

Economy, the copy theory, and antecedent-contained deletion

Jason Merchant

Northwestern University

This squib investigates the nature and syntactic placement of the restriction of quantificational determiners under the copy theory of movement and presents a brief argument from the interaction of antecedent-contained deletion (ACD) and Principle C that while relative clauses in ACD must be deleted from their base positions, complements and adjuncts in NP need not be, and hence must not be. *

1 Background

The paradigm in (1) has been discussed by Fiengo and May (1994) and Fox (1995). These authors note, following Chomsky (1981) among many others, that R-expressions in relative clauses on quantificational DPs trigger Principle C effects with respect to c-commanding pronouns, as in (1).¹

* I would like to thank Danny Fox, Jim McCloskey, and the two anonymous reviewers for helpful comments, as well as the audience at TABU-Dag, University of Groningen, June 1998. The main argument presented here has been independently discovered by Uli Sauerland (see Sauerland 1998). This work was supported by a Fulbright grant to the author.

¹ The status of examples like (1) has been the source of some debate. The traditional discussion of bleeding of BT(C) by QR has been largely limited to cases where the c-commanding pronoun was in subject position, as in (i):

(i) * He_i liked every guy I introduced Peter_i to.

- (1) a. ?? I introduced him₁ to every guy Peter₁ found attractive.
 b. ?? I sent her₂ every sweater Sheila₂ saw in the brochure.

This has traditionally been taken as an argument that LF-movement does not bleed Principle C of the binding theory (BT(C)), that is, that BT(C) must apply at S-structure. Chomsky (1995) however, who argues that the binding theory applies only at LF, reinterprets this fact to indicate that the restriction of the quantificational DP deletes from the moved constituent and remains in situ at LF, as in (2), motivating this selection by economy considerations: his ‘Preference Principle’. In such a representation, the name will still be c-commanded by the pronoun, triggering a BT(C) violation at LF, after QR and deletion:

- (2) [every x: ~~x-guy Peter₁ found attractive~~] I introduced him₁ to [x guy Peter₁ found attractive]

However, as pointed out by Fox (1995), requiring the restrictions of QRed constituents to remain in situ in all cases would be problematic for the account of ACD cases like (3).

No-one disputes the ungrammaticality of examples like (i). The evidence is less clear with double object cases as in (1), however. Many speakers find the indicated coreference in examples similar to (1) grammatical; see Kennedy 1997:685-686 (fn. 22) and Fox 1995:116-118, 1999:185 (fn.50) for discussion. The force of the argument in this squib goes through regardless of the status of such examples: everyone agrees that (at least) in ACD constructions, an apparent BT(C) violation is not found.

(3) I talked to every guy you did.

If the restriction is left in situ, the appropriate antecedent for resolving the ellipsis cannot be found, since the ellipsis site is still contained within its antecedent (the matrix) VP (the antecedent VP is enclosed in angled brackets, while the elliptical VP is in bold):

(4) [every x] I <talked to [x guy you did **talk to x**]>

Fox therefore argues that in the case of ACD, the only converging derivation is the one in which the moved restriction remains, and the in situ one deletes, yielding (5).² In this representation, the antecedent-containment is eliminated, and the matrix and embedded VPs are identical, satisfying the licensing condition on ellipsis.

(5) [every x: x guy you did **talk to x**] I <talked to x>

This modification of the application of the algorithm for deletion has an additional interesting consequence: if the restriction must be eliminated from its base position for independent reasons, we predict that the BT(C) effect noted above for (1) should be obviated, since in these cases the R-expression will be interpreted at LF only in its higher position.

Indeed, this is exactly right. In cases such as (6), as noted by Fiengo and May (1994), the indicated coreference is possible, in contrast to (1).

(6) I introduced him_1 to every guy Peter₁ wanted me to.

This sentence will have the representation in (7) as its only licit LF, with the in situ restriction eliminated to allow ellipsis resolution. In this structure, the R-expression *Peter₁* is no longer c-commanded by the pronoun *him₁* in the matrix clause.

(7) [every x: x guy Peter₁ wanted me to **introduce him₁ to x**]
I <introduced him₁ to x>

Hence QR *can* bleed BT(C), if ACD is involved.³

2 The extent of deletion in restrictions

² This account assumes, as I will here, that QR is phrasal movement at LF; see Wilder 1997 for discussion with respect to ACD especially.

³ This bleeding effect does not hold for co-indexed pronominal subjects, however, as the data in (i) indicate:

- (i) a. * He₁ liked most (of the) guys I wanted Peter₁ to.
- b. * She₂ read (us) every story Beth₂'s mom did.
- c. * She₃ didn't give me a single book Beth₃ promised to.

