# ON THE PREFERENCE PRINCIPLE AND SOME ASPECTS OF RECONSTRUCTION IN A' AND A CHAINS IN POLISH

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## 1. Introduction

In order to account for the effects of reconstruction in the Minimalist system, in which binding relations are said to hold at the interpretive level of LF, Chomsky (1993: 41) proposes the following:

(1)  The Preference Principle:
     Minimize the restriction in the quantifier position.

Any Quantifier Phrase is said to involve the following three elements:

(2)  [Which book] did you find t?

(2a) The Quantifier/Wh expression: *which*

(2b) the restriction: *book.*

(2c) the scope: the clause

   In the Minimalist Program the splitting of the Quantifier Phrase into the quantifier itself and the restriction sanctioned by the Preference Principle seems to play an important role: because of the Copy Theory of Movement, there is no countercyclic displacement but a partial deletion of the Copy in the target position and a deletion of the quantifier from the bottom copy. Economy conditions seem to be met as well, as a minimal movement (of Wh) is required to satisfy a [+wh] formal feature of C. The whole Wh Phrase moves up the phrase marker only because of language specific pied-piping requirements. Compare English and Polish in this respect:

(3a) How many books did Mary read t?

(3b) [How many x] did Mary read [x: books]

(3c)  Ile książek Maria czytała t?

(3d)  [ile (x)] Maria czytała [(x): książek]?

(3b) is an illegitimate spell-out structure in English but (3d) is a possible spell-out structure in Polish. This contrast seems to confirm a widely accepted view that 'Slavic languages tend to wear LF representations on their sleeves'.

Chomsky's Preference Principle is supposed to cover the following cases:

(4a)  John$_i$ wonders [which book about Bill$_k$] he$_k$ read t?

(4b)  John$_i$ wonders [which x] he$_k$ read [x: book about Bill$_k$]

The Preference Principle is not an inviolable Economy Condition but it can be overcome by other more crucial principles such as the Theta Criterion:

(5)   John wondered [which picture of himself] Bill saw t?

(5a)  John wondered [which x] Bill self-saw [x: picture of t]?

(5b)  *John self-wondered [which x] Bill saw [x: picture of t]?

(5c)  John self-wondered [which x, x: picture of t] Bill saw t?

Example (5) allows for two interpretations of the reciprocal pronoun; it can refer either to *Bill* or *John*. The former construal is favored by the Preference Principle, however the representation corresponding to both reconstruction and root subject coreference (5b) is ruled out, allegedly due to the violation of the Theta Criterion.[1]

The Preference Principle seems adequate to cover the following cases in Polish, (6b) and (6d) are reconstructed representation of the question at the interpretive level of LF:

(6a)  [ile książek o Janie] on przeczytał t?

(6b)  [ile x] on przeczytał [x: książek o Janie]?

(6c)  [ile książek o sobie] Maria czytała t wczoraj?

(6d)  [ile x] Maria czytała [x: książek o sobie] wczoraj?

In (6) Binding Principle C requires disjoint interpretation of *on* and *Jan* which is computed on the reconstructed representation in (6b). In (6c) Binding Principle A

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[1]  It seems possible to exclude (5b) on the basis of the Minimal Link Condition (MLC) rather than the Theta Criterion; if the cliticization of the reflexive pronoun is to be treated as any other type of movement it should target the closest potential target (Infl) and form the most minimal chain link.

(5b)  *John self-wondered [which x] Bill saw [x: picture of t]?

In (5b) the trace of *self* is closer to the embedded Infl than to the matrix Infl where it is supposed to land to produce the required coindexation (with *John*). The Specified Subject Condition precludes the cliticization of *self* onto the embedded Infl and coindexation with the matrix subject.

requires a c-command relation to hold between the subject and the reflexive pronoun which is established in the reconstructed form in (6d).

## 2. Problems with the Preference Principle

Problems with the Preference Principle come from two areas:

(A)   The displaced category must be in two positions at the same time. This affects Chomsky's (1993, 1995) system where one copy is left for interpretation at LF.

(B)   Why does Principle C require reconstruction with respect to the subject position but not necessarily with respect to other positions such as the indirect object position?

Cases involving contradictory properties of the interpreted copy, and thus problematic on count (A) above, are discussed in the literature, mainly (Brody 1995, 1996) and Epstein et al. 1998).

### 2.1. PDFI outstrips the Preference Principle

Brody (1995) finds fault with the Preference Principle in several cases.

First, he raises the issue of examples involving reflexives, thus allegedly able to overrun the Preference Principle, which are placed in Wh elements *in situ*:

(7a)  John wondered [which picture of himself] Mary saw t?

(7b)  *John wondered when Mary saw [which picture of himself]

(7c)  John wondered [which picture of himself] when Mary saw t

It is not unreasonable to expect (7c) to be a legitimate LF representation of (7b) in Chomsky's (1993) derivational system, in which case the anaphor finds itself in the c-domain of the matrix subject at LF, the relevant level for interpretation of binding relations. This does not seem to be the case, as (7b) shows.

Second, Brody (1995) provides the following example in which rules of coreference impose contradictory requirements on the LF representation:

(8a)  Mary wondered [which claim that pictures of herself disturbed Bill] he made t?

(8b)  Mary self-wondered [which x, x: claim that pictures of t disturbed Bill] he made t?

(8c)  Mary self-wondered [which x] he made [x: claim that pictures of hereself disturbed Bill]

In (8b) the requirement on the interpretation of reflexives forces the restriction to appear in the nonreconstructed position but at the same time Principle C forces the restriction to appear in the reconstructed position in (8c). Neither option provides a legitimate LF representation.

Further evidence against the Preference Principle is provided by scope reconstruction phenomena. Consider the following example:

(9a)   Mary wondered [how many pictures of herself] everyone painted t

(9b)   Mary wondered [how many x] everyone painted [how many x, x: pictures of herself]?

