

THE DOUBLE OBJECT CONSTRUCTION AT THE INTERFACES*

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1 Introduction

This paper focuses on two issues raised by the double object construction in English, exemplified in (1):

- (1) a. Jan showed Greg the diary
b. Cindy gave Bobby Kitty Karryall
c. Mike sent Bibi Galini the plans

The first is, How are the two objects licensed in the structure? That is, how is Case assigned to the two DPs? And second, What are the structural relations held between the two objects and other VP type elements at the different levels of representation?

I will make essentially two points: first, overtly, or at PF, both objects appear in VP-external functional specifiers, which I identify as AGRo specifiers, where Case is checked; second, I will adapt a version of the proposal by Johnson (1991) and Kayne (1984) that underlyingly DP₁ and DP₂ (i.e. *Greg* and *the diary* in (1)a, respectively) form a sort of small clause in which DP₁ is the specifier of DP₂. Placing DP₁ in the specifier of DP₂ will account for a number of otherwise puzzling phenomena, including the presence of "extra" floated quantifiers, what I call "scope freezing", the particular passivization properties of the construction, a specificity effect and a related extraction asymmetry.

2 Initial Considerations

I will begin with some evidence that both objects can appear in positions which asymmetrically c-command other verbal material. Larson (1988) interprets the results of Barss & Lasnik (1986) to show that DP₁ asymmetrically c-commands DP₂. Some of the tests used there are repeated in (2) through (7). DP₁ can bind a reflexive or reciprocal in DP₂, but not vice versa, as (2) and (3) show:

- (2) a. I showed John/him himself (in the mirror)
b. *I showed himself John (in the mirror)
(3) a. I showed the professors each other's students
b. *I showed each other's students the professors

DP₁ can bind a bound variable pronoun in DP₂, but not vice versa, as (4) and (5) show:

* This paper builds on Chapter 6 of Runner (1995, 1998). An early version was first presented at the 1996 LSA Meeting. The current version is still a work in progress and does not take into account several important publications dealing with the double object construction that have appeared since I did the research reported here (e.g. Hornstein 1995, Thrainsson & Collins 1998).

- (4) a. I denied each worker his paycheck
 b. *I denied its owner each paycheck
- (5) a. I showed every friend of mine his photograph
 b. *I showed its trainer every lion

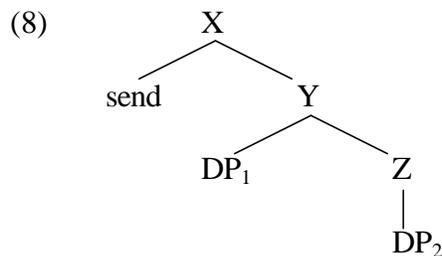
DP₁ headed by *each* licenses *the other* in DP₂, but not vice versa, as (6) shows:

- (6) a. I have each man the other's watch
 b. *I gave the other's trainer each lion

And a negated DP₁ licenses a negative polarity item in DP₂, but not vice versa, as (7) shows:

- (7) a. I gave no one anything
 b. *I gave anyone nothing

The generalization these tests point to is that at whatever level of representation the conditions on these phenomena must be satisfied, DP₁ seems to asymmetrically c-command DP₂. The tree in (8) is an abstract schema of the type of structure that these tests point to:



What I will point out next is that, by applying Barss & Lasnik's (1986) tests to DP₂ and a DP embedded in other verbal material, we find that DP₂ also asymmetrically c-commands this material. This is illustrated in (9) through (16). DP₂ can bind a reciprocal in a VP adjunct, but not vice versa, as (9) shows; and DP₂ can cause a condition C violation if coindexed with a DP in a VP adjunct, but not vice versa, as (10) shows:

- (9) a. ?Marcia showed Cindy the two boys during each other's performance
 b. *Marcia showed Cindy each other during the two boys' performance
- (10) a. *Mike gave Carol the fucker after the letter's unwanted arrival
 b. Mike gave Carol the letter after the fucker's unwanted arrival

DP₂ can bind a bound variable pronoun in a VP adjunct, but not vice versa, as (11) and (12) show:

- (11) a. Peter gave Bobby each candy bar only after its/the fucker's expiration date had passed
 b. *Peter gave Bobby the fucker only after each candy bar's expiration date had passed
- (12) a. Harvey sent Marcia every invitation on its/the fucker's own letterhead
 b. *Harvey sent Marcia the fucker on every invitation's letterhead

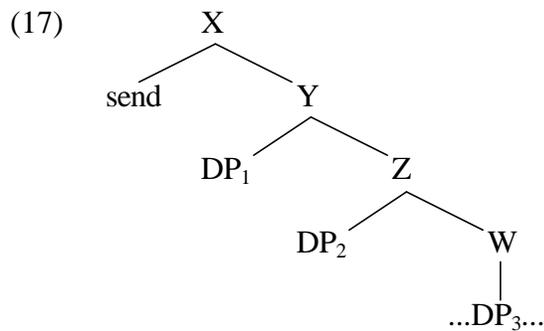
DP₂ headed by *each* can license *the other* in a VP adjunct, but not vice versa, as (13) and (14) show:

- (13) a. Alice gave Sam each dog on the other's leash
- b. *Alice gave Sam the other dog on each's leash
- (14) a. John sent Bill each check after the other expired
- b. *John sent Bill the other check after each expired

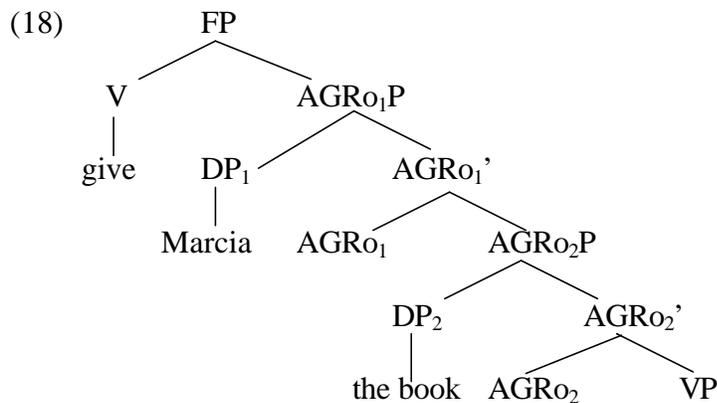
And a negated DP₂ can license a negative polarity item in a VP adjunct, but not vice versa, as (15) and (16) show:

- (15) a. Laverne gave Shirley nothing at any of the events
- b. *Laverne gave Shirley anything during none of the events
- (16) a. Richie showed Fonzie none of the pictures during any of the exhibitions
- b. *Richie showed Fonzie any of the pictures during none of the exhibitions

These tests all suggest that DP₂ also asymmetrically c-commands VP material, at the relevant level of representation. The tree in (17) is an abstract schema of what the representation should look like. DP₁ asymmetrically c-commands DP₂, which asymmetrically c-commands DP₃, which is in a VP adjunct:



The tree in (18) is the representation I will argue for. As we can see, it encodes what we know so far: DP₁ asymmetrically c-commands DP₂; and DP₁ and DP₂ both asymmetrically c-command VP and its contents.



If (18) can be motivated, our first question, namely, How are the two objects licensed in the structure?,

is addressed: each is Case-checked in a Spec,AGRo phrase.

3 Further Motivation

Barss & Lasnik's (1986) tests illustrated in (2) through (16) show asymmetric c-command at some level of representation, but not necessarily the overt (or PF) representation; to motivate (18) as a surface representation I will look at constituency and adverb placement. Before turning to that, however, a few comments on verb position are in order.

