct is a predicate so that the non strandability of adjuncts falls out of the Local Predicate Saturation requirement.[25]

So the adjunct must have been inserted low as in (48c) (resp. (49c)), triggering the desired condition C effect (and the entire top copy must be deleted yielding a total reconstruction configuration).
Now consider the following contrast (adapted from Heycock, 1995):

(50) a. * [How eager for a new friend that $Baird_k$ might confide in_j has she_k become t_j?
b. [How eager for the friend that $Baird_k$ always confides in_j has she_k become t_j?
c. * How eager for $Baird_k$'s $friend_j$ has she_k become t_j?

In (50a) and (50c), we observe condition C effects. This is expected: the preposed predicate must totally reconstruct. Given Locality of Predicate Saturation, its complement must reconstruct too. This will trigger a condition C effect in (50c). The same thing is true in (50a). But why is (50b) fine? Heycock remarks that the difference is that in the latter the name is contained in a relative clause on a definite DP, whereas in the former the relative is on a nonspecific indefinite.

A treatment in terms of Late Adjunct Merger alone is not available. Indeed, to have a chance to bleed a Condition C effect in (50b), the adjunct must have been inserted after preposing, yielding the representation below in (51a), with the LF in (51b):

(51) a. How eager for the friend that Baird always confides in has she become ~~how eager for the friend~~
b. ~~How eager for~~ the friend that Baird always confides in has she become how eager for the friend
c. ~~How eager for~~ the friend that Baird always confides in has she become how eager for the friend ~~that Baird always confides in~~

The predicate *eager* must fully reconstruct, but its argument *the friend* cannot, as fully reconstructing it would strand the boxed adjunct by itself. The idea of using Late merger is that the LFs produced are exactly what is interpreted. But here, we are led to assuming that an additional mechanism,

[25] That YP is a syntactic adjunct, that is, that the constituent C= [XP YP] can be seen externally as an XP means that C is a relative structure (possibly internally) headed by XP.

different from movement, is needed that allows total reconstruction of only a subpart of a preposed constituent.
This mechanism is of course Neglect, which allows more options (here neglecting the high copy of *how eager* only). But if partial Neglect is allowed, it can be used as in (51c), with Neglected parts crossed out.[26] This makes appeal to Late merger unnecessary, hence unavailable.

4.2.2.3 Late Adjunct Merger: wrong premise

Let us return to the basic complement/adjunct paradigm as below:

(52) Which *pictures* that Picasso$_i$ liked did **he$_j$** sell **which *pictures***
(53) a. * Which *pictures* of **Picasso$_i$** did **he$_j$** sell **t**
b. * Whose *hypothesis* that **Picasso$_i$** left did **he$_j$** deny **t**

In (52), the boxed constituent is assumed to be an adjunct and thus late insertable, unlike the boxed constituents in (53) which are complements and can't be. However a substantial amount of work in the past thirty years concludes that this last assumption is incorrect and that the boxed constituents in (53) are not complements.[27]
Consider first (53b). Stowell (1981), argued that the clause isn't a complement of the noun. This has since been defended in Grimshaw (1990: 74ff), Aboh (2004), Kayne (2010), Haegeman (2010), and Cinque and Krapova (2012), and no argument to the contrary has ever been presented, it seems. Most recently, Moulton, to appear recapitulates or provides new detailed argumentation that CP taking nominalizations are non argument taking nouns. Rather these CPs are some kind of adjuncts to the nouns.[28]
As a result it becomes mysterious why Late Adjunct Merger cannot apply in (53b), inserting the clause after movement.

Consider next (53a). There are converging reasons to think that the boxed constituent is not a simple complement in the traditional sense either in French or in English but rather a relative structure. This has been argued for in detail in e.g. Kayne (1994, 2010).
Support for such an analysis comes from such constructions as *cet idiot de médecin /lit. this idiot of doctor/ this idiot of a doctor'* (see e.g. Den Dikken, 1998, 2006 formulated in terms of predicate inversion), or such as *large d'épaules/ lit. broad of shoulders/ 'broad shouldered'* in which the predicate argument relation is clearest. For example, in this last one, the predicate argument relation between the adjective *large* and the nominal must be coded (as a small clause) as well as the fact that the expression behaves externally like an adjective: this type of syntactically based type shifting is typical of relative structure in which the head of the construction is a subconstituent of a clause this construction contains. That *of/de* can introduce relative structures can be made independently with such cases as *la façon de faire ça/the way of doing this* which obviously both have the syntax and the semantics of infinitival or gerundival relatives.
For (53a), *Picasso* must be seen as a thematic dependent of *pictures* since the presence of an of-phrase so interpreted (e.g. as a Theme) is a lexical property of the head noun (*school*, or *time*,

[26] Heycock's 1995 tentative proposal (in terms of the definite DP scoping out) is discussed in Sportiche (2014) and faces difficulties: scoping out the phrase *the friend that Baird always confides* in would leave a copy and thus not bleed Condition C.
[27] It suffices for our purposes that they not always be complement as this means that the asymmetry observed is not an adjunct/complement asymmetry.
[28] For Moulton, 2015, content nouns such as *hypothesis*, *claim*, *idea* etc.. denote individuals with propositional content. The CP is an adjunct modifier of such individuals.

e.g., do not allow it). A relativization analysis is the only type of analysis that both codes this thematic dependency property, derives the fact that it is headed by *pictures* and does not require countercyclic merger of *of* (*of* insertion). In other words, a relativization analysis encodes what needs to be, and requires no undesirable mechanism unlike alternatives. This analysis can be sketched as follows (see Kayne, op.cit. for more details):

(54) a. [Picasso picture → merger of *of* (relative C and Case licenser)
b. [of [Picasso ~~picture~~ → relativization of the predicate
c. picture [of [Picasso ~~picture~~ → merger of D
d. the [picture [of [Picasso ~~picture~~

Further evidence for such structures can be found in French where *de* corresponds to *of* and multiple *de*-phrases (up to three) are allowed. We can analyze the French phrase *le portrait de Rembrandt de Picasso/ Picasso's portrait of Rembrandt* as stacked relatives roughly as follows:

(55) a. Merging of arguments: [Picasso [Rembrandt portrait
→ merger of *de* (relative C and Case licenser)
b. [de [Picasso [Rembrandt portrait
→ relativization of the predicate phrase
c. [Rembrandt portrait [de [Picasso [~~Rembrant portrait~~
→ merger of *de*
d. de [[Rembrandt portrait [de [Picasso [~~Rembrant portrait~~
→ relativization of the predicate
e. portrait [de [[Rembrandt ~~portrait~~ [de [Picasso [~~Rembrant portrait~~

Note that if we relativize the predicate before merging *Picasso*, the derivation proceeds similarly but we correctly derive a different order (*portrait de Picasso de Rembrandt*), in free variation with the first one.
Either derivation encodes the property that, despite the fact that none of the two c-commands the other on the surface, *Picasso* can asymmetrically c-command *Rembrandt* (under reconstruction) but not vice versa.
This makes correct predictions. Thus, we observe the following:

(56) Je n'ai vu la photo de son_k enfant d'aucun $parent_k$ /Je n'ai vu la photo d'aucun $parent_k$ de son_k enfant
I saw the picture of his child by no parent/ *I saw the picture by his child of no parent

This shows that the quantifier can bind the pronoun regardless of word order only if c-commands holds at some derivational point as indicated in (55).
Similarly, we observe the following condition C effect:

(57) la photo de [la soeur de $Pierre_k$] de lui_k / la photo de lui_k de [la soeur de $Pierre_k$]
the picture by Peter's sister of him (Peter)
* the picture of Peter's sister by him (Peter)

Without the indicated coreference, both word orders under either of the interpretations are possible. But coreference between the pronoun and the name is only possible if the pronoun is not interpreted as the agent (or in fact the possessor). This would follow if the pronoun does not c-command the name at any derivational point, a consequence expected if again, the underlying structure is as indicated in (55).

4.2.2.4 Accounting for the asymmetry

From the preceding discussion, I conclude that invoking Late Adjunct Merger to account for the putative complement/adjunct asymmetry is insufficiently general at best. The question that arises now is how to account for the asymmetry in (52)/(53).

Beginning with (53a), there is no analysis of relative structures that takes the head N to take the relative as complement. In other words, invoking Local Predicate Saturation requirement is not going to guarantee that the lowest copy of the name be present in its syntactic structure input to interpretation.

I would like to suggest instead that this asymmetry in (52)/(53) can be reduced to an already discussed asymmetry, namely that holding between arguments and predicates: the latter must totally reconstruct while the former do not have to. To see this, consider the wrongly labeled "complement" case, traces indicated as crossed out:

(58) Which pictures of Picasso pictures did he sell ~~which pictures of Picasso pictures~~

According to the proposal in (54), a more precise representation is given below:

(59) Which pictures of Picasso ~~pictures~~ did he sell ~~which pictures [of [Picasso pictures~~

Examining the crossed out constituent, it involve relativization of the predicate *picture.* Assume it has moved: it must therefore totally reconstruct inside the *of*-relative. By the locality of predicate saturation, the noun *pictures* inside this relative cannot be neglected. As *pictures* must be present to saturate (the D complement of) *sell*, *Picasso* must be present to saturate *pictures*.[29]

In other words, the condition C effect observed with sentences like (58) are indeed due to *Picasso* being an argument of *pictures*, albeit not on the surface.

For this account to go through, we have assumed that the relative structure in (54) is derived by movement of the head, by head raising. As recent work (e.g. Hulsey and Sauerland, 2006 following earlier work) propose that relative clauses can either be derived by head raising, or by matching where the head has not moved from inside the relative clause, this question must be addressed.

I will not discuss it here beyond making the following two short remarks.

First, predicate headed relative clauses display the diagnostic properties of head raised relatives in Hulsey and Sauerland's terms.[30] For example, predicate headed relative clauses neither extrapose (cf. (60a)), nor do they escape Condition C (cf. (60b)):

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[29] One may further wonder why predicates must always reconstruct. As mentioned in fn 22, one reason why such reconstruction is required could follow from Huang 1993's proposal modified in Takano 1995 (and further discussed in Sportiche 2014): if preposed predicates contains an unbound trace created in order to allow the predicate phrase to move without its subject, reconstruction would follow from the necessity to properly bind this trace at LF (cf. the discussion around (14)).

The derivation in (46) is likely to contain an extra step leaving a trace t:

a. [Picasso picture] → movement of Picasso out of NP
b. [Picasso [t picture]] → merger of of (relative C and Case licenser)
c. [of [Picasso [t picture]]→ relativization of the predicate
d. [t picture][of [Picasso [t picture]]→ merger of D
e. the [[t picture][of [Picasso [t picture]]

The bold t requires total reconstruction of the preposed head [t picture]. A similar derivation would be involved in (54) discussed below. It is worth noting that Heycock's1995 argument against the Huang/Takano approach does not apply to the treatment we propose in terms of (partial) Neglect.

[30] In this connection, another reason for mandatory reconstruction of predicates could be invoked. One could reason that a raised predicate must reconstruct for the same reason that predicate headed matching relatives are

(60) a. * John never became the doctor during his active period, that his mother was,
b. * John never became the friend of $Bill_k$ that he_k says his father was

Second, I argue in detail in Sportiche (2015) that matching derivations are not available.

Turning now to adnominal clauses such as (53b), there are two possibilities. It is possible that the adnominal clause is indeed a complement of the head noun, in which case its lowest copy cannot be neglected.
But a long tradition of work suggest that such clauses are in fact adjuncts.[31] Indeed, as pointed out and discussed by many authors, e.g. Grimshaw (1990), Cinque and Krapova (2012), or Moulton (2015), we find the following structures with tensed clauses:

(61) a. Bill's hypothesis **is** that John is guilty
b. That John is guilty is Bill's hypothesis

These structures resemble specificational copular constructions. Accordingly, extraction facts such as: *√What is Bill's hypothesis/*What is that John is guilty or* such contrasts as *?I consider that John is guilty Bill's hypothesis/*I consider Bill's hypothesis that John is guilty* suggest (see Moro, 1997, den Dikken 2006, p.244, or Cinque and Krapova, 2012) taking the *that* clause to be the subject of the small clause headed by the noun *(Bill's) hypothesis*, so that (61a) is a more basic structure and (61b) an inverted specificational structure.
Mostly agreeing with Cinque and Krapova (2012) (or den Dikken 2006), I take it that the right structure for *hypothesis that S* would have to both express the fact that there is some thematic relation between the clause and the noun and that externally, the construction behaves like an NP/DP.
These desiderata are straightforwardly expressed by a relativization analysis turning the noun into the head of a small relative clause:

(62) a. [that John is guilty hypothesis
→ relativization (by head raising of the predicate)
b. hypothesis [that John is guilty ~~hypothesis~~ → merger of D
c. the [hypothesis [[that John is guilty ~~hypothesis~~

---

unavailable: if a copy of the head remained external, it would remain locally unsaturated. In other words, this could be due to the Local Saturation of Predicate requirement: a matching derivation for a predicate headed relative would leave this external head unsaturated. One could object that, given the conception of FI advocated here as applying to objects, the local saturation requirement should be similar: as long as some copy is locally saturated, other copies need not be. But the two principles are different. Full interpretation is such that, if some material is not neglected at LF, this material must be legible at LF. In particular, the Local Predicate Saturation requirement is an LF legibility requirement: if some element, e.g. a copy of a predicate, is present at LF, it must be locally saturated even if another copy of the very same predicate is locally saturated. I conclude that the independently motivated Local Predicate Saturation requirement could also enforce mandatory reconstruction of all moved predicates.