This example may have two interpretations: a collective one and a distributive one. In the collective reading, Mary is interested in the number of portraits produced by all painters. In the 'distributive' reading Mary wonders how many portraits every single painter produced. For the 'distributive' reading to be read off the LF representation the universal quantifier must c-command the existential quantifier (9b) within the embedded clause, as universal quantifiers seem clause bound, but then the anaphor finds itself out of the c-domain of the matrix subject.[2] All these problems do not arise in Brody's representational system, where there is no room for Move alpha and the structure of (7) at the (only) level of representation called the Lexico-Logical Form, is:

(10)   John wondered $SM_x$ when Mary saw [which picture of himself]$_x$

Here SM stands for an expletive/Scope Marker of which the Wh phrase *in situ* is an associate. In the system of Brody's Perfect Syntax categories as such are not interpreted but their chains are. Brody's approach to interpretation of multiple copies is called Partially Determined Full Interpretation (PDFI). The requirement that there be only one contentive category within a given chain is a PF requirement: operation Spell-out allows only one contentive member of a given chain to survive. The multiple copies are still available for interpretation at LF. The examples above cease to be problematic in a system based on PDFI:

(11)   Mary wondered [which claim that pictures of herself disturbed Bill] he made [which claim that pictures of herself disturbed Bill]?

Now Binding Principles A and C apply to distinct copies; Principle C to the copy in the reconstructed position and Principle A to the copy in the [spec,C] position. The same strategy works for (12):

(12)   Mary wondered [how many pictures of herself] everyone painted [how many pictures of herself]?

Here, Binding Principle A operates on the higher copy and the distributive interpretation is available on the interpretation of the bottom copy.

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[2] Both contradictory requirements would be satisfied in the structure with the quantifier reconstructed but the restriction left in embedded [spec,C]:

(9c)   *Mary wondered [x pictures of herself] everyone painted [how many x]

This representation is ill formed, as the quantifier does not find itself in a scope position at LF.

Brody (1995) also deals with contradictory data with respect to reconstruction effects in A chains. Reconstruction may not take place in regular subject raising cases, as this should produce Principle C effects:

(13a)  The claim that John was asleep seemed to him to be beside the point.

(13b)  The claim that John was asleep seemed to him [the claim that John was asleep] to be beside the point.

On the other hand the available distributive interpretation of quantifier scope in (14a) below shows that reconstruction is possible. A similar conclusion is drawn from inverse binding patterns with Experiencer predicates (14c) in Belletti and Rizzi (1988):

(14a)  Some friend of John seemed to him to have spoken to every senator.

(14b)  Some friend of John seemed to him [some friend of John] to have spoken to every senator.

(14c)  Each other's pictures worried Mary and Tom.

(14d)  Each other's pictures worried Mary and Tom [each other's pictures].

In order to account for these contradictory requirements of A chains Brody assumes that Binding Principle C scans the structure only for NPs with their case features checked,[3] thus only for NPs at the head positions within A chains or in A' positions, whereas scopal reconstruction and anaphoric linking to an antecedent can be based on any copy within the A chain, including the bottom copy. Thus for (14b) the PDFI predicts that the bottom copy provides for the inverse scope of quantifiers and the top copy properly binds *him*. Anaphoric binding in (14d) is another consequence of the multiple LF copy approach.[4]

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[3]   Brody (1995) tries to derive his assumption from Chomsky's (1981) Thematic Visibility Condition: (copies of) categories in caseless positions, such as the tail of an A chain, cannot refer and Binding Principle C applies to referring categories.

[4]   Note, that theses assumptions concerning reconstruction within A chains need not ruin simple derivations based on the VP internal subject hypothesis:

(15a)  *Himself shot [John] [himself] John.

The bracketed categories mark the copies/traces of the subject and the object at LF. Considering the copies, Binding Principle A is satisfied, incorrectly, and Binding Principle C is also satisfied but the derivation may be said to crash as a result of incompatibility of case features on the object (Accusative) and the head of TP (Nominative). The following construction can possibly converge as gibberish at LF, courtesy of the violation of selectional restrictions:

(15b)  *%?A picture of himself [John] [a picture of himself] shot John.

With both the technical and interpretive reservations removed, a possibility of grammatical derivation opens up:

(15c)  A picture of himself worried [John] [a picture of himself] John.

In essence, a chain including multiple copies is present at (L)LF, which, incidentally, seems to weaken this interface level of interpretation. As to how a chain with multiple copies receives a particular interpretation, Brody (1995: 90) explains:

> There is no deletion within syntax proper, since there are no derivations at all apart from projection and lexical insertion. Presumably principles of interpretation will carry out deletion of extra copies present at LF.

It seems then that reaching an interface level, LF in this concrete case, does not end the work of (Brody's impoverished) syntax producing indeterminate structures.

## 2.2. Derivational c-command outstrips the Preference Principle

An entirely different system based on derivational c-command and challenging the Preference Principle is presented in Epstein et al. (1998). If Brody's system can be called radically representational, the system presented in Epstein et al. (1998) is certainly radically derivational. The basic tenet of the system is based on the idea that an interpretive level of the LF interface need not be posited in a truly derivational system, where computational steps should immediately feed interpretive procedures, thus for example Binding Principles should apply at any point in the computation, crucially, at the stage where the phrase marker may be still incomplete.

The core grammatical concept involved in determining scope and binding properties, c-command, is defined derivationally (Epstein et al. 1998: 61):

(16)   Derivational c-command
       X c-commands all and only the terms of the category Y with which X was concatenated by Merge or Move in the course of the derivation.

Assuming (16), consider the best case for the Preference Principle:

(17a)  John wondered [which picture of Bill] he saw

(17b)  he saw [which picture of Bill]

At a certain point in the derivation of (17a), the process of computation arrives at the stage (17b), where a number of syntactic relations are established, including the relation of c-command holding between *he* and *Bill*, once the former has been introduced into the phrase marker via operation Merge. Following Lebaux (1988), Condition C is said to apply at every point of the cyclic derivation. Thus if it applies at this point, *he* and *Bill* are interpreted as disjoint from each other throughout the entire derivation.

For the case of two possible antecedents for anaphora, the same strategy based on the relative timing of Binding Principle A application and merging of the embedded and root subjects is applied:

(18a)  John wonders [which picture of himself] Bill saw t.

(18b)  Bill saw [which picture of himself].

If Binding Principle A applies at the point in the derivation when the embedded subject has been merged, the anaphoric pronoun receives an interpretation in which it is coreferential with *Bill*. But Condition A can also apply following Wh movement and then the anaphoric pronoun is c-commanded by the next appropriate term merged in, that is *John*.

Now consider the Complex Noun Phrases displaying the contrast between the complements and adjuncts. In (19) *he* is said to be disjoint from *John*, whereas in (20) they can be coreferential:

(19a)  [which claim [that John was asleep]] was he willing to discuss?

