A restriction on 'vehicle change' and its interaction with movement

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This paper presents a restriction on the phenomenon descriptively known as "vehicle change" that has not, to our knowledge, previously been noted. Construing vehicle change as a kind of "tolerable mismatch" between an ellipsis site and its antecedent, the data we present suggest that exactly the same mismatches can *not* be tolerated between the members of a movement chain. While in principle one might consider the possibility that ellipsis and movement could be reduced to the same operation (Chomsky, 1995, 252–253) — that the deletion we usually describe as ellipsis might be the same operation as the deletion or "chopping" (in the sense of Ross (1967)) that applies to the unpronounced (usually lower) copy in a movement chain — the differences in what kinds of mismatches can be tolerated will pose a difficulty for this unification.

We present the crucial data that suggest that such a unification is not tenable in section 1 and then outline an explanation of these facts in section 2. This explanation is stated in terms of the way movement, ellipsis and vehicle change interact, while remaining largely agnostic about the exact mechanisms that implement these somewhat pre-theoretic notions. The consequences for these more fine-grained questions about the nature of ellipsis and movement are considered in section 3, and in section 4 we consider some further implications that depend on how vehicle change is understood.

1 The key contrast

The crucial facts in what follows concern instances of "stripping" or "bare argument ellipsis" (Depiante, 2000; Fiengo and May, 1994; Hankamer and Sag, 1976; Lobeck, 1995; May, 1991; McCawley, 1998; Merchant, 2004; Nakao, 2009; Reinhart, 1991). Two sim-

ple examples of intra-sentential stripping are shown in (1). Corresponding examples of cross-sentential stripping are shown in (2).

(1) a. Mary ate apples yesterday, but not John.

 b. Mary ate apples yesterday, but not oranges.

(2) a. A: Mary ate apples yesterday. B: Yeah, but not John.

 b. A: Mary ate apples yesterday. B: Yeah, but not oranges.

We will refer to the contrasted material that appears after *not* in these examples as the *remnant*. In (1a) and (2a), the remnant *John* is contrasted with the subject *Mary*; in (1b) and (2b), the remnant *oranges* is contrasted with the object *apples*.

 Following Depiante (2000), Merchant (2004) and Nakao (2009), we will analyze these stripping constructions as a combination of focus-movement and ellipsis. Specifically, we will assume that they are derived by fronting the remnant out of a clause that parallels the preceding clause, and then TP-ellipsis of the evacuated clause. This analysis is therefore analogous to common analyses of sluicing, the difference being that it is focus-movement rather than wh-movement that moves the remnant out of the ellipsis site. This is illustrated in (3), which shows the structures we assume for the relevant parts of (1) and (2). The elided TP is shown in gray, and the remnant is shown struck-out in its base position.

(3) a. . . . not John ~~John~~ ate apples yesterday.

 b. . . . not oranges Mary ate ~~oranges~~ yesterday.

From this point on we will focus on cross-sentential instances of stripping, in order to ensure that any syntactic dependencies we detect involving the remnant are wholly contained within the elided clause.[1] But as far as we are aware the generalizations that we report can all be replicated with intra-sentential stripping, and to the extent that this is the case it seems reasonable to suppose that the two constructions should receive a common analysis.

Given this background, the central fact we will focus on is the contrast between (4a) and (4b). The remnant in (4a), whether *he* or *him*, is to be understood as the subject of *say*; *him* is much more natural, but we will often write it as *he* to make clear that it is the subject of the elided clause.

(4) a. A: Someone said that John$_1$ left. B: Yeah, but not he$_1$/him$_1$.

   b. A: He$_1$ said that Mary left.   B: * Yeah, but not that John$_1$ left.

Using the same notational conventions as above, we can represent the relevant parts of (4) as follows, where we have in addition indicated the fronted remnant with square brackets.

(4′) a. . . . not [he$_1$] ~~he$_1$~~ said that John$_1$ left.

   b. * . . . not [that John$_1$ left] he$_1$ said ~~that John$_1$ left~~.

The puzzle posed by this data can now be stated as follows. The unacceptability of (4b) is the result of a Condition C violation in the elided clause, as we will demonstrate shortly. Why, then, is no analogous Condition C violation found in (4a)? The two examples both contain the same illicit binding configuration in the elided clause. The only difference, and therefore the difference that we will need to tie the acceptability contrast to, is in which part of the elided clause has been fronted to serve as the remnant. In particular, the offending R-expression *John* is part of the fronted remnant in (4b), and not in (4a). It is not immediately clear why this should matter, but the facts indicate that it does.[2]

The absence of a Condition C effect in examples like (4a) is often put down to vehicle change (Fiengo and May, 1994; Safir, 1999; Merchant, 2001), as we will discuss below, but this description of the fact simply flips the puzzle: why, then, is vehicle change not able to likewise circumvent the Condition C violation in (4b)?