These show that the grammaticality of (6) does not arise from BT(C) being 'turned off' in ACD or the like—rather, the contrast between (6) and (i) shows that the landing site for QR (in (i), of the object DP) must be in the c-command domain of the subject (either via a segment theory of m-command à la May 1985 if QR targets IP, or because QR here targets a position below the subject as in Fox 1995, Merchant 1998, and Johnson and Tomioka 1998). For reasons of simplicity, I will ignore this complication in what follows, and continue to represent the adjunction site of QR as above the subject, as in (7).

The above discussion assumed that the deletion of the restriction of a moved quantificational DP was an all-or-nothing affair: the entire restriction either deletes or is retained. However, nothing forces this conclusion; in fact, as Nunes (1995) and Fox (1999) have argued, we should expect deletion to be costly by the Economy metric, up to interpretability. Economy should in fact favor representations with minimal deletion in both positions, yielding (8)b for a simple case of quantification like (8)a (see Fox 1999 for suggestions and references on how to interpret such LFs):

- (8) a. Abby read every book.
b. [every x: x book] Abby read [x book]

Since the restriction does not delete in the lower occurrence, the above explanation for Principle C effects at LF goes through under this modification, as the cases in (9) and their associated LFs in (10) show. (9)a,b demonstrate this for nominal arguments, and (9)c,d for adjuncts.

- (9) a. * I gave him₂ every evaluation of Bob₂.
b. * I gave him₂ every report on Bob₂'s division.
c. * I reported her₃ to every cop in Abby₃'s neighborhood.
d. * I showed her₃ every picture from Abby₃'s mantelpiece.

- (10) a. [every x: x evaluation of Bob₂] I gave him₂ [x evaluation of Bob₂]
 b. [every x: x report on Bob₂'s division] I gave him₂ [x report on Bob₂'s
 division]
 c. [every x: x cop in Abby₃'s neighborhood] I reported her₃ to [x cop in
 Abby₃'s neighborhood]
 d. [every x: x picture from Abby₃'s mantelpiece] I showed her₃ [x picture
 from Abby₃'s mantelpiece]

While this effect of minimizing deletions is harmless (if semantically redundant) in the general case, it is exactly in ACD structures that deletion must apply, non-economically, in order to satisfy parallelism; as Fox (1999:183) puts it, “the problem of ACD is solved only if the restrictor is eliminated from the base position”.

The assumption so far has been that when ACD requires deletion, the deletion is complete, yielding a simple variable as in (5) above. Combining this assumption with the ability of ACD to bleed BT(C), we expect that an R-expression which is embedded *anywhere* in the restriction of a quantificational DP in ACD structures will evade BT(C), since it will be deleted at LF. Surprisingly, however, this prediction is not borne out:

But such structures do not satisfy parallelism. In (13), the bracketed antecedent VP is not the same as the elided VP in bold. The apparent problem comes from the implicit assumption that the relative operator can only bind a simple variable. But if we assume that QRed constituents can bind ‘restricted’ variables as in (8)b, there is no reason for us not to expect this mechanism to extend to the binding of ‘restricted’ variables by relative operators as well⁵. A simple ACD construction like (14)a, then, will have the LF in (14)b, where the restriction of the QRed DP has been only partially deleted.

- (14) a. I talked to every guy you did.
 b. [every x: x guy Op you did **talk to [x guy]**] I <talked to [x guy]>

In particular, only the relative clause must delete in the lower occurrence, since it is the relative clause which contains the ellipsis site. The remaining material in the

⁵ In fact, under head-raising analyses of relative clauses like Kayne 1994, the traces of relative operators would seem to be exactly what is proposed in the text for the ACD cases, where the relative operator’s trace is supplied by the trace of a QRed constituent. However, it is unclear whether the head-raising analysis is correct (see Platzack 1997, Borsley 1997). Certainly the logic in the text with respect to BT(C) considerations cannot be extended generally to the traces of relative operators, since R-expressions in the external head of a relative clause (the bracketed material in (i)) do not trigger BT(C) violations:

- (i) a. I have a [report on Bob₁(’s division)] that he₁ won’t like.
 b. I read every [report on Bob₁’s division] he₁ ever submitted.

If the trace of the relative operator contained a copy of the external head and was not deleted, the LF of the relative clause in (ia) would be that in (ii), and we would expect a BT(C) effect, contrary to fact.

- (ii) ... that he₁ won’t like [x report on Bob₁(’s division)]

See Munn 1994 and Safir, to appear for discussion.