(19b)  he was willing to discuss [which claim [that John was asleep]]

(20a)  [which claim [that John made]] was he willing to discuss?

(20b)  he was willing to discuss [which claim]

(20c)  he was willing to discuss [which claim [that John made]]

In (19) the clausal complement of the noun is introduced cyclically and Binding Condition C applies at the stage indicated in (19b) when the subject has been merged in the phrase marker. As Condition C is said to apply at every stage in the derivation, thus practically as early as possible, *he* and *John* receive disjoint interpretation.

In (20) the relative clause with an adverbial function need not be introduced into the derivation cyclically. The derivation reaches the point indicated in (20b), where the relation of c-command is established between *he* and other terms of the phrase marker. Next, the adverbial clause containing *John* is introduced noncyclically, producing (20c). On the definition of derivational c-command in (15), *he* does not c-command into the adverbial clause introduced noncyclically, as it was not yet a term of category IP with which *he* was merged.[5] Consequently, throughout the derivation, *he* does not c-command *John* and Binding Principle C does not apply, although, representationally, it would seem otherwise. Noncyclic concatenation (Merge or Move) disables derivational c-command.

As for the objections raised by Brody, the radical derivational Minimalist model bases its answer on Lebaux's claims concerning the timing of application of Binding Principles. Consider the case below:

(21a)  Mary wondered [which claim [that pictures of herself disturbed Bill] he made t?

(21b)  he made [which claim [that pictures of herself disturbed Bill]?

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[5] Technically speaking, the category with which 'he' is merged should be traditionally represented as I' but at that point in the derivation it was the maximal projection of I, hence IP. Intermediate categories are not accessible to computation.

Following repeated applications of Merge and Move the derivation of (21a) reaches the stage in (21b), when *he* has been merged with the syntactic object IP of which *Bill* is a term. Thus the relation of c-command is established between *he* and *Bill* and Binding Principle C invariably applies and determines their disjoint interpretation. Binding Principle A need not apply at every point in the derivation, thus it need not apply yet. A few applications of Merge and Move later, the derivation reaches the stage marked in (21a), where *Mary* has been introduced into the derivation, c-commanding all the terms of the root IP. Now Binding Principle A applies, interpreting *herself* coreferential with *Mary*.

The system proposed in Epstein *et al.* (1998) can also deal with Quantifier Scope Interactions in A chains. Its position on the subject of scope is based on c-command and the following idea, stemming from Lebaux's treatment of Binding Principle A:

(22)    Derivational Determination of Scope:
        The scope of alpha is determined at any point in the derivation. Additionally, a category can have its scope determined only once in the derivation.

Consider the following constructions in which either scope interraction between the two quantifiers is available:

(23a)    Two women seem [t to dance with every senator].

(23b)    [two women to dance with every senator]

Prior to raising, the object in (23b) is formed. The scope of the subject quantifier is determined at this point as the embedded clause.[6] Hence the possibility of scopal interractions between the two quantifiers. At a later stage in the derivation subject raising takes place. If the scope of the subject quantifier is determined at this later point, inverse scope reading is excluded. This is exactly what happens below, where Binding Principle A must be satisfied at some point in the derivation.

(24a)    Two women seem to each other [t to dance with every senator].

(24b)    [two women to dance with every senator]

For (24a) only one interpretation of scope is available, the one in which the subject quantifier scopes over the distributive quantifier inside the PP. Once again, the embedded clause has been formed and the scope of the subject quantifier could be determined now but that would produce the wrong result. Epstein *et al.* need to combine the determination of scope with the determination of Binding Principle A: they must apply jointly. Thus only (24a) is the legitimate object for the determination of scope and anaphoric binding.

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[6] Epstein et al. (1998) assume some version of May's (1985) QR to allow for the clausal scope of the quantifier inside PP.

### 2.3. Reconstruction in A-chains

An entirely different system based on reconstruction is proposed in Hornstein (1995, 1996a, 1996b), where reconstruction within A chains and Quantifier Scope Interactions (QSI) without the rule of QR are discussed. Hornstein opts for a system in which only **one copy** within a chain is interpreted at LF, preferably a copy in an A position or a category overtly displaced into an A' position.

In this system reconstruction comes for free without the need for separating the quantifier from its restriction. Thus reconstruction within A chains is made to look regular and reconstruction in A' chains is its more complex sister. Both are trumped by Economy Conditions and more relevant principles of grammar.

As for the issue of QSI without QR, Hornstein claims that any copy in an A chain can be arbitrarily selected for interpretation at LF, provided other independent grammatical conditions are not violated. Consider a classical case for QSI:

(25a)    Some student attended every lecture.

(25b)    [some student] [every lecture] [some student] attended every lecture.

Only one copy within each chain is submitted to interpretation, the other one obligatorily deletes, although the choice is arbitrary. The interpretation of (25a) in which the existential quantifier takes scope over the universal quantifier is based on an LF representation in which the copy of the subject c-commands the (copy of) the object. The only representation in which the universal quantifier has the existential quantifier within its scope requires deletion of the subject sopy in [spec,I] and an object copy in its thematic position. The remaining copies in [spec,Agro] and [spec,V] produce a relevant configuration.

One of the restrictions on the choice of copies presented for interpretations at LF is the idea that an expletive with a copy of the associate adjoined to it is not an interpretable LF object. Thus the contrast between the two examples below:

(26a)    *There seemed to each other two linguists to be given good positions.

(26b)    [there [two linguists]] seemed to each other two linguists to be given good positions.

(27a)    Two linguists seemed to each other to be given good positions.

(27b)    [Two linguists] seemed to each other [two linguists] to be given good positions.

In (26b) the copy in root [spec,I] is not an interpretable LF object, therefore the anaphor is not bound and Binding Principle B forces the crash of the derivation. In (27b), in principle either copy within the A chain of the root subject could be chosen for interpretation but Binding Principle B, as an LF interface condition, forces the interpretation of the copy in root [spec,I]. Note that in Hornstein's derivational system leading to interface representations, Binding Principles are legitimate LF filters

striking out inconvenient copies on the assumption, that only one copy per chain is allowed at LF.[7]

## 3. Reconstruction in A' chains in Polish: a single copy seems enough

What follows is a presentation of some problems concerning reconstruction within A and A' chains in Polish. It seems possible to propose a system in which one copy per chain is sufficient to satisfy contradictory criteria of binding and scope and in which the LF representation is satisfactorily disambiguated.