To confirm that the unacceptability of (4b) is indeed due to Condition C, we can construct the variants in (5). Here the c-command relation that would trigger a Condition C violation is removed — by embedding the pronoun inside the subject in (5a), and by reversing the positions of the pronoun and the R-expression in (5b).[3]

(5)   a.   A: His$_1$ friends said that Mary left.   B: Yeah, but not that John$_1$ left.

        b.   A: John$_1$ said that Mary left.   B: Yeah, but not that he$_1$ left.

Since these are acceptable, it makes sense to conclude that it is Condition C which is violated in (4b), not some other grammatical constraint; and in turn, this means that Condition C is the constraint that is for some reason applicable in (4b) but not (4a).

2   An explanation in terms of vehicle change

Vehicle change is the phenomenon whereby a pronoun appears in an ellipsis site, in the position corresponding to an R-expression in the antecedent. The acceptability of (4a) can be seen as an instance of this phenomenon by supposing that instead of the offending element *John*, the ellipsis site contains a pronoun in the corresponding position. On this view, the relevant representation for (4a) will be as in (6) — rather than what we saw earlier in (4a$'$) — and no Condition C violation will occur.

(6)   … but not [he$_1$] ~~he$_1$~~ said that he$_1$ left.

Evidence that these sorts of cases do indeed involve a pronoun in the ellipsis site, rather than simply some sort of general repair or amnesty of Condition C violations, comes from the fact that Condition B effects can be detected; see Fiengo and May 1994, pp.221–222.

While the notion of vehicle change does not of itself shed any light on why (4a) should differ from (4b), we will adopt it as a useful descriptive term. In other words, we will tackle the "flipped" version of the puzzle mentioned above: why can vehicle change apply to circumvent a Condition C violation in (4a), but not in (4b)? We noted above that the offending R-expression *John* is part of the fronted remnant in (4b) but not in (4a), and that this seems to be the factor on which an account of the contrast must hinge. We must therefore explain why an R-expression that is part of the fronted remnant is not subject to vehicle change (whereas R-expressions that are not, are).

From this perspective, there appears to be a plausible answer: since a consequence of applying vehicle change in (4a) is that something *other than* the R-expression *John* is inside the ellipsis site, and since the remnant is simply a copy of a certain part of the ellipsis site, an appealing suggestion is that vehicle change *cannot* have applied in (4b), for if it had we would not have *John* inside the remnant, but rather we would have *he*. Since *John* is present inside the upper copy of the remnant that escapes ellipsis in (4b), *John* must also be present inside the lower copy of the remnant that is inside the ellipsis site. Put differently, if vehicle change *had* applied in the manner required to avoid the Condition C violation in (4b), the result would have been (7) instead.

(7)   A: He$_1$ said that Mary left.   B: Yeah, but not [that he$_1$ left] he$_1$ said that he$_1$ left.

In (4b), however, we can "see" that vehicle change has not applied, because we can see the offending R-expression in the remnant. The *John* in the remnant in (4b) "is" the offending R-expression that creates the Condition C violation, in much the same way that the one pronounced occurrence of *John* "is" the offending R-expression that creates the Condition C violation in (8).

(8)   * That John$_1$ left, he$_1$ said that John$_1$ left

So the key idea is that in (4b), there is no way for vehicle change to avoid the Condition C violation while leaving the occurrence of *John* in the remnant as it is. Either vehicle change will apply, in which case (7) is derived, or it won't, in which case Condition C is violated. In (4a), however, the offending R-expression is not connected with any part of the remnant in this way, and so there is no name pronounced in the remnant that "blocks" vehicle change — or, perhaps more correctly, there is no name pronounced in the remnant that rules out the possibility that vehicle change has occurred.

3 Consequences for theories of ellipsis and movement

What is crucial for the explanation we have proposed is that in (4b), but not (4a), the offending R-expression in the ellipsis site is connected in a certain way to an overt occurrence of *John* in the remnant. This connection is, specifically, a movement chain dependency. In (4a), however, the offending R-expression in the ellipsis site *is* connected, in a *different* way, to a different overt occurrence of *John*, namely that in the first clause. This connection is not a movement chain dependency, but rather an ellipsis-antecedent dependency.