3.1 Preliminaries: V position

In Runner (1995, 1998) I argue, following Johnson (1991), that the main verb in English moves to a functional head position external to VP. This differs from the currently standard view on verb movement. (19) illustrates the Pollock (1989)/Chomsky (1995) account of verb movement in French and English:

- (19) a. DP verb [_{VP} ADV [_{VP} t_V DP]] [French]
 b. DP [_{VP} ADV [_{VP} verb DP]] [English]

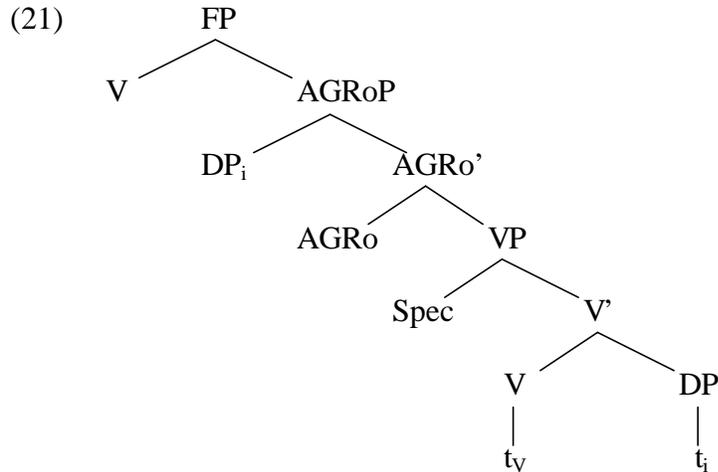
The claim that V does not move overtly in English is based in part on the assumption that the adverbs in question are adjoined to VP.

However, I assume these adverbs are adjoined to a higher VP-external functional projection, which I tentatively label FP:

- (20) a. DP verb [_{FP} ADV [_{FP} t_V [_{AGRoP} DP [VP]]]] [French]
 b. DP [_{FP} ADV [_{FP} verb [_{AGRoP} DP [VP]]]] [English]

Thus, on my account the French vs. English facts show that V moves higher overtly in French than in English, but not that the verb does not move out of VP in English. I do not take a firm stand on exactly what the label of FP is, perhaps a functional head associated with inflectional aspectual properties (AspP). I simply note that it is higher than AGRoP, deriving V-ADV-DP order in French and ADV-V-DP order in English.

Therefore, the structure I will assume for lower part of transitive sentence is illustrated in (21) (see Runner 1995, 1998 for details and more discussion):



Now I will turn to arguing for (18), which incorporates the verb movement illustrated in (21). The structure in (18) is the overt structure of the double object construction in English.

3.2 V and DP₁ are external to a constituent containing DP₂ and other VP material

I will outline several arguments in favor of the claim embodied in (18) that the verb and DP₁ are external to a constituent containing DP₂ and the other VP material. In (18) this constituent is the AGR_{o2} Phrase.

Coordination

Coordination examples like those in (22), which are adapted from Larson (1988) and Johnson (1991), point towards such a conclusion, as (23) illustrates:

- (22) a. I gave John [the book in the morning] and [the magazine in the evening]
 b. Rachel sent Marcia [a telegram at her office] and [a box of roses at her apartment]
 c. I showed Sam [my gardenias after breakfast] and [my daffodils after lunch]

What we see, then, is a constituent containing the second object and a verbal adjunct being coordinated independently of the first object and the verb. We have something like the following:

- (23) I_i gave John_j [_{AGRo2P} the book [_{VP} t_i t_V t_j in the morning]] & [_{AGRo2P} the magazine [_{VP} t_i t_V t_j in the evening]]

Right Node Raising

Further, right node raising examples like those in (24) also point towards a constituent containing DP and other verbal material, separate from DP₁ and the verb:

- (24) a. I have given John and Sam has given Bill a pewter mug for Christmas
 b. I showed Sam and once even showed Peter the tattoo on my leg in the shower

Whatever the correct analysis of right node raising, the particular constituent that it seems to be

targeting in this case is the lower AGRoP:

(25) [_{AGRo2P} a pewter mug [_{VP} t_V t [_{for Christmas}]]]

3.3 Both objects are external to VP

The structure in (18) suggests, secondly, that DP₁ and DP₂ should also be external to a constituent containing the remainder of the verbal material; that is, VP.

Coordination

Coordination examples like (26) seem to support the claim that DP₁ and DP₂ are external to a constituent containing the remainder of the VP, along the lines outlined in (27):

- (26) a. I gave Greg a gift on purpose last Christmas but only reluctantly this year
 b. I sent Sam a telegram quickly yesterday but less hurriedly today
 c. I sent Tom a letter at home this morning and at his office this afternoon

The coordinated VP would look like the following:

(27) [_{VP} [... at home] this morning]

Right Node Raising

Right node raising examples like those in (28) seem to point to the same conclusion: DP₁ and DP₂ are external to VP:

- (28) a. I've given Bill a pewter mug and Sam has given Peter a toaster without regrets for Christmas.
 b. I've sent Tom a letter and John has sent Bill a telegram from home in the morning.

(29) [_{VP} [... from home] in the morning]

3.4 Adverb Placement

A third type of argument for the structure in (18) comes from the distribution of adverbs. Jackendoff's (1972) Class II adverbs, like *quickly*, *slowly*, *quietly*, *frequently*, etc., is what I will focus on. The distribution of this class of adverbs is highly constrained in the functional area of the tree but they are freely distributed within the VP area of the tree. Consider the following examples:

- (30) a. (Quietly) Mikey (*quietly) has (*quietly) not (?quietly) been (quietly) visiting (*quietly) his parents (quietly).
 b. (Loudly) Betsy (*loudly) has (*loudly) not (?loudly) been (loudly) singing (*loudly) the anthem (loudly).
 c. (Quickly) Chris (*quickly) has (*quickly) not (?quickly) been (quickly) hitting (*quickly) the dog (quickly).

Assuming these adverbs are adjoined to various projections in the tree, the following describes their distribution:

Adjunction to (with reference to example (30)a and a structure incorporating (21)):

- AGRsP = okay (before *Mikey*)
- AGRs' = * (before *has*)
- NegP = * (before *not*)
- TP = ? (before *been*)
- FP = okay (before *visiting*)
- AGRoP = * (before *his parents*)

The point of all this is that in the functional area of the tree Class II adverb-placement is highly constrained. While I do not attempt to provide a complete theory of adverb placement, it seems clear that reference to particular functional heads/projections is necessary to adequately constrain adverb distribution (see Potsdam (1998) for an analysis).

Now let's consider VP-internal adverb-placement; as (31) shows Class II adverbs freely mingle with VP-internal elements:

- (31) Sam talked (quietly) to Carol (quietly) about Oliver (quietly).

What is relevant for our purposes is the fact that an adverb cannot precede a DP object. I take this to mean that adjunction to AGRoP is impossible (this is an assumption that Koizumi (1995) also makes, and is perhaps derivable from a general ban on adjunction to filled Specifiers (Kayne 1994)). I assume, then, that this is one of the restrictions, among several, on the distribution of these adverbs among the functional categories.

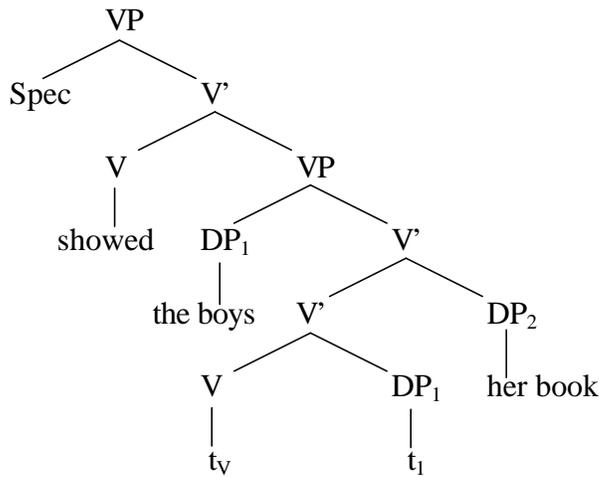
Now consider the double object construction. According to (18), both objects appear overtly in the specifiers of VP-external AGRoP Phrases. If it is the case that adverbs cannot adjoin to AGRoP, as we noticed above, then we predict that no adverbs should be able to appear between the verb and DP₁, or between DP₁ and DP₂. This is indeed the case:

- (32) a. Cindy showed (*quietly) the boys (*quietly) her book (quietly)
 b. John sent (*quickly) Mary (*quickly) a letter (quickly)
 c. Greg gave (*slowly) Jan (*slowly) the present (slowly)

3.5 Larson's (1988) Account

Let's briefly discuss Larson's (1988) account (see Runner 1995, 1998 for more complete discussion). The following tree represents Larson's (1988) proposal. DP₂ is adjoined to V' on the right.