As for the objection expressed in (B) as to why Principle C requires reconstruction with respect to the subject position but not necesserily with respect to the indirect object position, consider the structure below, adapted from Willim (1989):

(29a) Którą  pocztówkę Jana$_i$  z Paryża Maria oddała mu$_i$  przedwczoraj t?
      which  postcard John's from Paris Mary returned him the day before yesterday.

(29b) [którą x]  Maria [x: pocztówkę Jana$_i$ z Paryża]  oddała  mu$_i$ t
      [which x]  Mary  [x: John's postcard from Paris]  returned him t
      przedwczoraj?
      the day before yesterday

(30a)*[Którą książkę o Janie$_i$] czytał on$_i$ wczoraj t?
      [which book about John] read he yesterday t?

(30b) *[którą x]  czytał on$_i$ wczoraj   [x: książkę o Janie$_i$]
      [which x] read   he yesterday [x: book about John]

Consider (29b), one of the possible two  interpretations of (29a), in which *mu/him* and *Jana* are coreferential. This interpretation hinges on a lack of a Principle C violation which seems inevitable if the restriction is fully reconstructed into its position within VP (indicated by t) and finds itself in the c-domain of the indirect object. Thus (29b) shows the structure with only partial reconstruction of the restriction to a position outside the c-domain of *mu/him*. Note, that there is no apparent reason why, on the strength of the Preference Principle, the full reconstruction of the direct object into its thematic position is not the only option. Especially, as none of the more general grammatical principles such as the Theta Criterion overrules complete reconstruction of the restriction from the position in [spec,C] to the position

within VP. More importantly, one might ask  which principles of grammar allow for partial reconstruction, as in the indicated interpretation of (29) or complete reconstruction, in which *mu/him* and *Jana* have to be disjoint? Interestingly, the option of no reconstruction is disallowed, as (30) shows.

Now, consider more complex cases in Polish which suggest that more than one copy of a displaced category should be accessible to interpretation at LF. They basically mirror Brody's examples:

(31)  [ile książek Jana$_i$ o sobie$_k$]          Maria$_k$ oddała mu$_i$ t po  wakacjach?
      [how many books John's about self] Mary returned him  after the holiday

Consider a possible interpretation of (31) in which *Jan* has written several books about *Maria*, thus the interpretation involves the following coreference relations: *Jana* and *mu* are coindexed and *Maria* and *sobie* are coindexed. These two pairs of coindexed nominals impose mutually exclusive demands on reconstruction:

(32a) [ile x, x: książek Jana$_i$ o sobie$_k$]          Maria$_k$ oddała  mu$_i$
      [how many x, [x: books John's about self]] Mary   returned him
      [x] po  wakacjach?
      [x] after the holiday

(32b) [ile x]          Maria$_k$ oddała  mu$_i$ [x: książek Jana$_i$ o sobie$_k$]
      [how many x] Mary   returned him [x: books John's about self]
      po wakacjach?
      after the holiday

The relationship between *Jan* and *mu* based on the Binding Principle C prohibits reconstruction and requires that the restriction be interpreted in the position of the quantifier (32a). On the other hand, the relationship between *Maria* and *sobie* requires full reconstruction of the restriction in  (32b).

Certainly, the systems presented above based on PDFI and multiple copies (Brody 1995, 1996) or a timing factor and derivational c-command (Epstein *et al.* 1998) can be applied to analogous Polish data at no extra cost. It is however possible that another system may be constructed for Polish and admitted by UG.

First, notice that with respect to the phenomena of Binding, Reconstruction and scope, Polish seems to differ from English in two major ways: it disallows Long Distance (Wh) Movement and anaphoric binding across a Tensed Clause boundary (33a) and inverse binding patterns in Experiencer predicate constructions (33b), the facts discussed in Willim (1989) and Witkoś (1995) among others:

(33a) *Piotr$_i$ jest ciekawy [[które książki o sobie$_i$]      Jan$_k$ szczególnie lubi t]?
       Peter   wonders    [which books about himself] John particularly likes?

(33b) * [swoje$_{i,k}$ portrety]  rozczuliły Piotra$_i$ i   Zosię$_k$.
       [Each other's portraits] moved     Peter   and Sophie.'

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[7]  No wonder then, that the problematic cases of lack of reconstruction within an A chain and lack of a Principle C effect can be solved by a reference to the LF Filter strategy:

(28a) Some friends of John seem to him to be completely crazy.

(28b) [some friends of John] seem to him [[some friends of John] to be completely crazy].

Any copy of the relevant nominal phrase within the embedded clause must be deleted on the strength of Binding Principle C.

Notice that most problems for the Preference Principle in English stem from the fact that both the root and the embedded subjects can be anaphoric binders.

Assume, that Reconstruction does indeed come for free in A' chains and that LF as an interface level is subject to the requirement of optimality: it should be optimally unequivocal. Any indeterminacy of LF in terms of copies is admitted only as a Last Resort option, in the spirit of Reinhart's (1995) claim concerning Last Resort violations of LF interface conditions.[8] Additionally, LF representations may be different among languages in a controlled way: the universal principles are the same but they may be satisfied in slightly different ways. Such a limited variation in the LF representation seems admissible in the MP; consider multiple Wh constructions in Polish and English:

(34a) Kto co t lubi t?

(34b) Who t likes what?

(34c) Who$_{WH}$ t likes what$_{WH}$?

In Polish both Wh operators bind their traces while in the LF representation of the English multiple construction only the first operator binds its trace while the other operator is interpreted as a variable bound by a nonselective binder. The LF representations are minimally different although the universal condition on nonvacuous quantification is observed in both. Assume also, that UG allows for a controlled variety in the set of functional projections manifest in the grammar of a given language, in keeping with the claims made in Thrainsson (1996).[9]

There seems to be a way of solving both problems (A and B) facing the Preference Principle on the assumptions made above, thus salvaging the single copy approach and providing rationale for the Preference Principle, at least in Polish. As-

sume that the structure of the clause accommodates a phrasal projection called Reconstruct (Phrase). In terms of its prominence in the clause it occupies the following position:[10]

(35a) {Topic/Wh-phrase {Subject 1 {Reconstruct {Object-indirect} {Object-direct {Subject 2}}}}}

(35b)



In terms of the structural identity of the positions marked in (35), I take position SUB$_1$ to be [spec,I], OBPs are functional projections in which object case checking is performed, [AgrioP] and [AgroP] respectively and SUB$_2$ is the [spec,V] position.