[31] It seems to me that none of the analyses are completely satisfactory, and it may be that the adnominal clause can be analyzed in different ways (possibly depending on the head noun or other contextual properties), perhaps explaining why there seems to be variation regarding Condition C effects in such cases. One problem for the adjunct hypothesis in any form is that the adnominal clause cannot outscope other adjuncts. Thus, both (i) and (ii) are well formed *(i) that John is guilty is Bill's best hypothesis*, *(ii) Bill's best hypothesis that John is guilty*. But in (ii), the comparison class can only hypotheses that John is guilty, and not just hypotheses as (i). This is unexpected.

By the same reasoning as above, mandatory total reconstruction of the raised predicate would guarantee that the adnominal clause be present in the lowest copy.

5 Other cases of Late Adjunct Merger

Appeal to Late Adjunct Merger plays a crucial role in two related domains: the syntax and interpretation of relative clauses and of extraposition. I will now discuss both.

5.1 Extraposition, Late Adjunction and Neglect

5.1.1 The problem

Appeal to Late Adjunct Merger has been made to account for some properties of relative clause or PP Extraposition from object, in Fox and Nissenbaum (1999), or relative clause extraposition in Sauerland and Hulsey (2006).
I will now show that the facts cannot be handled by appealing to Late Adjunct Merger, but can be with interpretive Neglect instead.
Fox and Nissenbaum (1999) note first that arguments can be extracted from NP, while adjuncts cannot:

(63) a. ?Of whom did you see [a painting t]?
b. *??From where/ *By whom did you see [a painting t]?

They remark that PP (e.g.) extraposition of both complements and adjuncts is possible:

(64) a. We saw [a painting t_k] yesterday [of John]$_k$.
b. We saw [a painting (t_k)] yesterday [from the museum]$_k$.
c. We saw [a painting (t_k)] yesterday [by John]$_k$.

Since adjuncts cannot move, they propose to analyze adjunct extraposition as Late Adjunct Merger. They propose that this adjunction is to the NP included in the object DP overtly moved to the extraposition site, but whose lower trace only is phonologically realized.
For example, (64b) has the following representation:

↓ trace of moved DP ↓ moved DP ↓ Late Inserted Adjunct
(65) We saw [$_{DP}$ a painting] yesterday [$_{DP}$ ~~a [[$_{NP}$ painting]~~ [from the museum]$_k$]]

By contrast, complements to N cannot be late inserted because of Local Saturation.
But they can extrapose alone. So (64a) has the following representation in:

↓ moved PP
(66) We saw [$_{DP}$ a painting t_k] yesterday [of John]$_k$]]

These hypotheses derive the following generalization due to Edwin Williams:[32]

[32] This is a slight modification (due to Fox and Nissenbaum 1999) of the original statement of the generalization found in Williams 1974, chapter 4. Williams did not restrict himself to adjuncts, perhaps because he focused on comparative- and result-extraposition, where the facts are different. Fox (2014) refines this generalization in ways that are not relevant to the present discussion but see fn 35.

(67) Williams's generalization (WG): When β is "extraposed" from a "host QP" α, the scope of α is at least as high as the attachment site of β (the extraposition site) if β is an adjunct.

Indeed, by hypothesis, a late merged adjunct cannot reconstruct. And the QP to which it is late merged cannot totally reconstruct either as this would strand the adjunct, which would be uninterpretable. So the QP must be interpreted no lower than the extraposition site.
In complement extraposition, the extraposed element can but does not have to reconstruct. A priori, it should be able to totally reconstruct. But if it does not, it can bind its trace in its host.

This account raises two questions that I will address in turn.

First, it is well known that not all complements to an N can be extracted, only complements that can otherwise move to the edge of DP (possessivized) can. This means only of-complements can. What does extraposition of non extractable complements imply for the DP they are extraposed from?

Secondly, in the statement of WG, nothing is said about the minimal scope of β in general. If β is an adjunct, it must have scope at least as high as the extraposition site. But what if it is an extractable or non extractable complement?
As answer to the first question, I will show that non extractable complements behave exactly like extractable complements. First, they are extraposable even though they cannot be Late Merged. This means that the Late adjunction account is insufficiently general. Another more general mechanism is needed – Neglect - which makes Late adjunction redundant hence unnecessary. Second, they do not force high scope of their host, even though they cannot be Late merged. This means that high scope is due to a different property that Late Adjunct Merger.
The answer to the second question provides a clue to this property: all extraposed material, whether they are adjuncts, extractable complements or non extractable complements take scope at least as high as the extraposition site. This suggests that extraposition is scope driven.

5.1.2 Illustrating WG

We begin by illustrating the robustness of WG using several of Fox and Nissenbaum's 1999's examples.
Consider the following pair with relative clause extraposition:

(68) a. John refused to read every book that you like yesterday
b. John refused to read every book yesterday that you like

(68a) is ambiguous in a way that (68b) is not. In (68b), *every book that you like* outscopes *refuse* (for every book that you like, John refused to read it, that is, he will not read any of them). (68a) allows an additional reading where *refuse* outscopes *every* (John won't read all of them but he may agree to read a subset).
This illustrates that the structural position of the extraposed clause (here in the main clause, higher than the temporal adverb *yesterday*), determines the scope of the DP this relative clause modifies.

The following shows that extraposition of complements does not force the indefinite to outscope the intensional verb *look for*, while adjunct extraposition does, as expected.

(69) a. I looked for a picture very intensely from John's factory. ∃ > look for, * look for > ∃
b. I looked for a picture very intensely of John's factory. ∃> look for, look for > ∃
c. I looked for a picture very intensely by this artist. ∃ > look for, *look for > ∃
d. I looked for a picture very intensely of this artist. ∃ > look for, look for > ∃

In the following cases, 'free choice' *any* is licensed in the scope of the verb *look for*. Once again, extraposition of complements does not force the indefinite to outscope the intensional verb *look for*, while adjunct extraposition does, as expected, yielding ill-formedness.

(70)a. I looked very intensely for anything that would help me with my thesis.
b. * I looked for anything very intensely that will/would help me with my thesis.
c. I looked for something very intensely that will (likely) help me with my thesis.
d. I would buy anything without making a fuss that will/would help me with my thesis.