We are forced to conclude, then, that the ellipsis-antecedent dependency that the unpronounced *John* enters into in (4a) is a "looser" kind of dependency — one that is more tolerant of mismatches — than the movement-chain dependency that the unpronounced *John* enters into in (4b). Only in the case of the movement-chain dependency is the connection "tight" enough for the overt occurrence of *John* to rule out the possibility that vehicle change has applied inside the ellipsis site.

As mentioned at the outset, this difference is difficult to reconcile with the otherwise appealing idea that, once movement is implemented via copies, ellipsis and movement might be reduced to instances of a single phenomenon (Chomsky, 1995, 252–253).[4] Both ellipsis and movement, this line of thought goes, are instances of the pattern where a certain thing appears twice in the structure but is pronounced only once. But if the relation between the unpronounced and pronounced instances of *John left* in (4a) is the same as the relation between the unpronounced and pronounced instances of *John left* in (4b), then there is no way to say that vehicle change (whatever it amounts to) must affect both relata in (4b) but can affect only one (leaving the other unchanged) in (4a). In fact, if the ellipsis-antecedent relation were the same as the movement-chain relation, then we would expect the vehicle change that rescues (4a) to also rescue not only (4b) but also (8); Safir (1999, p.607) makes a similar point but with regard to the application of vehicle change to entire links of A-bar

chains, rather than to proper subparts of such links as is the case in (8).

In the next section we follow this line of thought further to consider its implications for two different implementations of vehicle change.

4 Consequences for theories of vehicle change

4.1 Vehicle change as semantic equivalence

The relation that holds between members of a movement chain is usually taken to be, in effect, structural/syntactic identity. One way for the relation that holds between an ellipsis site and its antecedent to be different from this is for it to instead be semantic equivalence, as Merchant (2001) proposes. Before considering issues of R-expressions and pronouns, this is motivated by cases where there appear to be structural mismatches between an ellipsis site and its antecedent, such as (9).

(9)   Decorating for the holidays is easy if you know how.   (Merchant, 2001, p.22)

        Decorating for the holidays is easy if you know how to decorate for the holidays.

The idea that semantic equivalence, of a sort that holds between *decorating . . .* and *to decorate . . .* , suffices to license ellipsis provides one simple way to implement vehicle change: we simply assume that R-expressions and pronouns (if they bear the same index) are treated equivalently in the relevant calculation of a constituent's semantics. Then the pronoun is simply generated directly in the ellipsis site, just as the mismatching form *to decorate* is generated directly in (9).

This implementation of vehicle change sits comfortably with the explanation we proposed above for the critical contrast in (4). In (4a), no R-expression is ever generated in the ellipsis site, and the semantic parallelism between *John*$_1$ and *he*$_1$ licenses ellipsis; this is a straightforward instance of the way Merchant implements vehicle change. An attempted derivation of (4b) that likewise placed a pronoun in the ellipsis site would avoid any Condition C violation, but would end up with a pronoun also in the remnant position — since

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members of a movement chain stand in a structural identity relation — and would there-fore derive (7) instead. And the alternative attempted derivation of (4b) which places an R-expression in the ellipsis site will (while producing the R-expression in the remnant, as desired) violate Condition C.[5]

4.2   Vehicle change as a replacement operation

Another conceivable understanding of vehicle change is as an operation that *replaces* an R-expression in an ellipsis site with a pronoun. This will be an appealing alternative to the extent that there may turn out to be other reasons to believe that we should maintain a more syntactic (e.g. Hankamer and Sag, 1976; Fiengo and May, 1994; Romero, 1988), rather than semantic, identity condition on ellipsis (a question that we take no position on here): one can suppose that "after the identity condition is satisfied, a proper name can be replaced by a pronoun" (Cecchetto and Percus, 2006, p.93).[6] Similarly, Safir (1999, p.614) takes vehicle change to be an operation that "replaces a name or definite description with a pronoun in a position where the former would not be pronounced" (see also p.607).

If we construe vehicle change this way, then the explanation can be made to work but we must be slightly more careful. The reason is that we must rule out a derivation of (4b) where (i) the R-expression *John* is generated in the ellipsis site, (ii) the eventual remnant *that John left* is fronted, and finally (iii) vehicle change converts *the lower copy only* of *John* to *he*, circumventing the Condition C violation but leaving *John* as it is in the remnant. We identify two plausible ways in which this might be prevented.