NP (here the descriptive content *guy*) is subject to the same considerations of economy brought to bear above—since it need not delete to resolve the ellipsis, it may not. Whether the additional material is an argument or an adjunct is thus irrelevant—since these phrases do not contain the ellipsis, they may not delete.⁶

Given this line of reasoning, one may wonder whether the entire relative clause itself need delete, that is, whether partial deletion (better obeying economy) internal to the relative clause may be possible. Perhaps, for example, the absolutely minimal amount of deletion would target only the regress-inducing VP, yielding (15):

(15) [every x: x guy Op you did **talk to [x guy Op you did]**]

I <talked to [x guy Op you did] >

This LF, however, suffers from the multiple defect that two of the three relative operators present have no variables to bind, ‘restricted’ or otherwise. We can thus conclude that when the relative clause contains the ellipsis site, the entire relative clause must delete to avoid regress.⁷

⁶ This logic should apply also in stacked relatives: if the offending R-expression is not in the same relative clause as the ellipsis site, we should retain a BT(C) effect. Unfortunately, the relevant data, given in (i), are not judged reliably by informants, perhaps due to their complexity. As such, I am wary of drawing any firm conclusions from them.

- (i) a. * I sent her₂ [every book [Abby₂ wrote] [that you wanted me to]].
 b. ?? I discussed her₂ with every psychiatrist who saw Abby₂ (that you did).
 c. ?? I dissed her₂ to every guy Abby₂ was dating (that you told me to).

⁷ Though the discussion in the text establishes this conclusion only for cases where QR is needed to provide a variable for the relative operator to bind, the conclusion is completely general and extends to

Under this conception of licit deletion targets, the LFs for the examples in (11) will be like that in (16)b, given for (11)a, repeated here as (16)a.

- (16) a. * I gave him₂ every report on Bob₂(’s division) you did.
 b. [every x: x report on Bob₂(’s division)]

Op you did **give him₂ [x report on Bob₂(’s division)]**]

I <gave him₂ [x report on Bob₂(’s division)] >

In this structure, the offending R-expression *Bob₂* remains in situ, correctly triggering the BT(C) violation.

With this revision to the theory of deletion in mind, let’s re-examine the original cases examined by Fiengo and May and Fox, in which Principle C is bled by ACD-driven QR. The relevant example, repeated here in (17)a, will have the LF in (17)b under the current proposal.

cases of ACD, discussed by Haik (1987) and Fiengo and May (1994), where the relative operator already is supplied with a variable, as in (i):

- (i) I talked to every guy who wanted me to.

Since argument structure may not change under ellipsis (see Chung et al. 1995 for extensive justification), every element in the ellipsis site will have to preserve the number and kind of arguments its overt counterpart exhibits, ruling out non-meaning preserving partial deletions like that in (ii):

- (ii) *[every x: x guy who wanted me to **talk to [x guy who wanted me]**]

I <talked to [x guy who wanted me]>

- (17) a. I introduced him₁ to every guy Peter₁ wanted me to.
 b. [every x:x guy Peter₁ wanted me to **introduce him₁ to [x guy]**]
 I <introduced him₁ to [x guy]>

Here, Fox's explanation remains unaltered, since what is left of the restriction in situ does not contain the R-expression.

One final case must be considered under the present proposal. One might wonder whether a BT(C) violation could arise at LF, due to the ellipsis resolution, if the relative clause contained a pronoun c-commanding the ellipsis site, and the restriction contained an R-expression coindexed to that pronoun. In such configurations, however, no Principle C effect arises:

- (18) I read every report on Bob₂(’s division) he₂ wanted me to.

This sentence should have the LF in (19), parallel to those seen above:

- (19) [every x: x report on Bob₂(’s division) he₂ wanted me to
read [x report on Bob₂(’s division)]]
 I <read [x report on Bob₂(’s division)]>

While there is no BT(C) violation in the matrix, the fact that the relative clause is not elided in the higher occurrence of the raised quantifier means that the R-expression *Bob₂* is c-commanded by the subject of the relative clause. This apparent violation of BT(C) at LF is not unique to the proposal here, though. It forms part of a large body of evidence presented in Fiengo and May 1994 that indicates that R-expressions can be

equivalent to pronominals under certain conditions in elliptical structures. Fiengo and May dub this equivalence *vehicle change*, and use it to account for facts like that in (20)a (p.275), which would seem to have the LF in (20)b:⁸

- (20) a. Mary introduced John₁ to everyone that he₁ wanted her to.
 b. [every x: x one that he₁ wanted her to **introduce John₁ to [x one]**]
 Mary <introduced John₁ to [x one]>