An independent hint at the presence of the projection Reconstruct may come from constructions with object quantifiers which tend to occur preverbally with regular intonation:

(36a) Maria   tu    wszystkich zna.
       Mary    here   all       knows
       'Mary knows everybody here.'
(36b) Jan     już     wszystko opowiedział.
       John   already all      said
       'John has already said everything.'

The advantage of (35) is that the restriction on the quantifier can be said to reconstruct at least into Reconstruct in all the Polish examples mentioned above.

Reconsider (31) with respect to the structure in (35):

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[8] Reinhart (1995: 50) defines interface economy in the following manner: "Under the markedness view of interface economy, the calculation involved in marked derivations is highly costly. It requires comparing two derivations – one violating economy, the other not – and deciding whether they end up equivalent at the [JW: LF] interface. Only if they don't, the economy violation goes through."

Assume that it is more economical at the level of LF to preserve only one copy of a given constituent for interpretation; LF interpretive procedures apply to a particular category/copy only once. Otherwise, that is under Brody's PDFI or Epstein's Derivational C-command, they apply repeatedly to the same category by applying to its several copies for interpretation of their different subparts. The less economical derivations are admitted only if the interpretation of various subparts of a given constituent strewn across its different copies produces an outcome unprovided for in the more economical derivation.

In this sense, the system of reconstruction based on (35) and a single LF copy seems more economical than either Brody's or Epstein's applied to Polish.

[9] Thrainsson (1996) proposes the following idea: The Real Minimalist Principle:
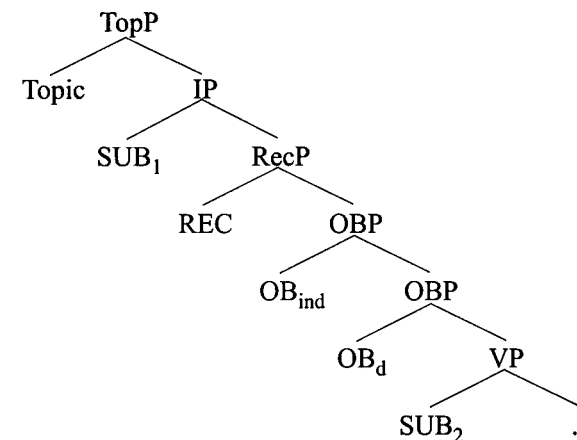
Assume only those functional categories that you have evidence for.

The medial position of object quantifiers in Polish and the reconstruction facts to be discussed below can be used as sufficient evidence for postulating the functional projection of Reconstruct Phrase in Polish.

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[10] In the system of derivations proceeding by Phase, Chomsky (1998) [spec, Rec] corresponds to the edge of vP.

(37) [ile x]      Maria$_k$ [x: książek Jana$_i$ o sobie$_k$]   oddała  mu$_i$ t
    [how many x] Mary [x: books John's about self] returned him
    po    wakacjach?
    after the holiday

In this configuration the conflicting requirements of coindexation are met in a single copy approach: *Maria* c-commands *sobie* in keeping with Binding Principle A and *Jan* is out of the c-domain of *mu*, in line with Binding Principle C. Reconstruction of the restriction into Reconstruct is the more parsimonious option. The other option is to perform full Reconstruction, delete the restriction in the operator position and save it in the VP internal object position in which case *mu* and *Jana* refer to different people.

Now consider another construction with mutually exclusive requirements on interpretation:

(38) Wielu książek  o   Janie$_i$ on$_i$ nie czytał.
    many  books about John he not read
    'He didn't read many books about John.'

The interpretation that must be accounted for is the one in which the quantifier takes scope over negation (expressed by asymmetric c-command of the latter by the former) and *Jan* and *on* are different people. The system based on (35) generates the following LF representation with the restriction reconstructed:

(39) [wielu x] on$_i$ [x: książek o Janie$_i$] nie czytał t.
    [many x] he [x: books about John] not read t.

Consider a more complex version of the previous example, in which *Maria* and *sobie* are coindexed:

(40a) Wielu książek Jana$_i$     o sobie$_k$ Maria$_k$ mu$_i$ nie  oddała.
    many  books John's about self   Maria   him not returned
    'Maria didn't return him many of John's books about her.'

(40b) [wielu x] Maria$_k$ [x: książek Jana$_i$ o sobie$_k$]  mu$_i$ nie oddała t.
    [many x] Mary  [x: John's books about self] him not returned

(40b) provides the required configuration; the fact that *Jana* is a closer potential binder for *sobie* is not a problem, as anaphoric binding in Polish is insensitive to the Nominative Island Constraint.[11] The system based on (35) does not seem optimal, as

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[11] Note the double possibility of anaphoric binding in the simple case of:
    (40c) Jan$_i$ czytał [Zosi$_k$ książkę o sobie$_{i/k}$]
        John read Sophie's book about self

it postulates a new projection and it cannot account for all the cases in English, where the clausal boundary is crossed. It seems, however, that it may work for some English examples as well:

(41a) Which of John's$_i$ books about her$_k$ did Mary$_k$ give him$_i$ t yesterday?

(41b) [which x] did Mary$_k$ [x: John's$_i$ books about her$_k$] give him$_i$ t yesterday?

### 3.2. Reconstruction and A-chains in Polish

Turning to A-chains, note that in every clause the two subject positions [spec,V] and [spec,I] are linked by an A chain which presents contradictory characteristics: in some cases it seems to disallow Reconstruction, whereas in others it forces it.

The A-chain below does not seem amenable to reconstruction. In (42a, b) *go* and *Jana* cannot be coindexed, in keeping with Binding Principle C, while in (42c, d) they can:

(42a) *Rozczarowały go$_i$ nowe  biografie     Jana$_i$.
    disappointed him new  biographies of John
    'New biographies of John disappointed him.'

