On vehicle change and ellipsis identity

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draft 1.0

July 18, 2022

Abstract

This article shows that, contrary to what was claimed in Fiengo and May 1994, vehicle change under ellipsis is not symmetric. Fiengo and May based their claim crucially on strict readings of elliptical structures, but as pointed out by Kitagawa 1991; Oku 1998; Safir 2004, such examples are open to an analysis sidestepping vehicle change in favour of covaluation. Once covaluation can be ruled out, it turns out that vehicle change is asymmetric: vehicle change is the retreat to the pronominal form. In this paper, covaluation is, for the first time, systematically controlled by considering dependent strict readings.

The article provides an explanation of the vehicle change asymmetry in terms of a structural recoverability condition on deletion in the spirit of Oku's Subset Copy Principle and Chung No New Words, which builds crucially on the idea that pronouns are, strcucturally, subsumed by definite DPs and SELF-anaphors.

Keywords: ellipsis, binding theory, vehicle change, beta-occurrence, recoverability of deletion, referential dependency, covaluation, accidental coreference, anaphor, Condition C, SELF anaphor, dependent strict readings, structure of DP, structure of pronouns, structure of anaphors,

1 Introduction

This article is about vehicle change. The term vehicle change will here be restricted to the (apparent) replacement of a DP in one binding theoretic class (R-expression, anaphor, or pronoun) by one in a different binding theoretic class. Thus, example (1) shows vehicle change from R-expression to pronoun (which I will represent as

R-expression $\models_{VC}$ pronoun) under verb phrase ellipsis and (2) shows the same for sluicing:

(1) Fatima arrested John$_j$, but, because it was dark, he$_j$ thinks Sana did.
   a. *he$_j$ thinks Sana arrested John$_j$
   b. he$_j$ thinks Sana arrested him$_j$

(2) Someone arrested John$_j$, but he$_j$ has no idea who.
   a. *…but he$_j$ has no idea who arrested John$_j$.
   b. …but he$_j$ has no idea who arrested him$_j$.

Vehicle change is surprising to the extent that there is structure present at the ellipsis site which is subject to a syntactic identity condition. On the other hand, the lack of a Condition C effect in (1) and (2) is expected if there is no structure at the ellipsis site or if the identity condition is purely semantic.

The current article has three logically independent but related aims. First, I will show using novel evidence that vehicle change is asymmetric, contra Fiengo and May 1994 (referred to hereafter as Fiengo and May), and represents a retreat to the pronominal form. Key data illustrating this asymmetry include the following examples. (3a) shows that an anaphor can vehicle change into a pronoun under ellipsis; the impossibility of (3b) under the interpretation indicated shows that vehicle change in the opposite direction is impossible. The same asymmetry can be seen in (4). The quantificational DP can vehicle change into a pronoun, (4a), but not into an anaphor, (4b).

(3) a. Every boy$_b$ praised himself$_b$ and every boy$_b$'s mother did ~~praise him $_{\overline{b}}$~~, too.
   b. *Every boy$_b$'s mother praised him$_b$ and every boy$_b$ did ~~praise himself $_{\overline{b}}$~~, too.

(4) a. Max voted for everyone who wanted him to ~~vote for them~~.
   b. *Max voted for everyone who did ~~vote for themselves~~.

The second aim of this article is to show that on reasonable, independently justified assumptions about the structure of R-expressions, pronouns, and anaphors, this asymmetry is expected and follows directly from recoverability of deletion under a syntactic approach to ellipsis identity. That is, principles like Oku's 1998 *subset copy principle* and Chung's (2005) *no new words*) which are based on a syntactic conception of recoverability of deletion deal with the asymmetry above in a natural way. Third, I point out that it is not obvious how the asymmetric characterization of vehicle change could follow from a purely semantic approach to ellipsis resolution.