This shows that the extraposed material is or can be a scope position, that an object cannot take narrower scope than its verb when an adjunct is extraposed from it, and finally that an object can take narrower scope than its verb when a complement is extraposed from it.
The same point can be made by using Antecedent Contained Ellipsis. Consider the following ambiguous sentence with its two readings:

(71) I read a/every book before you did.
Reading 1: before >∀: Before you read every book, I read every book
(= I read all the books before you read any of them).
Reading 2: ∀ > before: For every book, I read it before you read it
(→ there is no book that you read before I read it)

Note that the entailment relations: ((∀ > before) ➔ (before >∀)) but not ((before >∀) ➔ (∀ > before)). Indeed, if for each book, I read it before you (∀ > before), I must have finished reading them before you (before >∀).
But, if I read all the books before you read all the books (before >∀), it is not true that for each book, I read it before you: you may have read all the books but one before me on Monday, I read all the books on Tuesday and you read the last one on Wednesday. As a consequence, when the object quantifier wide scope only is available, that is when the reading with ∀ > before is available but the reading with before >∀ is not, we can conclude that the object must take scope at least as high as the extraposition site. Now consider such cases with extraposition of a complement in (72), or of an adjunct in (73):

(72) a. I read a/every review of his books before you did. (∀ > before, before >∀)
b. I read a/every review before you did of his books (∀ > before, before >∀)
(73) a. I read a/every book that John had recommended before you did. (∀ > Bef, Bef >∀)
b. I read a/every book before you did that John had recommended. (∀ > Bef, *Bef >∀)

As expected, only with adjunct extraposition must the object scope at least as high as the extraposition site.

5.1.3 Non extractable complements.

As we noted, extractability from NP does not track the complement/adjunct distinction. Rather it tracks movability to the periphery of the DP containing this NP, which is restricted to (some) genitive complements. Some complements are not extractable (either because they are not genitive complements, or because the object is too embedded, e.g. a complement of a P), yet they can extrapose from object. This is illustrated below:

(74) a. *Who did you print Tom's letter to t /*Which museum did he talk to me about donations to t
b. *To whom did you print a letter t / *To which museum did he talk to me about donations t

c. I printed Tom's letter yesterday to Bill / I talked to him about donations yesterday to the LACMA

Note first that we can corroborate their status as complements by the same diagnostic used by Fox and Nisenbaum (1999). They note that complement extraposition, unlike adjunct extraposition, does not bleed Condition C. This is illustrated below (their examples):

(75) a. I gave him_k a picture yesterday from John's$_k$ (own) collection.
(Cf. ??/*I gave him_k a picture from John 's$_k$ (own) collection yesterday.)
b. I gave him_k an argument yesterday that supports John's$_k$ theory.
(Cf. ??/*I gave him_k an argument that supports John's$_k$ theory yesterday.)
c. I told you that he_k will accept the argument when you and I last spoke that I presented to $John_k$ yesterday.
(Cf. *I told you when you and I last spoke that he_k will accept the argument that I presented to $John_k$ yesterday.)

(76) a.??/*I gave him_k a picture yesterday of John's$_k$ (own) mother.
b.??/*I gave him_k an argument yesterday that this sentence supports John's$_k$ theory.
c. * I said that he_k would accept the argument when we met that what we presented to $John_k$ yesterday is correct.

This pattern is straightforwardly explained as these extraposed complements cannot have been late merged and a copy of these complements must remain in the c-command domain of the coindexed pronoun.

The same failure to bleed Condition C is found with unextractable complements:[33]

(77) a. I brought $him_{j/*k}$ a letter (yesterday) to $Bill_k$
b. I talked to $him_{j/*k}$ about donations yesterday to $John_k$'s foundation

Scope wise, an extraposed but unextractable complement behaves like an extractable complements: it does not force its host to have scope at least as high as the extraposition site. Thus consider:

(78)I refused to accept every gift of money to our charity yesterday
refuse >∀ I only accepted some
∀ > refuse Because we do not take money

Without extraposition, both scope are possible, in particular, the object can scope under the verb *refuse*, hence lower than the extraposition site of the complement. The same remains true with extraposition, witness the availability of the first reading, made prominent by the indicated continuation (which is felicitous and non contradictory, but incompatible with the second reading):

(79) I refused to accept every gift of money yesterday to our charity
#1 refuse >∀ I only accepted some
#2 ∀ > refuse Because we do not take money

[33] Given the the A/A-bar movement asymmetry with respect to Condition C bleeding, Extraposition has to count as A-bar movement, that is as movement to a phase edge.

How then can complement extraposition be generated in cases of unextractable complements, and how do the scope facts follow?
Movement is not an option but clearly Late merger is not either (due to the Local Predicate Saturation requirement). Neglect offers a straightforward solution: move everything but selectively neglect at LF and at PF. I propose the derivation of extraposition for an extractable or a non extractable complement proceeds as follows:

↓trace of moved DP ↓ Extraposed DP
(80) a. We saw [$_{DP}$ a letter [*to John*]] yesterday [$_{DP}$ ~~*a [[$_{NP}$ letter*~~] [to John]]]
b. We saw [$_{DP}$ a letter [*to John*]] yesterday [$_{DP}$ ~~*a [[$_{NP}$ letter*~~] ~~[to John~~]]]
Legend: *italics* = Neglected at PF; ~~crossed out~~ = Neglected at LF

What is PF ignored in case of extraposition is given by the utterance. But it is worth asking what options are predicted in principle. I will not deal with PF Neglect here – this is a separate theory which must rely both on PF principles (e.g. well formed prosody) and movement theory – as its existence must be uncontroversial if traces are copies.
At LF, nothing in the trace can be neglected (because of Local Predicate Saturation).
In the extraposed position, a priori everything could be: that the host can be has been empirically established in the previous section; the status of the extraposed material (here *to John*) is open, it may or may not be neglected, as indicated in (80a and b). In the next section, I address this questions and I will conclude that the overtly extraposed material must take scope no lower than the extraposed position (so that (80b) is in fact not available.

Let us now turn to adjuncts. The representation of an extraposed structure will be:

↓trace of moved DP ↓ Extraposed DP
(81) We saw [$_{DP}$ a painting [*from the museum*]] yesterday [$_{DP}$ *a [[$_{NP}$ painting*] [from the museum]]]
Legend: *italics* = Neglected at PF

As shown, the utterance indicates what is PF neglected. At LF, there are a priori more options than in the complement case.
The adjunct can be neglected in the high (extraposed) or the low position (but not in both because of FI). This yields three cases. In addition, if the adjunct is interpreted, its host must be in the same position.
As for the host, it cannot be neglected in the low position because of Local predicate saturation. This yields the following four cases:

(82) a. We saw [$_{DP}$ a painting [from the museum]] yesterday [$_{DP}$ a [[$_{NP}$ painting] [from the museum]]]
b. We saw [$_{DP}$ a painting [from the museum]] yesterday [$_{DP}$ a [[$_{NP}$ painting] [~~from the museum~~]]]
c. We saw [$_{DP}$ a painting [from the museum]] yesterday [$_{DP}$ ~~a [[$_{NP}$ painting] [from the museum~~]]]
d. We saw [$_{DP}$ a painting [~~from the museum~~]] yesterday [$_{DP}$ a [[$_{NP}$ painting] [from the museum]]]
Legend: ~~crossed out~~ = Neglected at LF

Of these four, only the first one and the last one are consistent with WG. The existence of the last one guarantees that adjunct extraposition can bleed Condition C. The middle two must therefore be excluded.

This is the topic of the next section: I will examine the scope of the extraposed material itself and shows that independently of the scope of its host, it must scope at least as high as the extraposition site.