(33) Cindy showed the boys her book



There are several issues worth mentioning in the present context. First, according to Larson (1988), adverbial expressions are base-generated as a sister to the lowest V position. If we say nothing more we automatically derive the wrong word order, as (34) shows:

- (34) a. *Beaver gave Wally in the morning the quarter
 b. *June showed Ward during his explanation the photos

One possibility, short of abandoning (33), is to base-generate the adverbial expression adjoined to a VP on the right, or to move it there, giving something like the grammatical (35):

- (35) a. Beaver gave [[Wally the quarter] [in the morning]]
 b. June showed [[Ward the photos] [during his explanation]]

Doing this means that DP₂ is c-commanded by the adverbial and not vice versa. That this is not correct is suggested by the Condition C violation illustrated in (36):

- (36) *Mike gave [Carol the fucker [after the letter's unwanted arrival]]

The correct analysis should have DP₂ asymmetrically c-commanding the adverbial.

A second problem with the proposal in (33) has to do with constituency. We already know (see above) that DP₂ and the adverbial expression form a constituent separate from DP₁, as the repeated examples (37) and (38) show:

Coordination

- (37) a. I gave John [the book in the morning] and [the magazine in the evening]
 b. Rachel sent Marcia [a telegram at her office] and [a box of roses at her apartment]
 c. I showed Sam [my gardenias after breakfast] and [my daffodils after lunch]

Right Node Raising

- (38) a. I have given John and Sam has given Bill [a pewter mug for Christmas]
 b. I showed Sam and once even showed Peter [the tattoo on my leg in the shower]

Much more can be said about Larson's (1988) influential proposal (and a bit more will be said directly below) but these two points suggest that there are fundamental problems with it.

In summary, what this section has tried to motivate is that DP_1 and DP_2 appear overtly in VP-external Case positions: AGRo specifiers, as in (18).

4 The Underlying Structure of the Double Object Construction

This section will focus on the underlying structure of the double object construction. I will explore an approach to the double object construction advocated by Johnson (1991), developing it to account for the facts we have already determined and others that I will turn to immediately.

4.1 Lack of Connectivity in the Double Object Construction

The first point to make relates to Larson's (1988) proposal in (33). DP_1 originates in a position c-commanded by DP_2 . Larson accepts Belletti & Rizzi's (1988) "anywhere" version of Condition A, which was adopted in part to explain the binding in examples like (39):

- (39) a. Pictures of himself worry Max
 b. [e [_{VP} [_V [worry pictures of himself] Max] [D-structure]

Similar connectivity effects are expected in the double object construction. That is, DP should be able to bind DP_1 contrary to fact, as (40) reminds us:

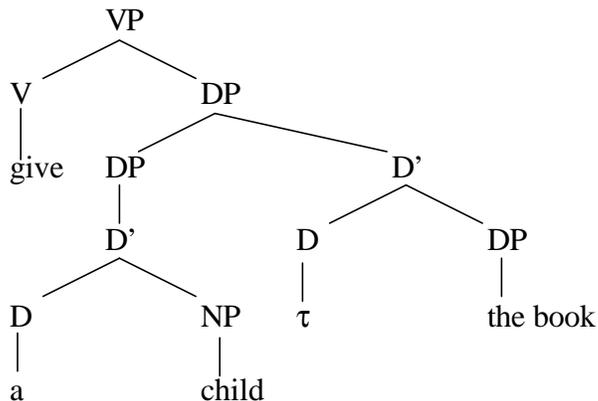
- (40) a. I showed Bill and Tom each other's friends
 b. *I showed each other's friends Bill and Tom

Thus, in the underlying structure we adopt DP_2 should never c-command DP_1 . One such proposal is Johnson's (1991) "clausal DP", to which I now turn.

4.2 Johnson's (1991) "Clausal DP"

In Johnson's (1991) proposal, the two objects in the double object construction form a small clause headed by a null D, which he labels τ :

(41) Johnson's (1991) Clausal DP



Since DP₂ never c-commands DP₁ connectivity is not a problem.

I will now examine a few of the arguments in favor of the clausal DP proposal, and ultimately adopt it with a few changes for the analysis provided here. Kayne (1984) points out that the small clause approach perhaps explains why nominalized double object verbs do not have the same argument structure as their verbal counterparts; the same is true of other verbs taking small clauses, as (42) through (45) show (Johnson 1991, citing Kayne 1984):

- (42) a. *the gift of Gary (of) the book
 b. *Gary's gift (of) the book
- (43) a. *envy of Sam (of) his job
 b. *Sam's envy (of) his job (with relevant meaning)
- (44) a. *the belief of Mittie intelligent
 b. *Mary's belief intelligent
- (45) a. *a consideration of Chris unhappy
 b. *Chris's consideration unhappy

Johnson (1991) provides (46) through (48) as cross-linguistic evidence for his treatment of the double object construction. In (46) we see that DP₁ asymmetrically c-commands DP₂, allowing for anaphor-binding, but not vice versa (Johnson 1991, citing Herslund 1986):

- (46) a. *Jeg fortalte drengen_i om sin_i bamse [Danish]
 I told boy-the about self's teddybear
 b. ?De gav ham_i sin_i bekomst
 They gave him self's what-he-deserved

In (47) we see that object shift moves both objects of the double object construction, which Johnson (1991) analyzes as movement of the clausal DP itself (Johnson 1991, citing Vikner 1990):

- (47) Peter viste [hende den] jo [Danish]
 Peter showed her it indeed

Finally, (48) shows that the DP₁ can undergo object shift alone, but DP₂ cannot (Johnson 1991, citing

Vikner 1990):

- (48) a. Peter viste hende jo bogen [Danish]
Peter showed her indeed book-the
b. *Peter viste den jo Marie
Peter showed it indeed Marie

Other observations that seem to favor the clausal DP proposal come from Green (1974). The constant meaning of the double object construction is a sort of possession relation that holds between the first and the second DP; the same relation holds between a genitive DP and the DP it is contained in. For example, (49a) does not entail that Gary learned a lesson, where (49b) does (Johnson 1991, based on observations by Green 1974):

- (49) a. Mittie taught a lesson to Gary
b. Mittie taught Gary a lesson

And the pairs in (50) and (51) illustrate that NY and first base are incapable of having the relevant possession relation. The same sort of restrictions hold between a genitive DP and the remainder of the DP, as (52) shows:

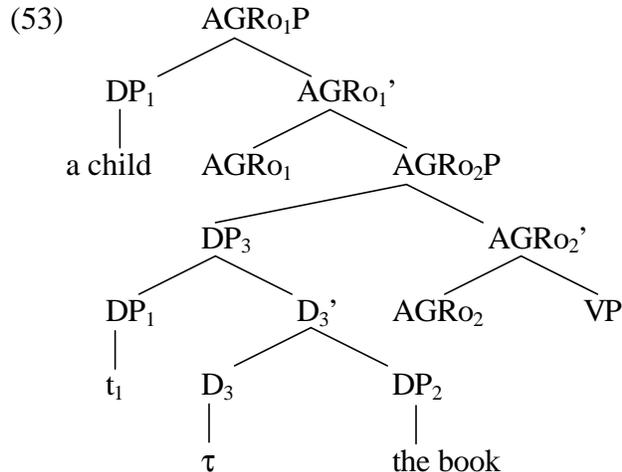
- (50) a. Sam sent a telegram to Gary/New York
b. Sam sent Gary/*New York a telegram
(51) a. Betsy threw a ball to Gary/first base
b. Betsy threw Gary/*first base a ball
(52) a. Gary's lesson
b. Gary's telegram
c. *New York's telegram
d. Gary's ball
e. *first base's ball

If we accept Johnson's (1991) basic proposal there are two remaining problems to deal with, however, to which I now turn.

4.3 Considerations and Revisions

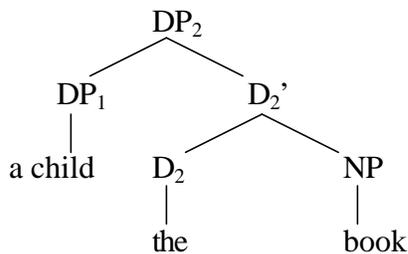
According to the findings of previous sections there are two problems with Johnson's (1991) proposal in (41). First, DP₂ asymmetrically c-commands VP-internal and VP-adjoined material. And second, both objects are external to a constituent containing remainder of VP material.