The article is structured as follows. Section 2 is a brief and selective summary

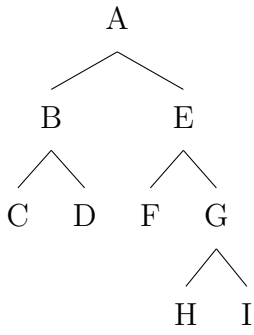
of Fiengo and May 1994's theory of indices and vehicle change. Section 3 shows on the basis of dependent strict readings that R-expressions and anaphors can vehicle change to pronouns but neither R-expressions nor pronouns can vehicle change to anaphors. The section fills a gap in the data considered by Fiengo and May 1994. With the missing data in place, Fiengo and May 1994's claim that all binding theoretic types of DPs form a single equivalence class under ellipsis becomes untenable. Section 4 introduces some independently motivated assumptions about the structure of R-expressions, anaphors, and pronouns. It further shows how, given these assumptions, vehicle change as retreat to the pronominal form follows from syntactically construed recoverability of deletion. Section **??** concludes with some broader discussion of the syntactic versus semantic nature of ellipsis resolution and the nature of UG more broadly.

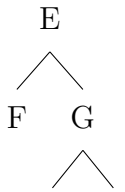
In the final paragraph of this section I briefly lay out my assumptions about recoverability of deletion. As shown in Fiengo and Lasnik, 1972, deletion must be recoverable. Material that has overtly moved out of the ellipsis site is not deleted and is, therefore, recoverable (e.g. Merchant 2013, p. 460, Chung 2013, p. 30, Saab 2016, fn 14). For this reason, the following considerations apply only to material all of whose copies (or occurrences) are contained in the ellipsis site. The existence of vehicle change suggests that recoverability cannot be conditional on strict identity but that the ellipsis site must instead contain a structure that is structurally and or featurally a substructure of the antecedent. I will therefore assume that if a terminal in the antecedent is made up of several features (for concreteness say α and β), then the ellipsis site may contain a terminal (in the same position) made up of any subset of those features (only α, only β, α and β, or nothing – but no combination introducing a new feature γ).[1] Similarly, the structure of the antecedent may be richer than the structure of the ellipsis site (but not the other way around). That is, the antecedent may contain terminals, branches, and nodes not included in the ellipsis site in the same relative arrangement. But the ellipsis site may not contain terminals, branches, and nodes not included in the antecedent. The intuition is illustrated in (5). (5a) is richer than (5b-d). Furthermore, the nodes are arranged in the same relative way in (5a–c) but differently in (5d). For these reasons, (5a) is a possible antecedent for both (5b) and (5c) but not for (5d). None of (5b–d) are possible antecedents for (5a).[2]

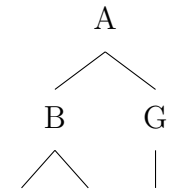
[1] This is Oku's subset copy principle. See Oku 1998 for a demonstration of the validity of this principle beyond the narrow concerns of vehicle change.

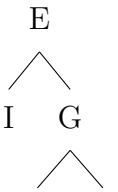
[2] Put more formally, the intuition gestured at here is the following:

(i) Let tree T_A, the antecedent, be characterized as a set of (terminal or non-terminal) nodes N_A with a function Cat_A assigning each node its category and the dominance relation Dom_A in N_A x N_A and let tree T_T, the target, be characterized as a set of (terminal or non-teminal) nodes N_T with a function Cat_T assigning each node its category and the

(5) a. 

b. 

c. 

d. 

I will refer to the condition on antecedent-ellipsis-site relations sketched in this paragraph as *structural recoverability* in the remainder of this article.

2 A selective review of Fiengo and May 1994

Fiengo and May start with a standard GB-style binding theory, which partitions DPs into three classes, each subject to a different condition: R-expressions, anaphors, and pronouns. Anaphors are subject to condition A of the binding theory, which roughly demands that they be coindexed with a c-commanding DP in an A-position within the same clause. Coindexing is interpreted as coreference or semantic binding while contraindexing precludes binding and indicates a lack of grammatically determined coreference.

(6) a. $\{\text{Manu} \mid \text{Every musician}\}_{\text{m}}$ likes himself$_{\text{m}}$.