The first option is to simply suppose that vehicle change must precede movement. Or, in terms of cyclic bottom-up derivations in the style of Chomsky (1995), vehicle change can not apply to any part of any constituent that has moved. This would ensure that, *if* vehicle change applies, then we end up with a pronoun at both ends of the movement chain. While adequate to describe the facts, this seems like a rather ad hoc stipulation.

The second and more interesting option is to rule out the possibility that step (iii) affects one end of the movement chain but not the other. Instead, we need it to be the case that even if vehicle change does apply after this movement chain is created, *John* is converted to *he* in both the remnant and the ellipsis site. The most natural way to think of a structure where this is the case is as a multidominance structure (e.g. Abels, 2003; Citko, 2005). On such a view, there is no possibility of converting one (copy of the) R-expression but not the other because there *is* only one (copy of the) R-expression. The problematic derivation of (4b) outlined in (i)–(iii) above is then naturally ruled out: if vehicle change applies (before or after movement), it will produce (7); if it doesn't, then Condition C will be violated.[7]

We are not making any attempt to argue that multidominance is the only way, or even the best way, to account for the contrast in (4) — the semantic equivalence approach to vehicle change handles the facts perfectly well, and even the stipulation that vehicle change must precede movement may turn out to be well-supported by other facts. But what we have described is a kind of situation where the multidominance theory can be distinguished from a theory that proposes relatively independent copies, because of their predicted interactions with another operation (vehicle change) that *modifies* syntactic objects. Of course, if one is opposed to the idea of multidominance structures, then one can always *say* that the relationship that holds between members of a movement chain is such that when something like vehicle change applies to one member, it affects all members equally, without calling the structure a multidominance structure.[8] To the extent, however, that there are discoveries to be made about how well the multidominance idea fits with the ways in which movement chains behave, interactions with these sorts of operations that modify structure will perhaps be a useful place to look. This also appears to raise the question of whether it is possible, even in principle, to make arguments for or against multidominance structures if one holds fixed the assumption that something like No Tampering (Chomsky, 2007) applies: if all syntactic structure is immutable once built, what differences can there be between having

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two immutable copies and simply having one?

5   A surprising detail

We now turn to some data that appears to cast doubt on our analysis of the central contrast in (4). This is the pair of stripping instances in (10).[9]

(10)   a. A: He$_1$ regrets making the claim that Jane was innocent.

B: *Yeah, but not the claim that John$_1$ was innocent.

b. A: He$_1$ regrets selling the picture that Jane took.

B: *Yeah, but not the picture that John$_1$ took.

Both examples in (10) are similar to the much-discussed (4b) in that the R-expression *John* is part of the fronted remnant, and so at first glance one might expect that our account would correctly rule them out in the same way that it rules out (4b). The difficulty, however, is that the R-expression in (10b) is inside a relative clause within the (by hypothesis) fronted constituent, and this is a configuration that is known to not give rise to Condition C effects (Freidin, 1986; Lebeaux, 1988). Specifically, our analysis seems to predict that the Condition C effect observed in (4b) and (10a) should disappear in (10b), for the same reason (whatever it is) that the Condition C effect observed in (11a) and (11b) disappears in (11c).

(11)   a. * That John$_1$ left, he$_1$ said.   (cf. (4b))

b. * The claim that John$_1$ was innocent, he$_1$ regrets making.   (cf. (10a))

c.   The picture that John$_1$ took, he$_1$ regrets selling.   (cf. (10b))

Our analysis accounts for the ungrammaticality of (4b) and (10a) by supposing that the elided clause in these examples has exactly the structure of (11a) and (11b), respectively. This approach is therefore called into question by the fact that (10b) diverges from (11c).

But this problem may be only illusory. For reasons we do not attempt to explain here, the distinctive behavior of relative clauses illustrated in (11) does not appear to carry over

to situations where the fronted constituent is contrastively focused, as shown in (12).

(12)　　a.　A:　He$_1$ didn't say that Mary left.

　　　　　　B: *Yeah, but that John$_1$ left, he$_1$ did (say).

　　　　b.　A:　He$_1$ doesn't regret making the claim that Jane was guilty.

　　　　　　B: *Yeah, but the claim that John$_1$ was innocent, he$_1$ does (regret making).

　　　　c.　A:　He$_1$ doesn't regret selling the picture that Mary took.