The solution to the latter problem is available to us immediately if we take Johnson's (33) as an underlying representation and not a surface one. The proposal I have been arguing for is that the two objects ultimately reside in VP-external Spec,AGRo positions. I will assume, then, that for Case reasons the two objects leave their underlying positions, as outlined in (18) above. Assuming Johnson's (1991) underlying clausal DP analysis combined with the surface, or PF, analysis motivated above, gives us a surface representation something like the following:

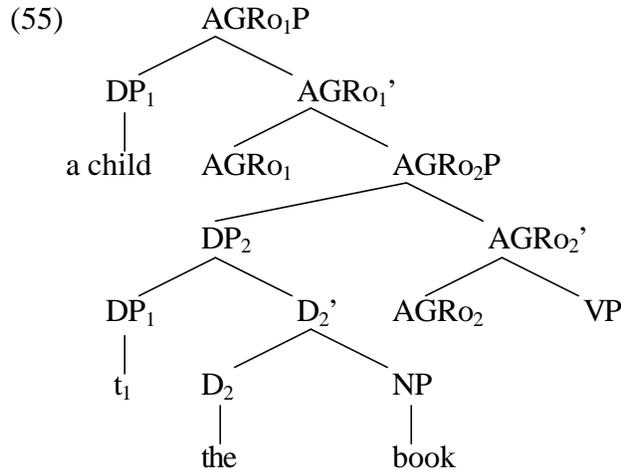


The solution to the former problem, that DP_2 asymmetrically c-commands VP-internal and VP-adjoined material is still a problem because of Johnson's (1991) claim that head of the clausal DP is an independent functional head τ . The problem is that DP_2 cannot c-command VP. There is too much structure in between, created by τ . Johnson assumes that τ incorporates into the verb, Case-licensing DP_2 . But our AGR approach obviates the need for such a mechanism, and any need for τ itself, since DP_2 checks Case in Spec,AGR₀₂. I will assume the revised clausal DP in (54), where DP_1 is actually in the specifier of DP_2 underlyingly:

(54) Revised Clausal DP



Without the extra structure τ provided, DP_2 can c-command into VP, solving our first problem, the fact that DP_2 can c-command VP after moving to Spec,AGR₀:



I will now turn to some consequences of the revised clausal DP proposal in (54) and (55).

5 Some Consequences and Further Motivations

Since DP₁ originates in the specifier of DP₂ and moves to Spec,AGRo₁, an empty position will appear in DP₂. This position makes itself known in several ways.

5.1 Floating Quantifiers

The examples in (56), showing floated quantifiers in the double object construction, are puzzling (adapted from Maling 1976):

- (56)
- a. I gave the kids both a quarter
 - b. I gave the kids all some candy to keep them quiet
 - c. Dad bought the twins both bicycles for Christmas

If, as Sportiche (1988) argues, the presence of a floated quantifier indicates a DP position, it would seem that there is an extra DP position between the two objects, as (57) illustrates:

- (57) I gave [the kids]₁ [both t₁] [a quarter]₂ [_{VP}...]

The clausal DP proposal provides just such a position: the base position vacated by DP₁:

- (58) I gave [the kids]₁ [_{DP2} [both t₁] a quarter] [_{VP}...]

5.2 Scope Freezing

Larson (1988) points out the contrast in (59) and (60):

Let us re-think passive for a moment. The Case assignment approach I have been taking, following essentially Chomsky (1995), is that the verb itself has Case features that it checks off in AGRo. If the verb has one internal argument, it has one Case feature. If it has two internal arguments, it has two Case features. The fact that a verb has Case features to check implies that the functional array of the tree had better have the correct number of AGRo projections. If the verb has one Case feature, one AGRoP is needed. If the verb has two Case features, two AGRoP's are needed. The functional projection AGR does not itself have Case features; it simply mediates between the DP and the verb. And, following Chomsky, I assume that every AGR is the same. It is just a functional element mediating Case checking.

If this is on the right track, then passive of a double object verb absorbs one of the two Case features the verb has to check. With only one Case feature left, only one AGRoP is needed in the functional array. Let us assume, for the argument, that we have the surface account of the double object construction I argued for above except without the clausal DP idea. That is, underlyingly the two arguments are generated in VP independently. If the double object verb is passivized, then one Spec,AGRo is licensed to mediate Case-assignment. Thus, one of the two arguments can move to Spec,AGRo. The other can go to Spec,AGRs (since alongside losing accusative Case, the verb loses its external argument). On the hypothesis that we do not have a clausal DP, how is it to be determined which DP moves to Spec,AGRs and which to Spec,AGRo? Without some extra machinery, ungrammatical (c) is as likely to be derived as grammatical (b).²

On the other hand, if the clausal DP approach is adopted, only one possibility exists for which DP moves to Spec,AGRs: the DP which is underlyingly in Spec,DP of the clausal DP. Why? Because if the clausal DP itself moved to Spec,AGRs the trace of the other DP within it would not satisfy the ECP:

- (64) a Buddy₁ was sent t₁ [t₁ the letter]₂
 b *[t₁ the letter]₂ was sent Buddy₁

5.4 Position and Interpretation

A well-known correlation between the interpretation of a DP and whether it can be extracted out of, and a little-known effect partially correlating the interpretation of the first object in a double object construction with the interpretation of the second, lead us to look a little more closely at DP interpretation and IF positions of objects. I will essentially follow Diesing's (1992) Mapping Hypothesis and assume that objects appearing in VP at LF (e.g. by "lowering" there) are interpreted as nonspecific/existential. Those which remain in Spec,AGRo are interpreted as specific/quantificational/etc. My account of the double object construction, which puts a close relationship between the two objects--the first binding a trace in the second--constrains their LF configurational possibilities. We see more evidence for this when we observe the facts about extraction out of the objects in the double object construction, as well as the interpretations possible for the two objects.

² Extra machinery might include the perhaps already required minimalist notion of equidistance (Chomsky 1995).

5.4.1 A Prediction: Extraction out of DP₁

Diesing (1992) discusses the well known observation that extraction out of DP is sensitive to the interpretation of the DP. Consider the following contrasts (taken from Diesing 1992, p.97):

- (65) a. Who did you see pictures of?
 b. Who did you see a picture of?
 c. Who did you see many pictures of?
 d. Who did you see several pictures of?
 e. Who did you see some pictures of?
- (66) a. *?Who did you see the picture of?
 b. *?Who did you see every picture of?
 c. *?Who did you see most pictures of?
 d. *?Who did you see each picture of?
 e. ??Who did you see the pictures of?

The DPs in (65) all are interpreted as existential or nonspecific DPs; the DPs in (66), however, are quantificational or presuppositional.

According to Diesing (1992), interpretation is guided by the Mapping Hypothesis, which determines which part of the syntactic tree maps onto which part of the semantic (DRT) representation:

- (67) *Mapping Hypothesis*: Material from VP is mapped into the nuclear scope. Material from IP is mapped into the restrictive clause.

What this means for us is that if a phrase is presuppositional or quantificational, such as a definite DP or specific indefinite DP, it must be VP-external at LF in order to map onto the restrictive clause. If a phrase is existential, nonpresuppositional, etc., such as a nonspecific indefinite DP, it must be VP-internal at LF to map onto the nuclear scope of the representation.

Diesing argues then that the link between interpretation and grammatical extraction out of DP is only indirect. The grammatical extraction examples all involve extraction out of an DP which is in VP at LF; the ungrammatical examples involve extraction out of an DP external to VP at LF. She argues that the extraction is sensitive to the position, not the interpretation, of the DP.