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dominance relation Dom_T in N_T x N_T. We will say that T_T preserves T_A's structure just in case

a. $\text{N}_\text{T} \subseteq \text{N}_\text{A}$; and
b. Cat_T is the restriction of Cat_A to the nodes of T ($\text{Cat}_\text{T} = \text{Cat}_\text{A} \mid_{\text{N}_\text{T}}$); and
c. Dom_T is the restriction of Dom_A to N_T x N_T. (For all d $\in$ Cat_T x Cat_T, d$\in$ Dom_T iff d$\in$ Dom_A.

We can think about this tree-to-tree mapping also in procedural terms. Fox and Katzir 2011; Katzir 2007, 2008 develop a notion of structural alternative to a given treelet. Structural alternatives can be derived by (a) removing nodes and branches from an existing treelet and (b) replacing lexical items by other lexical items with the same category from the lexicon. This procedure captures the same intuition as the representational statement in (i). To capture both the featural and the structural condition from the main text, we need to restrict the replacement of terminals (in the case of ellipsis) to terminals with a subset of the features of the terminal being replaced.

Katzir, and Fox and Katzir use their notion of alternatives to solve the symmetry problem that arises with focus alternatives and scalar implicatures. To the extent that Katzir and Fox and Katzir are on the right track, their work provides independent evidence for the notion of substructure evoked here.

b. *{Manu | Every musician}$_{m}$ thinks that Leonora likes himself$_{m}$.
c. *Leonora expected himself$_{m}$ to like {Manu | him | himself | every musician}$_{m}$.
d. *{Manu | Every musician}$_{m}$'s sister likes himself$_{m}$.

Thus, (6a) is grammatical on the indexing (and interpretation) indicated, while (6b) is impossible the anaphor and its intended binder are too far apart. Finally, (6c-d) are ungrammatical because the anaphor is not c-commanded by its intended binder.

Pronouns are subject to principle B of the binding theory, which roughly precludes coindexation in exactly the environments where principle A demands it: a pronoun must not be coindexed with a c-commanding DP in an A-position within the same clause. Note therefore how, under the indexing and interpretation indicated, the judgments reverse between (6) and (7). It is worth pointing out that (6d) demonstrates that possessors do not c-command out of their containing possessed DP but this is not an obstacle to establishing a semantic binding dependency, as (7d) shows.

(7) a. *{Manu | Every musician}$_{m}$ likes him$_{m}$.
b. {Manu | Every musician}$_{m}$ thinks that Leonora likes him$_{m}$.
c. Leonora expected him$_{m}$ to like himself$_{m}$.
d. {Manu | Every musician}$_{m}$'s sister likes him$_{m}$

Finally, condition C demands that R-expressions not be coindexed with any c-commanding DP in an A-position:

(8) a. *He$_{m}$ likes {Manu | every musician}$_{m}$.
b. *He$_{m}$ thinks that Leonora likes {Manu | every musician}$_{m}$.
c. Leonora expected {Manu | every musician}$_{m}$ to like himself$_{m}$.
d. His$_{m}$ sister likes {Manu | *every musician}$_{m}$.

Condition C straightforwardly rules out (8a-b) and allows (8c-d). The fact that despite all of this (8d) is ungrammatical on the indicated indexation with *every musician* is the result of weak crossover, an additional constraint on binding.

This much is familiar: DPs carry a subscripted binder index whose distribution is determined by DP class in line with the binding theory and which constrains interpretation in the sense that co-indexation signals co-reference and the potential of a referential dependency while contraindexing does not necessarily signal non-coreference but does signal absence of a referential dependency.