This LF has the same defect seen above: the R-expression *John₁* comes to be c-commanded by a coindexed pronoun in the relative clause after ellipsis resolution. By virtue of vehicle change, however, the overt R-expressions in these cases correspond to pronouns in the ellipsis site; the actual representation of these structures, then, is that in (21)a,b:

- (21) a. [every x: x report on Bob₂('s division) he₂ wanted me to
read [x report on him₂(his₂ division)]
 I <read [x report on Bob₂('s division)]>
 b. [every x: x one that he₁ wanted her to **introduce him₁ to [x one]**]
 Mary <introduced John₁ to [x one]>

⁸ In Merchant 1999, I show that we can dispense with an operation of vehicle change as such: the effects of interest here fall out from defining the parallelism condition on ellipsis in semantic terms, instead of structural ones as Fiengo and May do.

The fact that there is no BT(C) violation under ellipsis in (18) is thus independent of the proposal made here. Vehicle change, which applies only in ellipsis, will not be able to ameliorate the violations found in the matrix clauses of examples like (11), however.

3 Conclusion

We have seen that a surprising asymmetry in sensitivity to Principle C in ACD configurations can be simply accounted for if the restrictions of QRed DPs in ACD are subject to the same considerations of economy that are assumed to hold for non-ACD QRed DPs: as much of the restriction must be left as is compatible with parallelism. In general, this will mean that the entire restriction is left in situ, except in ACD cases, where the relative clause must be deleted to prevent regress. The parts of quantificational DPs in ACD which do not contain the ellipsis site, however, do not delete, and trigger BT(C) effects exactly like their non-ACD counterparts.

References

- Borsley, Robert. 1997. Relative clauses and the theory of phrase structure. *Linguistic Inquiry* **28**: 629-647.
- Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, Mass.: MIT Press.
- Chung, Sandra, William Ladusaw, and James McCloskey. 1995. Sluicing and logical form. *Natural Language Semantics* **3**:239-282.

- Fiengo, Robert, and Robert May. 1994. *Indices and identity*. Cambridge, Mass.: MIT Press.
- Fox, Danny. 1995. Condition C effects in ACD. In *MIT working papers in linguistics* 27, 105-120. Department of Linguistics and Philosophy, MIT, Cambridge, Mass.
- Fox, Danny. 1999. Reconstruction, binding theory, and the interpretation of chains. *Linguistic Inquiry* 30: 157-196.
- Haik, Isabelle. 1987. Bound VPs that need to be. *Linguistics and Philosophy* 10: 502-530.
- Johnson, Kyle and Satoshi Tomioka. 1998. Lowering and mid-sized clauses. In Graham Katz, Shin-Sook Kim, and Heike Winhart (eds.), *Reconstruction: Proceedings of the 1997 Tübingen workshop*. Arbeitspapiere des Sonderforschungsbereichs 340, Bericht Nr. 127, 185-205.
- Kayne, Richard. 1994. *The antisymmetry of syntax*. Cambridge, Mass.: MIT Press.
- Kennedy, Chris. 1997. Antecedent-contained deletion and the syntax of quantification. *Linguistic Inquiry* 27: 662-688.
- May, Robert. 1985. *Logical Form*. Cambridge, Mass.: MIT Press.
- Merchant, Jason. 1998. Antecedent-contained deletion in negative polarity items. Paper presented at Taalkunde in Nederland (TIN)-Dag, Utrecht University, January 1998.
- Merchant, Jason. 1999. *The syntax of silence: Sluicing, islands, and identity in ellipsis*. Doctoral dissertation, University of California, Santa Cruz.

- Munn, Alan. 1994. A minimalist account of reconstruction asymmetries. In *Proceedings of NELS 24*, 397-410. GLSA, University of Massachusetts, Amherst.
- Nunes, Jairo. 1995. *The copy theory of movement and linearization of chains in the Minimalist Program*. Doctoral dissertation, University of Maryland.
- Platzack, Christer. 1997. A representational account of restrictive and nonrestrictive relatives: The case of Swedish. *Working papers in Scandinavian syntax* 59: 65-96.
- Safir, Ken. To appear. Vehicle change and reconstruction in A'-chains. *Linguistic Inquiry*.
- Sauerland, Uli. 1998. *The meaning of chains*. Doctoral dissertation, MIT, Cambridge, Mass.
- Wilder, Chris. 1997. Phrasal movement in LF: *de re* readings, VP-ellipsis and binding. In *Proceedings of NELS 27*, 425-439. GLSA, University of Massachusetts, Amherst.