5.1.4 Extraposition as Scope assignment

Fox and Nissenbaum's 1999 statement of WG focuses on a β being a PP or a clause extraposed from a DP. Nothing is said about extraposition in general, or about the minimal scope of β in general. Empirically, if β is an adjunct extraposed from a DP, it must have scope at least as high as the extraposition site. And what happens if β is an extractable or non extractable complement PP or clause extraposed from a DP?

I will now show that extraposed complements (or more generally arguments) behave like adjuncts: they must scope at least as high as the extraposition site. Consider the following pair

(83)a. Tom refused to do a review of every book yesterday ∀>refuse, refuse>∀
b. Tom refused to do a review yesterday of every book ∀>refuse, *refuse>∀

Without extraposition, the sentence is ambiguous. Either Tom would not do any review: for every book, Tom refused to do a review of it (∀>refuse); or Tom was ready to review some books but not all (refuse>∀).
But with extraposition, only the first reading is available: *every* must outscope *refuse*. Thus it would be contradictory to continue (83b) with: *he agrees to review only some of them*.
More examples show the same pattern, here with the *on*-PP complement of *report*:

(84) a. He was looking for a report on a convicted criminal yesterday ∃>look for, look for>∃
b. He was looking for a report yesterday on a convicted criminal ∃>look for, *look for>∃

Limiting ourselves to the readings in which a description is read *de dicto* (in the scope of *look for*), we observe the following: without extraposition, *a* convicted criminal can be read either *de re* or *de dicto*: Either there is a convicted criminal a report on whom he was looking for, or he was trying to find a report on any convicted criminal. With extraposition, the *de dicto* reading disappears showing that the extraposed complement must scope out.

Let us return to Fox and Nissenbaum's 1999 explanation for WG. Since an extraposed adjunct cannot have been extracted, it must have been late merged in extraposed position and can thus not take narrower scope than its merged position. Therefore its host must obey WG. But now what we see that even though they cannot have been late merged, extraposed arguments cannot take scope narrower than their extraposed position either. This has no incidence on the scope of their host because unlike adjuncts, they are not subject to Local Predicate Saturation and can thus be interpreted by themselves.
This pattern is in fact more general that PP or Relative clause extraposition from DP. It extends to extraposition of unembedded PPs. Thus consider:

(85)a. Tom refused to spray paint on every wall yesterday ∀>refuse, refuse>∀
b. Tom refused to spray paint yesterday on every wall ∀>refuse, *refuse>∀

While continuing (85a) with *he only agreed to spray paint on some of them* is felicitous, signaling the availability of the reading refuse>∀, it is not possible in (85b), signaling the unavailability of this reading.

This behavior seems characteristic of "rightward movement" including "heavy NP shift", which shares many properties with extraposition (see, e.g. Chesi, 2012, and references therein). Thus, consider the following pair:

(86) a. Tom refused to read every book that was sent to him yesterday ∀>refuse, refuse>∀
b. Tom refused to read yesterday every book that was sent to him ∀>refuse, *refuse>∀

As indicated, the scope pattern is identical to that found in (83). It would be contradictory to continue (86b) with: *he agreed to read only some of the books sent to him*.
What this shows is that extraposition is never scope neutral: an extraposed item must scope at least as high as the extraposition site.
We can now return to (78) in which the adjunct has been extraposed alone and which we take to arise as a case of Partial Neglect (no Late merger); and its LF options (82) in which we must rule out the middle two cases of LF Neglect:

(78) We saw [$_{DP}$ a painting [*from the museum*]] yesterday [$_{DP}$ *a [[$_{NP}$ painting*] [from the museum]]]
Legend: *italics* = Neglected at PF

(82)
a. We saw [$_{DP}$ a painting [from the museum]] yesterday [$_{DP}$ a [[$_{NP}$ painting] [from the museum]]]
b.*We saw [$_{DP}$ a painting [from the museum]] yesterday [$_{DP}$ a [[$_{NP}$ painting] [~~from the museum~~]]]
c.*We saw [$_{DP}$ a painting [from the museum]] yesterday [$_{DP}$ ~~a [[$_{NP}$ painting] [from the museum~~]]]
d. We saw [$_{DP}$ a painting [~~from the museum~~]] yesterday [$_{DP}$ a [[$_{NP}$ painting] [from the museum]]]
Legend: ~~crossed out~~ = Neglected at LF

We now see that the middle cases are excluded from the fact that Extraposition is scope assignment: the adjunct can't be neglected high.

The case of complement extraposition is very similar except that (i) a complement cannot be neglected low and (ii) The extraposed complement can be interpreted by itself. This means that the paradigm for complements is as follows:

(87) We saw [$_{DP}$ a letter [*to John*]] yesterday [$_{DP}$ *a [[$_{NP}$ letter*] [to John]]]
Legend: *italics* = Neglected at PF

(88) a. We saw [$_{DP}$ a letter [to John]] yesterday [$_{DP}$ a [[$_{NP}$ letter] [to John]]]
b. We saw [$_{DP}$ a letter [to John]] yesterday [$_{DP}$ ~~a [[$_{NP}$ letter]~~ [to John]]]
c. *We saw [$_{DP}$ a letter [to John]] yesterday [$_{DP}$ a [[$_{NP}$ letter] [~~to John~~]]]
d. *We saw [$_{DP}$ a letter [to John]] yesterday [$_{DP}$ ~~a [[$_{NP}$ letter] [to John~~]]]
Legend: ~~crossed out~~ = Neglected at LF

Only the first two representations are allowed. The third and fourth are ruled out because *to John* must have wide scope. The third is also ruled out because the extraposed copy of *letter* must be locally saturated.

5.1.5 Further Remarks on Complement Extraposition

So far, in discussing extraposition, we have stuck to the classic construal of the adjunct/complement asymmetry. But as discussed in section 4.2.2, PPs or clauses extractable from DPs are not really complements of the N on the surface, they are predicate headed relative clauses. But because there is obligatory reconstruction of the predicate head, this predicate will have to be locally saturated by its arguments in its first merge position. This means that these "complements" (which I will continue to call complements) must form a constituent with this predicate upon first merger of this predicate as assumed.
A second question that arises, which space prevents me from discussing here is how exactly complement PP extraction works.
A third question concerns the reasons put forth Fox and Nissenbaum that extractable complements must extrapose by moving by themselves. This would mean that (89) is possible, and the equivalent of (88b) for an extractable complement PP, namely (91b) would be ill formed.