To make this proposal more concrete I will abstract away from the details of Diesing's (1992) analysis, since she assumes objects to be in VP at PF, and implement her idea in my framework. On my account, objects are VP-external--in Spec,AGRo--at PF. That implies that at LF, they either remain there, and get interpreted as quantificational (being mapped onto the restrictive clause), or they lower to their VP-internal base position, and get interpreted as existential (mapped onto the nuclear scope).³

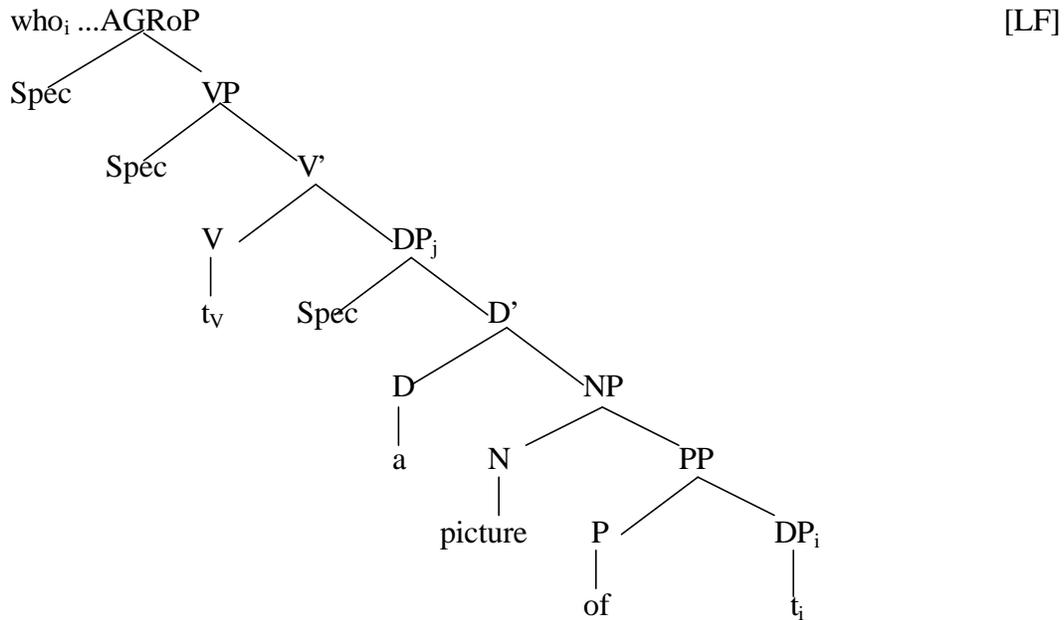
What about extraction? Diesing attributes the ungrammaticality of (66) to the ECP. Intuitively, looking at the LF representations, we can describe the generalization as the following: an LF complement of V is not a barrier to extraction; and an LF non-complement is a barrier to extraction. Assuming barrierhood is defined to include a statement about theta government, essentially the contrast

³ In Runner (1995,1998, Chapter 7) I develop an approach to what I am calling lowering here which exploits the copy and delete strategy for movement. Here I will simply assume the "lowered" construction is available somehow and leave it open if it comes about by syntactic lowering or by copy and delete movement.

boils down to the question of whether DP is theta governed at LF.⁴

Now consider the LFs of acceptable and unacceptable extractions out of DP:

- (68) Extraction out of DP
 a. Who did you see a picture of?



⁴ The following definitions are adapted from Johnson (1991):

Empty Category Principle: A non-pronominal empty category must be properly governed.

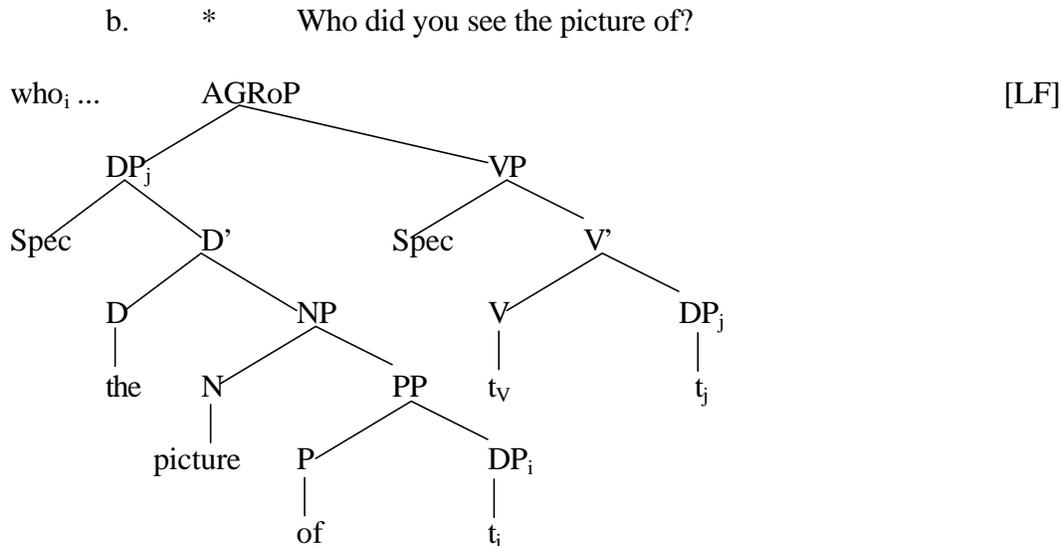
α properly governs β iff:

- a. α theta governs β , or
- b. α antecedent governs β .
 - i) α theta governs β iff α theta marks and governs β .
 - ii) α antecedent governs β iff α and β are coindexed and no barrier for β excludes α .

Barriers

α , a maximal projection, is a blocking category for τ iff α includes τ and is not theta governed. Φ is a barrier for τ iff Φ includes τ and:

- a. α is a blocking category for τ , or
- b. Φ immediately dominates a blocking category for τ



In the grammatical example, (68)a, since DP_j is to be interpreted as existential it has "lowered" to VP at LF. Diesing (1992) assumes syntactic lowering; I will exploit the copy and delete strategy in Section 6 below. Whatever the mechanics of it, the phrase appears in VP at LF. DP_j , then, is theta governed by the trace of V at LF. Thus, DP_j is not a barrier for extraction of DP_i . In the ungrammatical example, (68)b, DP_j is in Spec,AGRoP at LF. This is because it is meant to obtain a nonexistential reading. Being nonexistential it must be VP-external at LF. Since it is not in VP, it is not theta governed by anything at LF. Thus, DP_j is a barrier for the extraction of DP_i , hence the ungrammaticality.

Now, let us turn to the double object construction. Not surprisingly, extraction out of the second object is fine:

- (69) a. Who did you say Cindy sent Bobby a picture of t?
 b. What did Mary tell you John bought Shirley a box of t?
 c. Who did Ron say Kim sent me a story about t?

These examples are all acceptable assuming a nonspecific interpretation of the second object. If the account outlined above is on the right track, that implies that the second object can appear in a theta governed position at LF.

Before turning to the structure, let us consider the behavior of the first object. Perhaps surprisingly, extraction out of the first object is significantly worse:

- (70) a. *Who did you say Cindy sent a friend of t a picture?
 b. *What did Mary tell you John bought friends of t a book?
 c. *Who did Ron say Kim sent an acquaintance of t a threatening letter?

To avoid the specificity effect, to be discussed in the next section, the second object must be nonspecific in order to allow the first also to be nonspecific. Even with this, though, the examples are bad. This, then, implies that the first object in the double object construction cannot be in a theta governed position at LF.