(42b) *[?] rozczarowały go$_i$ [nowe biografie     Jana$_i$]
    disappointed  him  new biographies of John

(42c) Nowe  biografie     Jana$_i$ rozczarowały go$_i$.
    new   biographies of John disappointed him

(42d) [nowe biografie Jana$_i$]  rozczarowały  go$_i$ t.
    new  biographies of John  disappointed  him

It seems that some of Hornstein's (1996a, b) assumptions could be useful in accounting for lack of Principle C effects in these cases:

(42e) [pro [nowe biografie Jana$_i$]] rozczarowały go$_i$ [nowe biografie Jana$_i$]
    [new biographies of John]    disappointed him [new biographies of John]

(42f) [nowe biografie Jana$_i$]    rozczarowały go$_i$ [nowe biografie Jana$_i$].
    [new biographies of John] disappointed him [new biographies of John]

Assume, that in (42) and similar constructions, the subject position in Polish is occupied by an expletive *pro*, an equivalent of English expletive *there*. In fact, assume that Polish has its own brand of transitive expletive constructions. This assumption has two welcome results: first, from the perspective of the computational system the expletive *pro* may be said to engage Tense and check its strong [+d] feature, otherwise known as the universal EPP (Chomsky 1995), second, adjunction of the copy of the associate to the expletive pro does not result in a legitimate LF object, hence the obligatory presence of Principle C effects in (42a). In this example *go*

and *Jana* must not be coreferential.[12] This is not so in (42c), which is constructed out of a slightly different Initial Numeration lacking the expletive *pro*, where two interpretations are available; if the copy in [spec,I] survives LF deletion, *Jana* and *go* may be coreferential, if the copy in [spec,V] survives LF deletion, the coreference pattern is as in (41a).

Assume, that as in Chomsky's and Hornstein's systems, Binding Principles apply in a filter like manner at LF. Therefore, the example below is unproblematic, assuming that it involves NP raising:

(44a) Wydawało  mu$_{*i}$ się [że Jan$_i$ jest chory]
      seemed (to) him refl   that John is ill
      'It seemed to him that John is ill.'

(44b) Jan   wydawał się sobie [Jan zbyt szczupły]
      John seemed   refl (to) self [John too slim]
      'John seemed to himself to be too slim.'

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[12] The assumption concerning the inaccessibility of the interpretation of postverbal subjects in the position of [spec,I] at LF need not cause problems for the following cases:

(43a) [swoich$_i$ braci] Jan$_i$ t' odwiedzał t w niedzielę.
      self's brothers John   visited        on Sunday
      'His brothers, John visited on Sunday.'

(43b) [swoich$_i$ braci] *pro* t' odwiedzał Jan$_i$ t w niedzielę.
      Self's brothers         visited    John on Sunday

In (43a) the object can minimally reconstruct into the position of t' (Reconstruct Phrase) to find itself in the c-domain of the subject and satisfy Binding Principle A. This option is, however, unavailable in (43b); the adjunction of *Jan* to *pro* at LF creates a formally correct but uninterpretable object. In order to meet the requirement of anaphoric binding, the object must reconstruct lower, into its original VP internal position marked with t. Note, that the system developed in this paper and based on the structure in (35) is not very restrictive and does allow for both partial reconstruction into [spec,R](Reconstruct) and full reconstruction. If both types of reconstruction are available, independent conditions of grammar (here: Binding Conditions) decide which option is selected.

Independent support for this Binding Conditions driven idea of either full or partial reconstruction comes from certain facts discussed in Witkoś (1993):

(43c) Jan$_i$ powiedział obu   dziewczynom$_k$ o sobie$_{i/k}$.
      John told         both girls           about self
      'John told both girls about himself/each other.'

(43d) Jan$_i$ powiedział o sobie$_{i/*k}$ obu dziewczynom$_k$.
      John told            about self  both girls

(43e) O sobie$_{i/%k}$ Jan$_i$ powiedział obu  dziewczynom$_k$ .
      About self John   told         both girls

Although the reflexive pronoun *sobie/self* tends to be subject oriented, it can be interpreted as coreferential with either the subject or the indirect object in (43c). Once the reflexive pronoun is moved away from its basic position, its antecedent is unambiguously the subject in (43d) and when it is topicalized in (43e), it tends to reconstruct only minimally (partially) into a c-domain of the nearest antecedent.

Binding Principle C excludes the coindexation of *mu* and *Jan* in (44a) and in (44c) Binding Principle A also forces appearance of the copy at the head of the A chain.

The idea that there is some Reconstruction in A chains seems relevant to account for the following cases of scopal interractions:

(45a) Przynajmniej jeden krzykacz jest obecny na każdym zebraniu.
      At least       one  heckler is present at  every meeting
      'One such heckler is present at every meeting.'

(45b) at least jeden > każdy
      przynajmniej one > every

(45c) każdy > taki jeden
      every > such one

I believe that it is quite easy to get these two interpretations based on regular and inverse scope. The details of scopal interractions are not relevant at this point, apart from the basic idea that scopal relations are based on c-command and that there is QR in the sense that the universal quantifier in (45b) leaves its most embedded position to scope over the subject quantifier (it may be said to adjoin to VP, the most suspect option from the Minimalist standpoint).

Now consider the same example in an NP raising context:

(46a) Przynajmniej jeden krzykacz wydaje się być obecny na każdym zebraniu.
      at least       one  heckler seems refl be present at  every meeting
      'One such heckler seems present at every meeting.'

(46b) [przynajmniej jeden krzykacz] wydaje się [[taki jeden krzykacz]  być obecny na
      [at least one heckler]  seems refl   [[such one heckler]  to be present at każdym zebraniu].
      every    meeting]

(46c) przynajmniej jeden > każdy
      at least one > every

(46d) każdy > przynajmniej jeden
      every > at least one

It seems that reconstruction within the A-chain is relevant to obtain the distributive reading in (46d) on the assumption that QR of universal quantifiers is strictly clause bound.

Thus the Reconstruction effects in A-chains seem to confirm Hornstein's predictions: in principle either copy in the A-chain can be interpreted at LF but the choice of the interpreted copy is not unrestricted, it is subject to more general principles of grammar, such as Binding Conditions applying at LF. They eliminate illicit copies

within A-chains to the same extent as Chomsky's Preference Principle eliminates excess copies within A'chains.[13]

## 3.3. Reconstruction in VP fronting and problems with adjunct/complement asymmetries in Polish

This section deals with some rather puzzling facts concerning the complement/adjunct asymmetry within Complex Noun Phrases (CNPs) in Polish.

The asymmetry is to be expected and shows in English in the cases discussed at length in Lebaux (1988), Chomsky (1993, 1995), Brody (1995) and Epstein et al. (1998):

(47a) [Which claim [that John$_i$ made]] was he$_i$ willing to discuss [which claim]?