In addition to the (subscripted) binder index, Fiengo and May assume that DPs carry a dependency index, which can take one of the two values α and β and which they notate as a superscript. The α index signals referential independence, familiar behaviour for names and other typical R-expressions as well as referential

pronouns. The β index signals referential dependency, the typical behaviour of anaphors and bound pronouns. Crucially, referential dependency does not reduce to binding in the sense of the binding theory and binding in the sense of binding theory does not necessarily lead to a referential dependency. We saw an example of a dependency without binding-theoretic binding in (7b). To see an example of co-indexation under c-command without a referential dependency, consider (9). The example has two interpretations paraphrased in (9a) and (9b), with the indexing indicated:

(9) Only John thinks that he will win.

a. John is the only x such that x thinks x will win.
Only $\text{John}_{\text{j}}^{\alpha}$ thinks that $\text{he}_{\text{j}}^{\beta}$ will win.

b. John is the only x such that x thinks John will win.
Only $\text{John}_{\text{j}}^{\alpha}$ thinks that $\text{he}_{\text{j}}^{\alpha}$ will win.

In the first, referentially dependent interpretation of the pronoun, what it picks out varies with the alternatives to John quantified over by *only*. In the second indexing, the pronoun picks out John without varying with the alternatives to John: it is referentially independent despite the fact that it is bound in the sense of the binding theory.

The focus of the present article is on the interaction of binding, referential dependency, and ellipsis resolution, an issue treated at length in Fiengo and May 1994. Fiengo and May suggest that a referentially independent DP with index i in the ellipsis antecedent ($\text{DP}_{\text{i}}^{\alpha}$) corresponds to a referentially independent DP with the same indexical structure ($\text{DP}_{\text{i}}^{\alpha}$) in the ellipsis site. Thus, α-indexed DPs give rise to strict readings:

(10) John tidied up $\text{his}_{\text{j}}^{\alpha}$ room and Raam did ~~tidy up $\text{his}_{\text{j}}^{\alpha}$ room~~, too.

While indexical identity is necessary in such cases, morphosyntactic identity is not. Thus, Fiengo and May assume that the proper representation of (11) under the reading where *he* and *John* are coreferent is (11a) rather than (11b), because the latter is incompatible with condition C of the binding theory.[3]

[3]Another representation to consider is the following:

(i) Fatimah arrested $\text{John}_{\text{j}}^{\alpha}$, but because it was dark $\text{he}_{\text{k}}^{\alpha}$ thinks that Sana did ~~arrest $\text{John}_{\text{j}}^{\alpha}$~~.
with $[\![\text{j}]\!] = [\![\text{k}]\!]$

This structure has the same interpretation as (11a) and is also compatible with the binding theory because *John* and *him* are contraindexed.

I adopt Reinhart's (2006) term *covaluation* for structures with coreference under contraindexing. I avoid the term *accidental co-reference*, which is often used to describe this situation, in order to avoid the impression that co-reference is accidental from the perspective of the speaker

(11) Fatimah arrested John, but because it was dark he thinks that Sana did.

a. Fatimah arrested $\text{John}_{\text{j}}^{\alpha}$, but because it was dark $\text{he}_{\text{j}}^{\alpha}$ thinks that Sana did ~~arrest $\text{him}_{\text{j}}^{\alpha}$~~.

b. Fatimah arrested $\text{John}_{\text{j}}^{\alpha}$, but because it was dark $\text{he}_{\text{j}}^{\alpha}$ thinks that Sana did ~~arrest $\text{John}_{\text{j}}^{\alpha}$~~.

According to Fiengo and May, the indexical structure is what matters whereas the morphosyntactic form is a mere vehicle for the index and is subject to change without affecting ellipsis identity and recoverability.

Conditions for resolving dependent occurrences of DPs in ellipsis sites are more complicated. Fiengo and May observe that when an ellipsis antecedent contains a dependent DP (with the head of the dependency outside of the antecedent) the corresponding DP in the ellipsis site must also be dependent and, moreover, the dependencies must in a certain sense be the same. Observationally, there are two ways in which dependencies can count as the same: a structural way and an interpretive way.

To get a sense for structural identity of dependencies, consider examples (12a) and (12b). As indicated, the possessive pronoun in the non-elliptical (12a) has two different dependent construals. It can be construed as dependent on the embbedded subject (*Harry*) or as dependent on the matrix subject (*Oscar*). The elliptical version in (12b) allows only one dependent reading of the pronoun; it only allows the dependent interpretation in which the pronoun depends on the local subject.