(89) We saw [$_{DP}$ a portrait [*of John*]] yesterday [of John]
Legend: *italics* = Neglected at PF

(90) We saw [$_{DP}$ a portrait [*of John*]] yesterday [$_{DP}$ *a [[$_{NP}$ portrait*] [of John]]]
Legend: *italics* = Neglected at PF

(91) a. We saw [$_{DP}$ a portrait [of John]] yesterday [$_{DP}$ a [[$_{NP}$ portrait] [of John]]]
b. *We saw [$_{DP}$ a portrait [of John]] yesterday [$_{DP}$ ~~a [[$_{NP}$ portrait]~~ [of John]]]
c. *We saw [$_{DP}$ a portrait [of John]] yesterday [$_{DP}$ a [[$_{NP}$ portrait] [~~of John~~]]]
d. *We saw [$_{DP}$ a portrait [of John]] yesterday [$_{DP}$ ~~a [[$_{NP}$ portrait] [of John~~]]]
Legend: ~~crossed out~~ = Neglected at LF

If true, this is surprising. Indeed, given the behavior of unextractable complements, there seems to be little choice regarding how to treat their extraposition. But this treatment should also covers extractable complements. I will leave this question open for three reasons. One is that the question of extraction from DPs actually takes place must be settled first. Second, because some of Fox and Nissenbaum's arguments show that complement PPs can extract, not that they must extract. Third because the one argument showing that complement must extract do not actually track extractable complements, but complements tout court.[34] This argument is based on Definiteness. The following pair (from Fox and Nissenbaum, 1999, p.139, section 6.1) illustrates the well-known fact that extraction from NP is slightly marked when the NP is definite (see Fiengo and Higginbotham 1980):

(92) a. Who did Mary see [a (good) picture of t]?
b. ??Who did Mary see [the (best) picture of t]?

Complement extraposition (but crucially not adjunct extraposition, irrelevant here) shows the definiteness restriction that one would expect under the assumption that extraction has taken place viz.:

(93) a ??I saw the (best) picture yesterday of the museum.
b. I saw a (very good) picture yesterday of the museum.

[34] Remarkably, all the other arguments given Fox and Nissenbaum, 1999, section 6, showing that complements can move use some non extractable complements too (e.g. adnominal complements and *about* PPs).

But this holds too of non extractable complements, here an adnominal clause:

(94) a. ??I heard the same rumor yesterday that you were quitting.
b. I heard a similar rumor yesterday that you were quitting.

To which we can add:

(95) a. I translated the same report yesterday about John.
b. I translated a similar report yesterday about John.
c. *?About whom did you translate a report

5.1.6 Conclusion

From the discussion of Extraposition, I conclude:

(96) Scope and Extraposition
When β is "extraposed" from a "host QP" α, the scope of β is at least as high as the attachment site of β (the extraposition site).

From this we can derive WG[35] as follows. An adjunct must form an LF constituent with its modifiee (because of Local Predicate Saturation). If β is an adjunct, the scope of α, its modifiee must thus be equal to that of β, hence at least as high as the attachment site of β (the extraposition site). That this is not true of argument extraposition simply reflects the fact that an argument need not form an LF constituent with the predicate it is an argument of.
A second conclusion is that an account of scope and extraposition appealing to Late Adjunct Merger is insufficiently general and that a different mechanism is needed. I have argued that Neglect derives all the facts from the independent generalization (96).
Finally, we may ask why (96) is true.
Movement is either driven by some formal requirement (e.g. raising to subject, wh-movement) or because they necessarily make a meaning difference (Topicalization, QR). Extraposition or Heavy NP shift do not clearly belong to either one. If scope is involved, it has the effect of an overt QR that disambiguates the scope of XP's embedded inside DPs. But clearly extraposition does not always involve scope ambiguities, witness *I read your book yesterday about gardening*. So its functioning cannot be reduced to a general scope economy condition such as Fox's 2000. But perhaps a different notion of Economy affecting "optional movement" could be invoked. If an optional movement could totally reconstruct, the movement operation would be totally vacuous. An Economy of Optional Movement Condition" could prohibit total reconstruction of optional movement yielding the scopal effects observed when scopal interactions can arise.[36]

[35] Our discussion is compatible with Bhatt and Pancheva's 2004 modification of WG, which we discuss below in section 5.2.2. It is also compatible with Fox's 2014 modified Williams's generalization (MWG): "When an adjunct β is "extraposed" from a "source QP" α, there must be a QP α' which reflexively dominates α and the scope of α' must be at least as high as the attachment site of β (the extraposition site)." In particular, Fox (2014) concludes that Late Adjunct Merger in Extraposition cases can be arbitrarily deeply embedded, as we showed on different grounds must be the case. This is to be expected given that Neglect is not constrained by phase theory.
[36] In Sportiche (2015), I suggest that the same effect is found in certain head raising relatives, where optional head raising cannot reconstruct.

5.2 Other cases of Late Adjunction and Neglect

5.2.1 Relative clauses

Hulsey and Sauerland (2006) develop an account of the syntax and semantics of relative clauses crucially building on three ideas. First it adopts Sauerland's 2000 proposal that relative clauses have two distinct derivations: Head raising and Matching. Second, it relies on the fact that Relative clause extraposition is only compatible with matching derivations. Third, it adopts Fox and Nissenbaum's 1999 approach to relative clause extraposition, and in particular to Late Adjunct Merger (but only in the case of matching relatives, of course).

Because I have shown that Fox and Nissenbaum's 1999 approach to relative clause extraposition should be modified, and in particular because we reject Late Adjunct Merger, we have to modify the account of the systematic differences Hulsey and Sauerland document between Matching Relatives and Head Raising Relatives.

I will not pursue this matter here: this is done in Sportiche (2015), in which it is argued that:

1. All (restrictive) relatives are in fact derived by Head raising.
2. Neglect is available.
3. The different behavior Hulsey and Sauerland documents all derive from the scope of the head of the relative (Relative external scope for "matching", Relative internal scope for head raising), except one: relativization, unlike question formation can bleed Condition C; this derived from a derivational difference allowing vehicle change (Partial Subcategorial Neglect) in the former but not in the latter.

5.2.2 Comparative Clause Extraposition

Bhatt and Pancheva (2004) make crucial use of Late Merger in their investigation of the syntax and semantics of comparative clauses, in particular in connection with extraposition of the degree clause, as exemplified below:

(97) a. Cleo ate more apples (yesterday) than/*as/*that Matilda did.
b. David is less worried (now) than/*as/*that Monica is.
c. Simone drank fewer beers (in the bar) than/*as/*that Alex did.
d. Anastasia is as tall (now) as/*than/*that Daniel is.

Here is a summary of their discussion, focusing on the points relevant to the present article. [37]

1. Fundamentally following Bresnan (1973), they reduce the co-occurrence facts exemplified above to the following:

(98) a. i. -er (+ many/much = more) . . . than
ii. -er (+ little = less) . . . than
iii. -er (+ few = fewer) . . . than
b. as (+ many/much/little/few) . . . as

In which *–er/as* are degree heads selecting and taking as complement the degree clause introduced by *than/as*.

[37] As they note, their analysis extends to result clauses and the degree heads that license them, mutatis mutandis.