(47b)*[Which claim [that John$_i$ was asleep]] was he$_i$ willing to discuss [which claim [that John$_i$ was asleep]]

The difference in grammaticality is due to the fact that complements are selected and must be present within the lexical projections of the selecting heads (Ns or Vs), whereas adjuncts need not be present in the bottom copy, as they are not selected. The decisive factor is the presence or absence of *John* in the bottom copy.

In Polish such contrasts between arguments and adjuncts within CNPs are considerably less telling. Consider the following examples:

(48a) [Na czyją sugestię   [żeby Jan$_i$ się wreszcie oświadczył Basi]]     zareagował
to whose suggestion [that John refl at last   proposed (to) Basia] reacted
on$_i$ gniewem [na czyją sugestię [żeby Jan$_i$ się wreszcie
he (with) anger to whose suggestion   [that John   refl   at last
oświadczył     Basi]].
proposed   (to) Basia]
'To whose suggestion that John should at last propose to Basia does he react with anger?'

(48b) Na każdą zaczepkę Marii [którą później Jan$_i$ długo rozpamiętuje] reaguje
to every     taunt   Mary's [which later John long     remembers]     reacts

on$_i$ gniewem  [na każdą zaczepkę Marii]
he (with) anger [to every   taunt Mary's]
'To every taunt by Mary, which John later remembers for long, he reacts with anger.'

(49a) [na czyje oświadczenie [że     rząd     pomaga Janowi$_i$ finansowo]]
to whose   statement   that government helps     John     financially
zareagował on$_i$   gniewem
reacted     he (with) anger
[na czyje oświadczenie [że     rząd     pomaga Janowi$_i$   finansowo]]?
to whose   statement     that government helps     John     financially

(49b) [na czyje oświadczenie [które Jan początkowo taktownie przemilczał]]
to whose statement     that John     first     tactfully disregarded
zareagował on gniewem   [na czyje oświadczenie]?
reacted     he (with) anger to whose     statement

Judging by the English examples, (48a) and (49a) should be much worse than (48b) and (49b), as in the former examples the Complex Noun Phrase includes complements whose bottom copy must be present and produce a Principle C violation, while in the latter example the complex Noun Phrase includes a relative clause which need not be present in the bottom copy. The contrast between (48a) and (49a) on the one hand and (48b) and (49b) on the other, if any, is not so strong.[14]

Even more interestingly, the judgements change if the subject appears in the preverbal position. In such case complete reconstruction is required, overt A' movement is undone and coindexation impossible:

(49c) *%[na czyje oświadczenie [że     rząd     pomaga Janowi$_i$ finansowo]]
to whose   statement   that government helps     John     financially
on$_i$ zareagował gniewem
he   reacted   (with) anger
[na czyje oświadczenie [że     rząd     pomaga Janowi$_i$ finansowo]]?
to whose   statement   that government helps     John     financially

(49d) *%[na czyje oświadczenie [które Jan$_i$ początkowo taktownie przemilczał]]
to whose   statement     that John     first     tactfully disregarded
on$_i$ zareagował gniewem [na czyje oświadczenie]?
he   reacted   (with) anger to whose     statement

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[13] Incidentally, it is worth considering the issue of the presence of a copy of the Wh-fronted/topicalized category in [spec,Reconstruct]. In the frame of the Minimalist enterprise, literal GB style lowering from [spec,C] or Topic position into Reconstruct is prohibited, as the lowering chain does not result in an appropriate c-command relation holding between the lowered category and its former position. Thus Reconstruct should have some feature attracting the Wh-phrase/Topic on its way up the phrase marker. Assume, it has a relevant feature, [+wh/D] or [+top] which is weak. Being weak, it does not engender overt movement but it can be satisfied in the computation in which the Wh-phrase/Topic passes through it on its way to satisfy an equivalent strong feature. As lowering is prohibited, including the lowering movement of the relevant formal features onto the head of Reconstruct in Chomsky's (1995) system, the altruistic early movement to [spec, Reconstruct] appears to be the only option.

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[14] Huang (1994) also considers the set of examples discussed above and is not as unequivocal as Chomsky (1993, 1995) in their evaluation. He acknowledges an intermediate, rather than outright ungrammatical, status of the following case (Huang 1994: 106):

.?[Which claim [that John was a thief]] did he deny t?

The sensitivity of these examples to the position of the subject affects both the complement CNP and the adjunct CNP. This fact deserves considerable attention, though I am not able to provide any complete analysis here, leaving it for further research. Let me, however, indicate two interesting starting points for further development.

First, the distance between the Topic/Wh-phrase and the subject seems to matter for required coindexation. The postverbal position of the subject seems to allow for contrastive focus and thus facilitate a reference to the R-expression in the Topic/[spec,C] position.

Second, it might seem that the solution to the puzzle of partial reconstruction in (49a-b) lies in the fact that the postverbal subject position is placed in the c-domain of Reconstruct, while the preverbal subject position c-commands Reconstruct. Consider (35) again:

(35)    {Topic/Wh-phrase {Subject 1 {Reconstruct {Object-indirect}
        {Object-direct {Subject 2}}}}}

The consequences for the case at hand follow immediately: Binding Principle C excludes (49c-d) but allows for (48a-b, 49 a-b). The drawback of this approach is that one should now expect A' movement to remove every object from within the c-domain of the postverbal subject, on the basis of minimal reconstruction into Reconstruct. Obviously, this would be an erroneous conclusion, as (30) repeated below, shows:

(30)    *[Którą książkę o Janie$_i$] czytał on$_i$ wczoraj t?

        [which book about John] read he yesterday t?

The only difference between the reconstructed objects in (48-49) and (30) is their 'heaviness'; the PP complement of the object in (30) is 'lighter' than the CP complement or the CP adjunct in (48-49). It is then tempting to say that reconstruction seems sensitive to the size of the reconstructed constituent; the 'heavier' it gets the shorter distance it needs to be reconstructed. The PP complement is relatively 'light' and therefore it obligatorily reconstructs into VP in (30). 'Heavier' constituents in (48-49) may reconstruct only minimally. Hence, the contrast between the simple cases of (30) and the more complex ones of (48-49). Needless to say, the claim of the 'heaviness' metrics of reconstruction requires empirical confirmation.[15] Addi-

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[15] Note the following contrast in reconstruction possibilities of 'light' and 'heavy' adjuncts:

(50a) *[Which book [thrown away by John$_i$]] did he$_i$ read [which book] before?