(12) $\text{Manu}_{\text{m}}^{\alpha}$ saw $\text{his}_{\text{m}}^{\beta}$ mother and…

a. …$\text{Oscar}_{\text{o}}^{\alpha}$ said $\text{Harry}_{\text{h}}^{\alpha}$ saw $\text{his}_{\text{h}\,|\,\text{o}}^{\beta}$ mother, too.

b. …$\text{Oscar}_{\text{o}}^{\alpha}$ said $\text{Harry}_{\text{h}}^{\alpha}$ did ~~see $\text{his}_{\text{h}\,|\,*\text{o}}^{\beta}$ mother~~, too.

The dependencies between the possessors and their local subjects are parallel, which accounts for the reading that (12b) has in common with (12a). However, the dependency between possessor and matrix subject is not parallel to the dependency in the first conjunct and (12b) lacks the second dependent interpretation of (12a).[4]

The interpretive route to identical dependencies rests on the heads of the referential dependencies being sufficiently similar to each other semantically. The simplest case (for non-quantificational R-expressions) is referential identity. This

in such cases, a notion that Fiengo and May strenuously object to.

We return to the issue of covaluation below. The counterexamples to Fiengo and May's theory in section 3 will crucially come from examples where mere covaluation can be excluded.

[4]Fiengo and May 1994 cash out the intuition about parallel dependencies in terms of minimal factorizations of a string. This, they argue, removes just the right amount of detail from the structural description. We need not worry about the details here, since the crucial examples in section 3 involve the interpretive way of counting as the same dependency.

is illustrated in (13). The elliptical VP can be interpreted to mean that Harry saw Manu's mother.

(13) $\text{Manu}^{\alpha}_{\text{m}}$ saw $\text{his}^{\beta}_{\text{m}}$ mother and {he | the idiot}$^{\alpha}_{\text{m}}$ claims that $\text{Harry}^{\alpha}_{\text{h}}$ did ~~see $\text{his}^{\beta}_{\text{m | h}}$ mother~~, too.

Of course, the interpretation of interest in (13) is the one where *his* in the ellipsis site is referentially dependent on the non-local subject ($\text{his}^{\beta}_{\text{m}}$). Semantically, this interpretation coincides with the strict reading (14):

(14) $\text{Manu}^{\alpha}_{\text{m}}$ saw $\text{his}^{\alpha}_{\text{m}}$ mother and {he | the idiot}$^{\alpha}_{\text{m}}$ claims that $\text{Harry}^{\alpha}_{\text{h}}$ did ~~see $\text{his}^{\alpha}_{\text{m | *h}}$ mother~~, too.

To see that there is actually a dependent reading as indicated in (13) we need to look at dependencies with a quantificational head. What does it take for the quantificational heads of referential dependencies to be semantically sufficiently similar? Fiengo and May 1994 suggest that the two quantifiers must determine the same range for the dependent index.[5] This condition is met in (15), because *every boy* ranges of the same individuals as *most of them* and *none of them*. Consequently, the dependent interpretation of the ellipsis site is available. It is available despite the fact that the dependency into the antecedent VP does not – as (12b) above shows – license the observed dependency in (15) via the route of structural parallelism.

(15) $\text{Every boy}^{\alpha}_{\text{b}}$ likes $\text{his}^{\beta}_{\text{b}}$ picture {and most of $\text{them}^{\alpha}_{\text{b}}$ | but none of $\text{them}^{\alpha}_{\text{b}}$} think that Sana does ~~like $\text{his}^{\beta}_{\text{b}}$ picture~~, too.

Following Fiengo and May 1994, I will call such readings *dependent strict*. Dependent strict readings are crucial for the argument to come, because they tolerate

[5] In their response to Williams 1995, Fiengo and May 1995 distance themselves strongly from the formulation given here, but it does seem to characterize the facts rather well. As we will see in footnote 6, the examples that Williams raises as problems have an alternative account.

Merchant 2001, 2016 uses the contrast in (i) to motivate the claim that the index in the dependency into the ellipsis site has to have an identical or strictly smaller range than the index in the dependency reaching into the antecedent. I will ignore this refinement for the most part, as nothing hinges on it.