2. They conclude that WG's generalization should be modified as follows, as a far extraposition of degree clauses is concerned:

(99) The Extraposition-Scope Generalization (for degree expressions)
When a degree clause β is extraposed from a degree head α, the scope of α is <u>exactly as high</u> as the merger site of β.

3. They derive this generalization from the following assumptions, some inspired by Fox and Nissenbaums'1999 analysis of extraposition.
(100)

a. DegreeP being a quantifier, it must QR leaving a (possibly pronounced) trace.
b. The degree clause DC complement to the degree head DH must be late merged to DH once the DegreeP is QRed but no earlier.
c. The result is well formed because the trace of DegreeP is subject to Fox's Trace conversion (much like other QP traces are) changing its denotation to a "pronominal degree", that is to a definite degree bound by the moved DegreeP.
d. Late merger of DC to DH is required because, DH (usually) being a non conservative head, trace conversion would lead to a contradiction.
e. An extraposed DC has been Late merged to a QRed DH, the low copy of which only is pronounced.
f. An extraposed DC been Late merged to a QRed DH, cannot move again: if it did, it would leave a trace of a degree restricted by the DC, leading to a contradiction (because of non conservativity).

Bhatt and Pancheva (2004, p. 24) illustrate the "at least as high" property of WG by first considering the following sentence (slightly modified from the original):

(101) Degree clause inside the embedded clause
John is now required [to have published fewer papers [than that number] in a major journal last year [to get tenure].
Simplified LF structure: required > [fewer [than n]]
Required [fewer [than n] d [PRO publish d-many papers]]
Approximate meaning (pragmatically odd): John now has to meet the following requirement to get tenure: he should have published fewer papers than a certain number last year.

With extraposition of the DC into the main clause, the above reading is not available: the extraposed DC marks the minimal scope of DegreeP, which includes *require*:

(102) Degree clause outside the embedded clause
John is now required [to have published fewer papers in a major journal last year] [to get tenure] [than that number].
Simplified LF structure: [fewer [than n]] > required
Fewer [than n] d [required [PRO publish d-many papers]]
Approximate meaning (pragmatically OK): There is a certain number smaller than that number, such that to get tenure, John should have published at least that number of papers last year.

Finally, in the following, the DC *[than that number]* has been extraposed past the locative PP *[in a major journal]*, but lower than *[last year]*:

(103) John is now required [[to have published [fewer papers] in a major journal] [than that number] last year] [to get tenure].

last year can't be is in the main clause which is already modified by *now*. This means that the DC has been extraposed, but only in the embedded clause. That it only has the scope *require> [fewer than]* shows that the scope of DegreeP can't be wider than the overt position of DC: this is the "exactly as high" property.

As I am only interested in the import of Late merger, I will accept without discussion the underlying assumptions in 1, 2 and (100a).
Is Late Merger required to explain point (100d) or (100f), the crucial points from our point of view.
Let us accept the assumed formulation of trace conversion (that is Fox's, given earlier in (15), generalized to degrees); let us grant that DHs are non conservative (which is correct for unequal comparators, and unclear for equatives – cf. Bhatt and Pancheva, 2004, fn 30 p.40); let us also grant that early merger of the DC to a DH the leads to a contradictory reading once QR and Fox's trace conversion has applied, noting that the interpretation problem arises because the degree variable in the trace would be restricted.

Agreeing that the sentences do not have contradictory meanings and that QR + late merger + trace conversion does not generate contradictory meanings shows that (on these assumptions) that late merger is empirically required. But this does not follow from any theoretical assumption (in particular, there is nothing wrong with generating a contradictory reading). It has to be stipulated.

The logic of Bhatt and Pancheva's proposal can readily be adopted without Late merger but with Neglect instead. Making explicit what Heim's formula hypothesis would be for DegreeP, DH carry a variable subscript and combine with two constituents ϕ and ψ that are formulas, as in (17):

(104) [[DH ϕ] ψ]

Under Heim's hypothesis,
(i) the DC after the determiner contains a silent argument, which is a variable coindexed with the DH.
(ii) when a DegreeP, it leaves as trace a variable coindexed with the DH (and no λ-abstractor is introduced).

The LF of a sentence such as *John is more handsome than Bill* would be, after QR of DegP:

(105) [[$_{\text{DegP}}$ more$_{\text{d}}$ [d than Bill]] [John is d handsome]]
ϕ = d than Bill
ψ = John is d handsome
(where *[than Bill]* denotes the (maximal) degree d' to which Bill is handsome, and the constituent *[d than Bill]* means d=d').

Once again, to integrate the copy theory of movement, and express it using Neglect, we must amend this. When a DegreeP moves, it leaves as trace a copy converted into an unbound variable restricted by the DC and coindexed with the DH: [38]

[38] Given that extraposition is scope assignment - the representation is closer to (i)
(i) John is [[$_{\text{DegP}}$ more$_{\text{d}}$ [than Bill]] handsome] [$_{\text{DegP}}$ more$_{\text{d}}$ [than Bill]]]
Where the rightmost *more* and the leftmost *than Bill* are PF neglected. LF Neglect is discussed in the text.

(106) a. [[$_{DegP}$ more than Bill]] [John is [more than Bill] handsome]]
b. [[$_{DegP}$ more$_d$ [d than Bill]] [John is [$_{DegP}$ more$_d$ [d than Bill]] handsome]]

First, as the same *more$_d$* (where we can take d to be the index of the DegP) is used, all variables introduced are the same. Given the option of DH Neglect, Neglect of the content of both DHs is excluded by FI, and Neglect of the content of the top one only, or of neither yields uninterpretable structures. The only option is therefore:

(107) [[$_{DegP}$ more$_d$ [d than Bill]] [John is [$_{DegP}$ ~~more$_d$~~ [d than Bill]] handsome]]

Now, rule (21) applies which makes explicit the role of the null DH, turning *[$_{DegP}$ ~~more~~$_d$ [d than Bill]]* into a unbound restricted degree variable as follows:

(108) [[$_{DegP}$ ~~det~~$_d$ [x than Bill]] → d ∧ [d than Bill]

This yields:

(109) [[$_{DegP}$ more$_d$ [d than Bill]] [John is [$_{DegP}$ d ∧ [d than Bill]] handsome]]

But (because of nonconservativity), this is contradiction, as it says that for any degree strictly greater than the degree to which Bill is handsome, John is handsome to this degree which is equal to the maximal degree to which Bill is handsome. Such a contradictory reading is not available for sentence . But there is another option which must therefore be stipulated as required: it is possible to Neglect the trace of Deg P as follows:

(110) [[$_{DegP}$ more$_d$ [d than Bill]] → [[$_{DegP}$ ~~more$_d$~~ [d ~~than Bill~~]]

yielding the actual reading:

(111) [[$_{DegP}$ more$_d$ [d than Bill]] [John is [$_{DegP}$ d] handsome]]