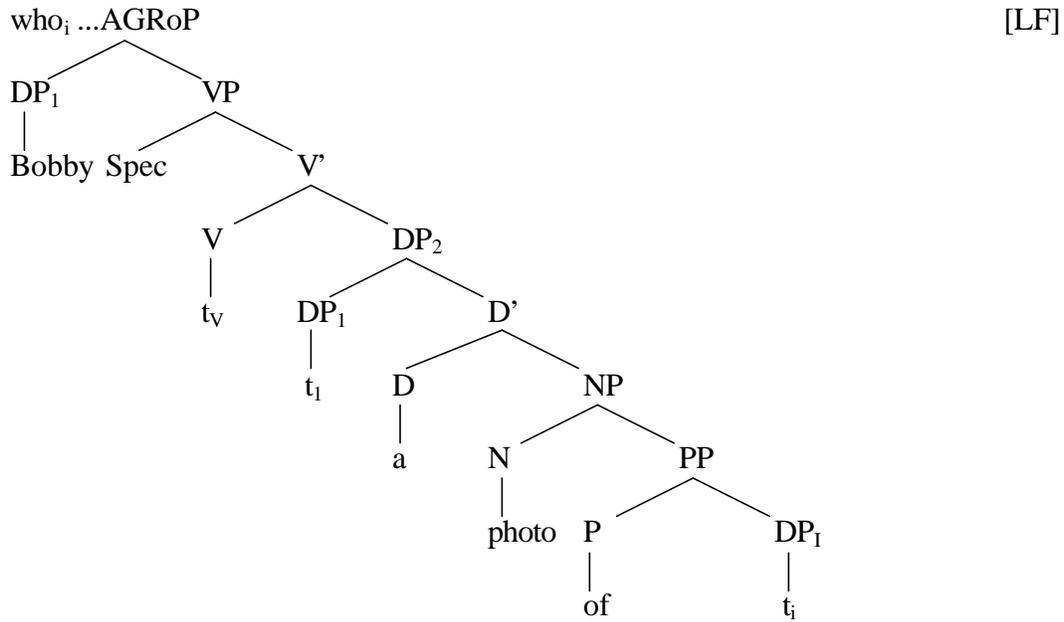
Now, let us consider the account of double objects I have proposed. Underlyingly, the two

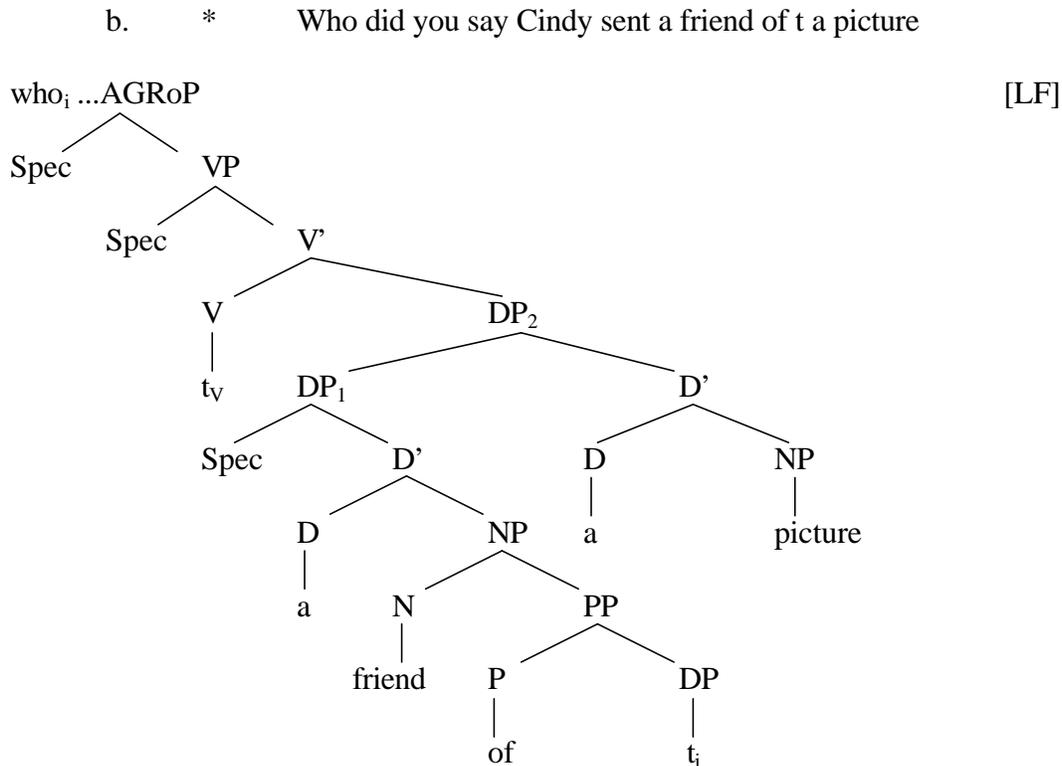
objects form one clausal DP in VP. In the overt syntax each object moves to its own Case position external to VP. In order to receive nonspecific interpretations the objects can lower to VP, following the Mapping Hypothesis. However, in VP, only the second object, the clausal DP itself, is theta governed. The second object's DP will not be a barrier to extraction. On the other hand, the first object, in the specifier position of the clausal DP, is not theta governed. Thus, it's DP will be a barrier to extraction.

Consider the structures:

(71) Extraction out of the Objects in the Double Object Construction.

a. Who did you say Cindy sent Bobby a photo of t?





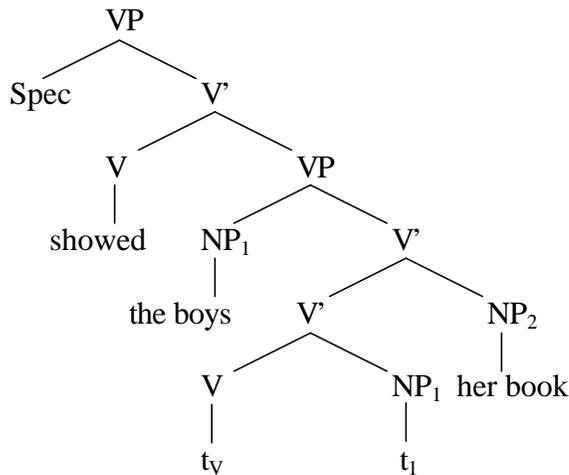
In (71)a, in which DP_2 is interpreted as existential, it "lowers" to VP at LF. DP_2 is, then, theta governed by the trace of V. Thus, DP_2 is not a barrier to extraction. Now consider (71)b. DP_1 is in Spec, DP_2 . While DP_2 is theta governed, DP_1 is not. Hence, DP_1 is a barrier to extraction.

The intuition behind this analysis is that extraction is impossible out of any LF specifier. But it is acceptable out of an LF complement. Since the DP_1 is a specifier throughout the derivation it has no chance of not being a barrier to extraction. Since DP_2 can lower to its base VP complement position, it can avoid being a barrier at LF.

This type of analysis is available not only to the clausal DP proponents. It also follows on an account of double objects in which the first object is base-generated in a VP-internal, but not theta-governed position. As long as the first object cannot end up in a complement position, the contrasts will follow. An account which base generates the first object as a complement, on the other hand, predicts it should not be a barrier for extraction. Let us now turn to such an account and see what happens.

Larson's (1988) account of the double object construction places the first object as complement of V at D-structure. The second object is adjoined to V'. At PF the first object is in Spec,VP:

(72) Cindy showed the boys her book



Taking Larson's (1988) structure at face value and applying my account of extraction out of object it appears that the wrong predictions are made. DP₁ is a D-structure complement and thus should be able to lower to that position, be theta governed, and not be a barrier. DP₂ is adjoined to V', but its V' sister, according to Larson (1988), reanalyzes as V to assign inherent Case, so perhaps it also theta governs in that configuration.

Thus, the problem is DP₁. Larson (1988) is of course not obligated to follow my analysis so let us consider other accounts consistent with his structure. He could claim that the ECP must be satisfied at S-structure. At S-structure DP₁ is in a specifier and thus is a barrier.

However, recall that extraction out of regular objects is acceptable, if they are nonspecific. On Larson's (1988) account a transitive object is base generated as a sister to V if there are no lower arguments. If there are lower arguments, the DP is base generated as a specifier:

- (73) a [IP e [VP John [V saw Mary]]]
- b [IP e [VP John [V e [VP Mary [V saw in the park]]]]]

In (a), the object *Mary* is generated as a sister to V. In (b), the PP *in the park* is generated as sister to V. *Mary* is generated in Spec,VP, as is *John*. Ultimately DP movement of the subject in both examples and verb movement in (b) derive the correct surface orders.

What this means is that sometimes an object is a complement and sometimes it is a specifier. Does this affect extraction possibilities? Extraction out of an object which is a specifier (b) is just as acceptable as extraction out an object which is a complement (a):

- (74) a Who did you say you saw t?
- b Who did you say you saw t in the park?

Larson's (1988) account, then, cannot try to link extraction (im)possibilities to specifier vs. complement position. It is not clear to me what other syntactic differences there could be between a regular direct object and DP₁ in the double object construction.