　　　　　　B: *Yeah, but the picture that John$_1$ took, he$_1$ does (regret selling).

This suggests that whatever allows the Condition C effect to be avoided in (11c) is somehow inapplicable when the fronted material is contrastively focused, as is the case for the crucial stripping examples. By this logic, our analysis correctly predicts (10b) to be ungrammatical because it is parallel to (12c), not to (11c).

　　The reason for the difference between (11) and (12) remains an open question. Research in this direction could shed light on the correct explanation of the more familiar pattern in (11). Lebeaux's (1988) classic analysis in terms of counter-cyclic adjunction, for example, could be supported by arguments that there is some plausible independent reason to believe that counter-cyclic adjunction of a constituent containing contrastive material is ruled out. Here we will make just one remark on this puzzle: it seems that it is indeed a reappearance of Condition C effects that we are observing in (12c) — rather than some other confound such as an incompatibility between, say, relative clauses and contrastive fronting — because (12c) contrasts with the minimally different (13).

(13)　　A: John$_1$ doesn't regret selling the picture that Mary took.

　　　　B: Yeah, but the picture that he$_1$ took, he$_1$ does (regret selling).

But note that our solution to the puzzle posed by (10) does not hinge on this: our main point is simply that whatever rules out (12c) should also rule out (10b).

6 Conclusion

Rather than arguing for a single, specific explanation for the contrast in (4), we have outlined a variety of approaches to the problem that appear to be adequate. The aim has been to highlight a common thread running through all of them, which will seemingly need to carry over to any other kinds of explanations that we have not directly considered. This is the point that there must be (at least) two distinct kinds of "present but unpronounced" elements: unpronounced members of movement chains behave differently from elided constituents.

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Notes

[1]For example, in (1b) one might wonder whether the remnant *oranges* is in the c-command domain of *Mary*, and one might wonder whether *oranges* is conjoined directly

with *apples* and then subsequently extraposed. These are the sorts of issues that we are putting aside by focusing on (2b) instead.

[2]Of course the presence of the offending R-expression is not the *only* difference between the remnant in (4a) and that in (4b): one remnant is a multi-word phrase while the other is a single word; one is a CP while the other is a DP; one contains a verb and the other does not; etc. But given that the effect to be explained is the appearance/disappearance of Condition C effects, the most promising path to follow appears to be to assume that it is the presence of the R-expression in the remnant which is making the difference.

[3]Ten native speakers confirmed the contrast between (4b) and (5).

[4]Other proposals that draw connections between ellipsis sites and "traces", without entirely identifying them, include Lobeck (1995) and Johnson (2001) (but see Aelbrecht and Haegeman (2012) for arguments against Johnson's proposal). Nunes (2004, 20–21) argues against this identification, emphasizing differences between ellipsis and traces: for example traces are often *obligatorily* unpronounced (ellipsis sites are only optionally so), and traces must be c-commanded by their antecedents.

[5]Of course, in addition to the mismatch between he_1 and $John_1$ in (4a) that can be described as vehicle change, the antecedence conditions on ellipsis must also allow for the mismatches between *he* and *someone* in (4a), and between *John* and *Mary* in (4b); these are the contrasting pairs that "license" the stripping construction in the first place (like *John* and *Mary* in (1a)). The conditions adopted by Merchant (2001, p.31) allow this as long as these elements are F-marked, which we assume.

[6]Cecchetto and Percus attribute this idea to Fiengo and May (1994), apparently incorrectly: Fiengo and May describe vehicle change in terms of the "indiscernability" of pronouns and R-expressions without explicitly invoking a replacement operation (as an anonymous reviewer points out). In appeals to vehicle change in the literature it is not always clear which of the two conceptions we outline here is intended.

[7]We have phrased the discussion in terms of PF-deletion (Merchant, 2001; Lasnik, 2001), but an analogous conclusion probably also follows under the alternative LF-copying approach (Chung et al., 1995): namely, that the structures created by the Form Chain operation are best thought of as multidominance structures.

[8]And similarly, if one found a situation that appeared to indicate the opposite pattern, where some modification of one member of a movement chain leaves the others unaffected, then one could always cling to multidominant syntactic structures by tying the modification to one of the multiple structural positions into which the crucial constituent has been plugged (say, but using a feature on the relevant *sister* of the crucial constituent to indicate that this modification happened).

[9]Thanks to an anonymous reviewer for pointing out this fact.