So we see that on point (100d), Late merger and Neglect can work equally well, and both suffer from the same shortcoming: they rule out the contradictory representation by stipulation, either by mandating Late Merger, or by requiring Neglect.
As for (100f), it falls out of the stipulation that Late merger be as late as allowed or from the stipulated mandatory character of Neglect as in (110) (or even total Neglect) to prevent the generation of contradictory readings.
But the prohibition against further scoping an extraposed constituent falls out of the general (albeit unexplained) observation we made earlier that extraposition IS scope attribution, and hence cannot be tampered with even if Late merger/Neglect is not involved at all.[39]

5.2.3 ACE

Antecedent contained Ellipsis (ACE) is another case in which Late merger is invoked (Fox, 2002). Here is a run of the mill case:

[39] A possibility compatible with (although still unexplained by) the alternative explanation for the ‘‘exactly as high’’ part of the generalization that Bhatt and Pancheva (2004) invoke, namely that it “follows from a generalization according to which overt A-bar movement blocks further covert A-bar movement (see Aoun, Hornstein, and Sportiche 1981). The movement of the degree head/QP, even though itself ‘‘covert,’’ counts as overt for this generalization because the ‘‘covert’’ movement has effects on phonology by providing a site for the overt merger of degree clauses/relative clauses.”

(112) John likes every boy Mary does <likes t>

The VP antecedent contains the ellipsis site: taking it as antecedent would result in a new VP still containing an ellipsis site. The standard analysis (Fiengo and May, 1994) has the object QR to outside its VP antecedent, so that this antecedent no longer contains the ellipsis site. This predicts that the QR-ed element should outscope the verb and this prediction is borne out:

(113) a. John was looking for a cook (that can cook Ethiopian food)
b. John was looking for a cook that I was

In the first example, the scope of the indefinite is either higher or lower than *look for*, but can only be higher the second.
This account however runs into problems with the copy theory of traces, since the trace of the QR-ed element also contains the ellipsis site. To solve this, Fox (2002) proposes a derivation similar to what Fox and Nissenbaum (1999) suggest for extraposition from object:

(114) [John was looking for a cook]. + QR (shown rightward)→
[[John was looking for a cook] a cook]. + Late Merge of Relative clause →
[[John was looking for a cook] a cook [that I was] + Ellipsis resolution→
[[John was looking for a cook] a cook that I was < looking for cook >] + Trace Conversion→
[a cook λx I was < looking for x. cook(x) >] λy John was looking for y.cook (y)]

This predicts that ACE should be impossible with head raising relatives: they cannot involve Late merger of the relative clause to the head since the head originates inside the relative clause.
But cases that are analyzed as necessarily head raising relatives are fine in ACD, witness:

(115) a. None of the cubists painted the portrait of himself that Rembrandt did
b. Henri does not drink the alcohol that Arthur does
c. The US did not keep on its dissidents the tabs that France did

In the first example, one prominent reading is a kind reading (the kind of portrait…); another (perhaps a subcase of the first) has an implicit degree comparison (as good a portrait as…). In both cases, one of the pragmatically sensible reading is a sloppy reading, in which the reflexive is interpreted as semantically bound both high and low (None of the cubists painted as good a portrait of himself as the portrait of himself that Rembrandt painted). The second example readily allows an amount reading (Henri does not drink as much as Arthur does). The third involves idiom chunks. Treating ACE in terms of Neglect easily solves this problem. It yields the following derivation:

(116)a. [John was looking for a cook that I was]. + QR (shown rightward)→
b. [[John was looking for a cook that I was] a cook that I was] Neglect →
c. [[John was looking for a cook ~~that I was~~] a cook [that I was] + Ellipsis resolution→
d. [[John was looking for a cook ~~that I was~~] a cook that I was < looking for cook ~~that I was~~>

Note crucially that Neglect is possible in step b to c because QR creates two copies of the constituent *that I was*. In particular, it is not possible to neglect the relative clause (to get rid of the ellipsis site) otherwise, e.g. after Ellipsis resolution as below:

(117)a. [[John was looking for a cook ~~that I was~~] + Ellipsis resolution→
b. [[John was looking for a cook that I was <looking for a cook that I was>] Neglect →
c. [[John was looking for a cook that I was < looking for cook ~~that I was~~ >]

Neglecting *that I was* violates FI.

An alternative treatment in terms of Takahashi and Hulsey's Late merger of the NP+ the relative clause would a priori be possible. The derivation would proceed as follows:

(118) [John was looking for a] + QR (shown rightward)→
[[John was looking for a] a]. + Late Merge of NP+ Relative clause →
[[John was looking for a] [a [cook that I was]]] + Trace Conversion→
[[John was looking for a x] [a [cook that I was]]]+ Ellipsis resolution→
[[John was looking for a x] [a [cook that I was looking for a x]]]+ Ellipsis resolution→
[a cook λx I was < looking for x) >] λy John was looking for y]

This is allowed under their version of Trace conversion and the uncontroversial assumption that raising relatives have the structure [D [NP…]]. But because the NP+ the relative clause are late merged once QR has applied and moved the object DP to a VP external position, this predicts that Condition C effects are bled, not only for to offending names inside the relative clause, but also in the head NP. This looks incorrect:

(119)a. Mary already showed him all the pictures that Bill thinks she should <show…>
b. Mary already showed him all the pictures of Bill that you think she should <show…>

(120) a. Mary wanted to introduce him to more friends than Bill hoped she would <want …>
b. Mary wanted to introduced him to more friends of Bill than you hoped she would <want...>

While the first sentence does not show a Condition C effect if *him* and *Bill* are coreferential, the second does. This shows that the relative clause may well have been late merged, the head NP could not have. An approach in terms of Neglect of the relative clause alone makes the right prediction.

6 Conclusion

The purpose of this article was to simplify the mapping mechanisms from syntactic representations to semantic interpretation. Its central idea is based on the realization that Chomsky's 1995 Principle of Full Interpretation allows Neglect at the interfaces, and to exploit this option to subsume a variety of mechanisms that have been proposed to manage the syntax to semantics mapping. The key proposals include:

- A reformulation of Fox's 2002 Trace conversion capitalizing on a proposal found in Heim (1997).
- A formulation of Local Predicate Saturation extending to adjunct modifiers.
- A construal of Neglect yielding Vehicle Change good enough to subsume late NP insertion (Lebeaux, 1991) or Wholesale Late Merger (Takahashi and Hulsey, 2009).
- A reanalysis of the complement/adjunct asymmetry with respect to Condition C that had motivated Lebeaux's 1991 Late Adjunct Merger in terms of the independently established argument /predicate asymmetry under reconstruction.
- A reanalysis of Fox and Nissenbaum's 1999 treatment of Extraposition and a new way to derive Williams's generalization on Extraposition.
- A replacement of Late Adjunct Merger when it is needed by (Adjunct) Neglect and a correlated reanalysis of Fox's 2002 treatment of Antecedent Contained Ellipsis or of Bhatt and Pancheva's 2004 analysis of comparative and result clause extraposition.

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