Summary: the clausal DP proposal can plausibly account for the fact that the first DP in a double object construction cannot be extracted out of. The account generalizes nicely to cover

extraction out of all LF specifiers. Larson's (1988) account, which treats the first DP in the double object construction on a par with a normal transitive object does not predict the extraction contrasts found.

5.4.2 The Specificity Effect

Having touched on the relationship between position and interpretation I will mention a curious generalization appearing to hold for the double object construction in English that was pointed out in a paper by Janina Radó (1994). If the second object is definite or specific, the first must also be. That is, if a potentially nonspecific indefinite object is DP₁, it must be given its specific interpretation if DP₂ is definite or also specific. The effect is more obvious when compared to the non-double object alternants:

- (75) a I sent a doctor the letter
b I sent the letter to a doctor

The effect is subtle and difficult to nail down. Comparing (a) and (b), (b) can mean that I sent some letter under discussion to some doctor or other. It seems to be unimportant to me or the hearer who the doctor is. (a) on the other hand implies that there is a specific doctor that I have in mind and that, though this doctor is not already salient in the discourse (hence the use of the indefinite), the hearer should take it to mean that I didn't just send the letter to any old doctor. (b) can be the answer to the question, "What did you do with the letter?" (a) does not seem an appropriate answer to this question.

This effect does not appear to be present when both objects are potentially nonspecific indefinites:

- (76) a I sent a doctor a letter
b I sent a letter to a doctor

I think for (a) and (b) both indefinites can get a nonspecific interpretation. This means that I am saying that I sent some doctor some letter and that the hearer need not be concerned with which doctor or letter. These can both be an answer to the question, "What did you just do?"

I will not give a full analysis of this phenomenon but will point in the direction of an answer. Diesing (1992), as discussed above, argued that the LF position of an indefinite determines its interpretation. A VP-internal indefinite is interpreted as an existential/non-specific indefinite. A VP-external indefinite and definite gets a presuppositional/specific interpretation; this is essentially her Mapping Hypothesis. Without going into the motivation for Diesing's (1992) hypothesis let us consider what it predicts for the cases at hand.

If nonspecific indefinites must be in VP at LF, then the mapping from S-structure to LF will have to involve lowering nonspecific subjects and objects back into their VP-internal base positions. On the other hand if specific indefinites and definites must be VP-external at LF to get the appropriate interpretation, they can remain in their S-structure, VP-external, positions for the mapping to LF.

Consider now the examples showing our specificity effect. The second object is specific/definite. It must be VP-external at LF. If the first object wants to be nonspecific it must lower to VP at LF. However, if the first object lowers to VP, it will not be able to bind its trace in the second object at LF, violating the ECP:

- (77) a I sent [a doctor]₁ [t₁ the letter]₂ [VP...] [LF]
 b *I sent [t₁ the letter]₂ [VP...[a doctor]₁...] [LF]

In (a), both objects are VP-external at LF, being interpreted as specific, and the ECP is satisfied. In (b) the second object is VP-external and thus specific, but the first object has lowered back into VP for a non-specific interpretation. However, doing so it has left its trace in DP₂ ungoverned thus violating the ECP at LF.

An alternative explanation would be that unless DP₂ lowers to VP, DP₁ has no VP-internal base position. Recall that DP₁ is base generated as the specifier of DP₂. If DP₂ remains in Spec,AGRO, so does the base position of DP₁, thus ruling out lowering for DP₁.

Either explanation, though, has at its root the clausal DP hypothesis and the claim that DP₁ is underlyingly part of DP₂.

6 Remaining Issues

6.1 Wh-Internal Traces

The clausal DP proposal, which places the trace of DP₁ in the specifier of DP₂, appears to make the wrong predictions in one domain. Consider the following examples:

- (78) a. What did you give John t?
 b. Which letters will you send Marcia t?
 c. How many calendars did you show Shirley t?

What is unusual about these cases is that we have overt wh movement of DP₂, the phrase containing the trace of DP₁. A couple questions are raised: (1) What is the internal structure of a wh phrase containing the trace of another argument? and (2) How does that trace satisfy the ECP?

Question (1) leads to a broader question: what is the internal structure of any phrase normally thought to be an entire DP, when it contains the trace of another argument? So, besides the wh phrases above, we have examples like the following:

- (79) a I gave him it
 b I showed him Mary

Standardly, pronouns and names are thought to be entire DPs, incapable of having material in their specifiers, if they even have specifiers. The clausal DP proposal would place DP₁ in the specifier of these phrases.

Whatever the answer to this question is, it is not an isolated problem for just the clausal DP proposal. The same question arises for other small clauses. For example, (a) arguably has the structure in (b):

- (80) a I consider John a good friend
 b I consider [John_i [t_i [a good friend]]]

In favor of this is the possibility of leaving a floating quantifier in the position of t:

- (81) a I consider the boys each a good friend
 b I consider [the boys_i [each t_i [a good friend]]]

Given this, the following duplicates the problem pointed out above:

- (82) Q: Do you consider John your best friend?
 Do you consider [John_i [t_i [your best friend]]]
 A: Yes, I would consider him/John that
 a I would consider [him_i [t_i that]], or
 b I would consider [him_i [that]]

In the answer the pronominal *that* refers to the predicate *your best friend*. Each of the two structures leaves us with questions. The first one again is, How can a pronoun have a trace in its DP? The second one is, If the pronoun does not have a trace in its DP, where did *him* come from?

In favor of the structure in (a) are examples like the following:

- (83) Q: Do you consider Mark and Robbie your best friends?
 A: Yes, I consider them/the boys each that, and more
 I consider [them_i [each t_i [that]]]

Also, it is possible to passivize *consider* completely removing its subject, uncontroversially leaving a trace:

- (84) Q: Has John always been considered your best friend?
 A: Yes, he₁'s always been considered [t₁ [that]]

On the assumption that *consider* takes a DP, not larger, small clause complement, it must be admitted that the pronoun *that* can replace the small clause while allowing the trace of the subject in its specifier:

- (85) [_{DP} t₁ [that]]

Let us assume, then, that in principle it is possible for a pronoun to contain a trace in its specifier. Having decided that, we can simply extend that to the case of names and wh phrases. That answers question (1). The wh phrase can have a trace in its specifier position:

- (86) what: [_{DP2} t₁ [what]]

Now, question (2) concerned how DP₁ binds its trace if the wh phrase containing the trace is moved overtly:

- (87) [_{DP} t₁ [what]]₂ did you give John₁ t₂

To satisfy the ECP, *John* must c-command t₁ at LF. What we want at LF is for at least some of the

moved phrase containing t_1 to be in the position of t_2 . Notice that this problem is duplicated for other small clauses:

- (88) Q: What do you consider John?
 $[_{DP} t_1 [\text{what}]]_2$ do you consider John $_1$ t_2
 A: I consider John a good friend

And passive can blatantly move the small clause subject uncontroversially leaving a trace in the moved wh phrase:

- (89) Q: What has John always been considered?
 $[_{DP} t_1 [\text{what}]]_2$ has John $_1$ always been considered t_2
 A: He's always been considered t a very close friend
 He $_1$'s always been considered $[_{DP} t_1 [\text{a very close friend}]]$

Notice that if the small clause is indeed a DP, an alternative analysis which might claim that only *a very close friend* is what *what* questions cannot be correct. The reason is that *a very close friend* is only a D', and it is a fairly common assumption that wh movement moves full DPs not D's.

To address question (2) let us develop a suggestion of Chomsky (1995). Chomsky was accounting for reconstruction effects like the following, which are quite parallel to our trace-in-DP examples. Compare (a) and (b):

- (90) a $[_{\text{Which pictures of himself}}_1]_2$ did Mary think John $_1$ bought t_2
 b $[t_1 [\text{what}]]_2$ did you give John $_1$ t_2

In both examples we have a moved wh phrase containing an anaphor, in (a) a reflexive, in (b) an DP trace.