(50b) [Which book [that John$_i$ threw away] did he$_i$ read [which book] before?

Discussion of these facts provided by Chomsky and Lebaux does not seem to account for the contrast between the reconstruction options of the two adjuncts, provided the participial clause in (50a) is an adjunct. Both adjuncts should in principle have the option of merging with the Wh object following its overt movement to [spec,C]. Apparently, only the 'heavier' one (the CP in 50b) has this option while the 'lighter' one (the PrtP in a) must be merged prior to movement. This fact may be used as support for some 'heaviness' metrics in reconstruction.

tionally, as far as complement CNPs are concerned, note the following interesting fact: topicalization of equivalent VPs seems to feed reconstruction, as in (50a) the pronominal subject may not be coreferential with the embedded subject although the c-command relation computed on overt copies does not preclude such a relation. However topicalization or Wh movement of related CNPs seems to behave differently with respect to reconstruction; in (50b) the interpretation with *he* and *John* as coreferential is available. (50c) confirms the worrying status of CNPs complementation.

(51a)   *Twierdzić, że Jan$_i$ podkrada konfitury, on$_i$ przecież nie mógł.
        claim    that John pinches   preserves he certainly could not

(51b)   Na twierdzenie, że Jan$_i$ podkrada konfitury, reaguje on$_i$ gniewem.
        to   claim     that John pinches preserves reacts   he (with) anger

(51c)   Twierdzeniu, że Jan$_i$ podkrada konfitury zaprzecza on$_i$ skwapliwie.
        claim       that John pinches preserves denies    he vehemently

The unambiguous status of VP reconstruction is confirmed in Huang (1994). This study contains two interesting points concerning the problems mentioned above with respect to CNPs in this paper.

First, Huang observes obligatory reconstruction in the cases of VP fronting:

(52a)   [Which pictures of himself$_{i,k}$] did John$_i$ think [Bill$_k$ saw t]

(52b)   [criticize himself$_{*i,k}$] John thought [Bill$_k$ would not t]

(52a) is ambiguous, as expected on a theory encompassing the Preference Principle, while (52b) is not and the anaphoric pronoun can be bound only by the embedded subject. Huang (1994) credits this difference to the Internal Subject Hypothesis and claims that the fronted constituent is a Complete Functional Complex (CFC), a VP containing the subject trace which binds the anaphor. Practically then, no reconstruction is necessary to give the only grammatical reading. In (52a) only the object, which need not be a CFC, is fronted and reconstructed.

Note further, that the idea that a fronted VP includes the trace of the subject and forms a CFC can provide an additional argument for reconstruction into at least the Reconstruct position in Polish. Consider the following example involving an ambiguous possessive anaphor and its equivalent showing long distance VP fronting:

(53a)   Jan$_i$ kazał Marii$_k$ [PRO$_k$ [t$_k$ przepytać swoich$_{i/k}$ studentów]]
        John told Mary          (to) examine self's     students
        'John told Mary to examine his/her students.'

(53b)   [t$_k$ przepytać swoich$_{i/k}$ studentów] Jan$_i$ kazał Marii$_k$ wczoraj [PRO$_k$ t]
        [(to) examine self's       students] John told   Mary yesterday

The ambiguity of this example is based on two facts: that A binding in Polish is sensitive to the Tensed Island Constraint and that the possessive reflexive must be subject bound and both the root subject PRO embedded under an object control verb qualify as potential binders. If we assume that Huang's (1994) hypothesis concerning VP fronting is correct, and example (51) above appears to provide some confirmation of it, then (53b) should be disambiguated, with the possessive reflexive bound by the trace of object controlled PRO. This is not true though, and the ambiguity still persists. This persistent ambiguity can be accounted for in a system based on the structure in (35) including the position Reconstruct. If any fronted/topicalized phrase is lowered at least into Reconstruct, the possessive reflexive finds itself within the c-domain of the root subject. The resulting configuration is shown in (53c), with [#] marking the position of the fronted VP in overt syntax:

(53c) [#] Jan$_i$ [t$_k$ przepytać swoich$_{i/k}$ studentów] kazał Marii$_k$ wczoraj [PRO$_k$ t]
      John (to) examine  self's      students  told  Mary  yesterday

Huang's (1994) hypothesis concerning VP fronting and the structure proposed in (35) seem to make correct predictions for the fronting of a remnant double object VP. Consider the following pair of examples:

(54a) [Listów Jana$_i$  z    Paryża] Maria mu$_i$ nie  mogła oddać t przez rok.
      letters John's from Paris    Mary him not could  return   for year
      'Mary could not return him John's letters from Paris.'

(54b) %*[oddać listów  Jana$_i$   z  Paryża] Maria mu$_i$ nie  mogła t przez rok.
       return  letters John's from Paris  Mary him not could   for year

(54c) [#] Maria$_k$ [t$_k$ oddać t$_i$ listów Jana$_i$  z    Paryża] mu$_i$ nie mogła t
      Mary       return  letters John's from Paris  him not could
      przez rok.
      for   year

It seems that the (54b) with the coreference indicated, is less acceptable than (53a). This effect is easy to grasp in Huang's system, where the fronted VP is in fact a CFC including not only the trace of the subject but also the trace of the indirect object causing a Principle C violation.

## 4. Conclusion

The structure proposed in (35) is able to cope with most reconstruction facts on the basis of the idea that position Reconstruct is not the only legitimate location of the restriction at LF. Rather, there are two legitimate positions for reconstructed constituents (restrictions): either Reconstruct or the thematic position within VP. Only the latter one is located in the c-domain of the indirect object, hence obligatory Condition C effects with respect to the subject and optional with respect to the indirect object. Overt A' movement of 'heavy' constituents seems to be able to remove them from the c-domain of the postverbal subject. The details of this operation are yet to be determined.[16]

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[16] Safir (1999) proposes to deal with Reconstruction effects by means of a system based on two assumptions: the phenomenon of 'vehicle change' suggested in Fiengo and May (1994) is applicable to copies of moved categories, and LF chains may include multiple copies. His proposal deserves more attention but cannot be discussed here for lack of space. Suffice it to say that Safir's (1999) system does not predict any Reconstruction asymmetries with respect to pre- and postverbal subjects.