Chomsky's proposal is that A'-movement uses the copy and delete strategy. That is, A'-movement leaves a full copy instead of a trace. Then, at some level we have the following for the double object example:

- (91) $[_{DP} t_1 [\text{what}]]_2$ did you give John $_1$ $[_{DP} t_1 [\text{what}]]_2$

To get from this to the properly interpretable LF representation Chomsky ((1995), p. 50) assumes that another operation, akin to QR, applies moving the wh word out of the wh phrase, leaving something like this in our example:

- (92) $[\text{what}] [_{DP} t_1 [t]]_2$ did you give John $_1$ $[\text{what}] [_{DP} t_1 [t]]_2$

He suggests then that we need to get from this kind of structure to the appropriate operator-variable structure. So, in the operator position (Spec,CP), everything but the operator must delete; in the trace position, the copy of the operator material deletes. This would leave us at LF the following representation:

- (93) $[\text{what}]$ did you give John $_1$ $[_{DP} t_1 [t]]_2$

Many questions are left open by this proposal. For example, what is this step, "akin to QR"? what ensures the correct deletion? etc. However, it does leave us with exactly the LF representation we need. *John* c-commands t_1 at LF and thus satisfies the ECP as desired. I will then leave this problem as potentially solvable.

6.2 Reconstruction: Wh-movement vs. QR

Once the question of how a wh-phrase can contain a trace is answered, a second question arises. If it is possible to "reconstruct" the DP containing the trace of DP_1 at LF, thus allowing DP_1 to bind t_1 , why is the same sort of operation not available for QR? Recall the scope freezing phenomenon found in the double object construction (from Section 5.2):

(94) The teacher assigned some student every problem

This can have only the interpretation in which DP_1 has scope over DP_2 . I suggested that this followed from the clausal DP proposal since DP_2 contains the trace of DP_1 :

(95) a. [some student]₁ [t₁ every problem]₂
 b. *[t₁ every problem]₂ [some student]₁ t₂

Interestingly the same facts hold for QR of expressions containing overt anaphors. Consider the following:

(96) Mary thought that some boy bought every picture of himself
 a. [some boy]₁ [every picture of [himself]₁]₂
 b. *[every picture of [himself]₁]₂ [some boy]₁ t₂

This can only be interpreted with *some boy* having scope over *every picture of himself* as in (a), not the reverse, as in (b). This restriction is quite plausibly analyzed as a binding problem: the anaphor needs to be bound by its antecedent. Once again this is quite parallel to our trace-in-DP example: we have a quantified expression containing an anaphor, this time DP trace. If the quantified expression QRs over the antecedent of the anaphor the trace is not bound at LF.

With overt wh movement, we found reconstruction was possible. With covert QR, reconstruction apparently is not possible. Recall that the copy and delete strategy for A'-movement was how we derived the reconstruction effects for wh movement. Why is reconstruction not possible with QR? There are two possible directions to look for an answer. The direction I will explore is the fact that QR is LF movement while wh-movement is "overt". Let's consider the possibility that only overt movement employs the copy and delete strategy while QR/LF movement does not. If this is right, and reconstruction effects are a by-product of copy and delete movement, then we have an explanation for the reconstruction differences between QR and wh-movement.

An apparent problem for this hypothesis is the following. Covert wh movement can exhibit reconstruction effects, suggesting that the copy and delete strategy is available for it:

- (97) Q: Who thinks that John bought which pictures of himself?
 A: Marcia thinks he bought the nude
 Greg thinks he bought the one in the clown outfit
 Cindy thinks he bought the one with the green frame

LF wh movement of the wh phrase in situ is assumed to account for the readings observed. What is important for us is that these readings are available even with the binding of *himself* by *John*. This suggests that an LF like the following is available:

- (98) which_i who thinks John₁ bought t_j pictures of [himself_i]

This is predicted on the copy and delete strategy for A'-movement. If covert wh-movement is LF movement then the hypothesis that LF movement does not employ the copy and delete strategy seems unlikely. However, an alternative explanation exists. It is conceivable that covert wh-movement is in fact copy movement prior to the split to PF and LF, followed by deletion of the top copy at PF. This will give the appearance of LF movement where none occurs. If this is the strategy that "covert" wh-movement takes, then our hypothesis that LF movement does not use the copy and delete strategy is maintained.

6.3 "Overt" Movement and Reconstruction

We are left with an interesting dichotomy. Wh-movement, which applies in the "overt" syntax (prior to the split to PF and LF), employs the copy and delete strategy as evidenced by the reconstruction effects observed. QR, which applies at LF, does not use copy and delete movement and shows no reconstruction effects. Why should there be such a dichotomy? Why is the copy and delete strategy not available at LF?

A potential answer to that question is available, depending on what exactly copying is considered to be. Let us assume that copying involves selecting the relevant (identical) elements from the lexicon and inserting them into the tree in the appropriate positions. What this means is that employing copying requires access to the lexicon. Chomsky (1995) argues that in principle access to the lexicon should be denied beyond the split to PF and LF, otherwise words could be inserted at PF that have no connection with LF, or vice versa. Thus, copying should be unavailable to LF "movement". This, then, derives our dichotomy: only movement prior to the split to PF and LF can employ the copy and delete strategy; therefore only such movement can show reconstruction effects. LF movement must use some other strategy, and no reconstruction effects are found.

7 Conclusion

In this paper I argued that both objects of the double object construction appear in VP-external Spec,AGRoP positions in the overt syntax. That part of the proposal accounts for the constituency and adverb facts. It also answers a very basic question about this construction: How are the two NPs licensed in the structure? The answer to this question is that they are licensed in the same way as typical direct object NPs are licensed: in a VP-external Case position. Further, I argued that underlyingly the two objects form a type of small clause, in which the first is in the specifier of the

second; this is meant to account for several semantic characteristics of the construction. That part of the proposal also makes a number of interesting predications about the LF relationships available to the two objects: since the first object is related to the specifier of the second by movement, the first object must always c-command the second at LF. This prediction is fulfilled in several ways, including a restriction on Passive, a "scope freezing" effect, a specificity effect and restrictions on extraction from the construction.

REFERENCES

- Barss, A. & H. Lasnik. 1986. A note on anaphora and double objects. *Linguistic Inquiry* 17: 347-354.
- Belletti, A. & L. Rizzi. 1988. Psych-verbs and θ -theory. *Natural Language and Linguistic Theory* 6: 291-352.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge: MIT Press.
- Diesing, M. 1992. *Indefinites*. Cambridge: MIT Press.
- Green, G. 1974. *Semantics and syntactic regularity*. Bloomington: Indiana University Press.
- Herslund, M. 1986. The double object construction in Danish. In *Topics in Scandinavian Syntax*, ed. by L. Hellan et al. Dordrecht: Reidel.
- Jackendoff, R. 1972. *Semantic interpretation in generative grammar*. Cambridge: MIT Press.
- Johnson, K. 1991. Object positions. *Natural Language and Linguistic Theory* 9: 577-636.
- Kayne, R. 1984. Principles of particle constructions. In *Grammatical representation*, ed. by J. Guéron et al. Dordrecht: Foris.
- Kayne, R. 1995. *Antisymmetry*. Cambridge: MIT Press.
- Koizumi, M. 1995. *Phrase Structure in Minimalist Syntax*. MIT doctoral dissertation.
- Larson, R. 1988. On the double object construction. *Linguistic Inquiry* 19: 335-391.
- Maling, J. 1976. Notes on quantifier postposing. *Linguistic Inquiry* 7: 708-718.
- Perlmutter, D. & P. Postal. 1983. Some proposed laws of basic clause structure. In *Studies in Relational Grammar I*, ed. by D. Perlmutter. Chicago: University of Chicago Press.
- Pollock, J.-Y. 1989. Verb movement, Universal Grammar, and the structure of IP. *Linguistic Inquiry* 20: 365-424.
- Potsdam, E. 1998. A syntax for adverbs. In *The Proceedings of the 1998 Western Conference on Linguistics*.
- Radó, J. 1994. Object positions, interpretation and agreement in Hungarian. In *University of Massachusetts occasional papers 17: functional projections*, ed. by E. Benedicto & J. Runner. Amherst: GLSA.
- Runner, J. 1995. *Noun phrase licensing and interpretation*. UMass-Amherst doctoral dissertation.
- Runner, J. 1998. *Noun phrase licensing*. New York: Garland Publications.
- Sportiche, D. 1988. A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry* 19: 425-449.
- Vikner, S. 1990. *Verb movement and the licensing of NP-positions in the Germanic languages*. Université de Genève doctoral dissertation.

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