(i) Merchant 2016, 8-9 ex. 47–48

a. I met with every $\text{inmate}_{\text{inmate}}$, though most $\text{lifers}_{\text{lifer}}$ said I hadn't.
   = met with $\text{them}_{\text{inmate}}$
   = met with $\text{them}_{\text{lifer}}$

b. I met with every $\text{lifer}_{\text{lifer}}$, though most $\text{inmates}_{\text{inmate}}$ said I hadn't.
   = met with $\text{them}_{\text{lifer}}$
   ≠ met with $\text{them}_{\text{inmate}}$

structural mismatches between the dependency into the antecedent and the dependeny into the ellipsis site while at the same time showing clear evidence of a semantic dependency: covaluation is not an option.

Fiengo and May 1994's generalizations can be summarized within their theory of indices as follows: (i) an α-indexed $\mathrm{DP}^{\alpha}_{\mathrm{i}}$ can antecede another $\mathrm{DP}^{\alpha}_{\mathrm{i}}$ under ellipsis as long as the elided DP has the same superscript and subscript index. This yields a (referential) strict reading. (ii) a β-indexed $\mathrm{DP}^{\beta}_{\mathrm{j}}$ can antecede a counterindexed $\mathrm{DP}^{\beta}_{\mathrm{k}}$ under ellipsis so long as the second DP is also a dependent (β-indexed) occurrence and the dependency relation between the DP in the antecedent and what it depends on is structurally identical to the dependency between the DP in the ellipsis site and what it depends on. This yields sloppy readings. Finally, (iii) a β-indexed $\mathrm{DP}^{\beta}_{\mathrm{j}}$ can antecede a second dependent, co-indexed $\mathrm{DP}^{\beta}_{\mathrm{j}}$ as long as both variables are restricted to the same range. This yields the dependent strict reading.

Fiengo and May (1994, especially pp. 213–215) argue explicitly that the classification of antecedent and elliptical DP for purposes of the binding theory is irrelevant: any binding-theoretic type of DP can antecede and be anteceded by any binding-theoretic type of DP. The morpho-syntactic form of the DP, though relevant for the binding conditions, is a mere vehicle for what really matters: the index. As long as the above constraints on indices are obeyed, the vehicle can change freely under ellipsis.

The next section briefly reviews the evidence. The focus is on dependent strict readings, since Fiengo and May fail to provide evidence for $\models_{VC}$ anaphor under dependent strict readings. As we will see, such readings are in fact impossible.

3 Constraints on Vehicle Change

Example (1) (repeated above as (11)) illustrated the possibility in principle of vehicle change to a pronoun ($\models_{VC}$ pronoun). As just noted, Fiengo and May claim that vehicle change from any binding-theoretic class into any other binding-theoretic class of DP is possible.[6] Fiengo and May provide impressive evidence to

[6]Fiengo and May note that {pronoun | anaphor} VC R-expression is not easily detectable because grammatical examples can also be derived via anaphor $\models_{VC}$ pronoun (and leaving pronouns alone) and ungrammatical cases (condition C violations) can be circumvented by simply not applying vehicle change.

The exception to undetectability are A'-traces, which Fiengo and May treat as R-expressions ([-anaphoric, -pronominal]) in line with GB assumptions. They offer the following example to illustrate that the pronoun *it* can undergo vehicle change to a trace (R-expression) in the ellipsis site:

(i) Which $\mathrm{paper}_{\mathrm{i}}$ did the student who was supposed to read $\mathrm{it}^{\alpha}_{\mathrm{i}}$ refuse to ~~read $\mathrm{t}^{\alpha}_{\mathrm{i}}$~~ Fiengo

substantiate their claims, but as the table summarizing the data shows, there are also conspicuous gaps:[7]

(16) Observation – gaps in Fiengo and May's data:

VC		(referential) strict	dependent strict
anaphor	$\models_{VC}$ pronoun	yes	yes
R-expression	$\models_{VC}$ pronoun	yes	yes
pronoun	$\models_{VC}$ anaphor	yes	absent
R-expression	$\models_{VC}$ anaphor	yes	absent
pronoun	$\models_{VC}$ R-expression	irrelevant (see fn 6)	
anaphor	$\models_{VC}$ R-expression	irrelevant (see fn 6)	

The remainder of this section briefly reviews the evidence provided by Fiengo and May. The evidence for vehicle change to pronouns is convincing. However, the data absent from Fiengo and May turn out to be ungrammatical. Moreover – and as already noted in Kitagawa 1991; Oku 1998; Safir 2004 – the examples of vehicle change to anaphors based on referential strict readings is systematically open to reanalysis in terms of covaluation without any vehicle change. This section will therefore show that there is no $\models_{VC}$ anaphor.

3.1 $\models_{VC}$ pronoun

In this subsection, we sample the evidence for vehicle change resulting in pronouns. We first investigate anaphor $\models_{VC}$ pronoun an then turn to R-expression $\models_{VC}$ pronoun.

and May 1994, p. 225 ex. 82

However, A'-traces inside of ellipsis sites need no antecedents at all, (ii), and neither are they subject to the parallelism constraints (either structural or interpretive), (iii):

(ii) a. Josh will arrive but I don't know when.
b. Josh ate, but I don't know what.

(iii) Josh bought a book but I don't know what else.

Examples relevantly like (iii), lead Williams 1995, p. 573 to reject the idea of ellipsis identity based on the identity of semantic ranges, see fn. 5. Indeed and as noted at the end of section 1, modern approaches (e.g. Merchant 2013, p. 460, Chung 2013, p. 30, Saab 2016, fn 14) treat such cases differently, essentially, because the elided foot of the movement chain can be recovered, under any version of the copy theory or multi-dominance theory of movement, by the material in the head of the chain outside of the ellipsis site.

[7]Attentive readers will notice that the table contains no column for sloppy readings. This is because sloppy readings are based on structurally parallel dependencies, which allows any DPs in the antecedent to maintain their binding-theoretic class in the ellipsis site: sloppy readings never necessitate vehicle change.

anaphor $\models_{VC}$ pronoun

Fiengo and May provide a battery of examples with (referential) strict readings to illustrate the availability of vehicle change from anaphors to pronouns. A small sample is given below:

(17) a. John$^{\alpha}_{j}$ believes himself$^{\beta}_{j}$ to be heroic and he$^{\alpha}_{j}$ said that Mary does ~~believe {*himself | him$^{\beta}_{j}$} to be heroic~~, too. Fiengo and May 1994, 206 ex. 24

b. Max$^{\alpha}_{m}$ hit himself$^{\beta}_{m}$ before Oscar did ~~hit him$^{\beta}_{m}$~~. Fiengo and May 1994, 206 ex. 27

c. Bush$^{\alpha}_{b}$ voted for himself$^{\alpha}_{b}$ but Barbara didn't ~~vote for {*himself | him$^{\alpha}_{b}$}~~. Fiengo and May 1994, 207 ex. 30

In (17a) the β occurrence of *himself* in the antecedent is matched by the β occurrence of *him* in the ellipsis site. Anaphor and pronoun are bound from different positions, which forces vehicle change to happen. In (17b) the situation is similar. Unlike in (17a), the anaphor in the antecedent and the pronoun in the ellipsis site are bound by the same DP (the main clause subject *Max*), a possibility that arises because the subject of the main clause c-commands into the temporal adjunct clause containing the ellipsis site. Finally, example (17c) contains what Fiengo and May analyze as an α occurrence of the anaphor. There is no binding from the first into the second conjunct and the pronoun in the ellipsis site is assumed to be referential. In all three examples, a sloppy reading would have resulted without vehicle change.

The next set of examples shows how vehicle change from anaphor to pronoun can result in dependent strict readings, as we already saw in (3a).

(18) a. Every man$^{\alpha}_{m}$ mentioned himself$^{\beta}_{m}$ before Mary did ~~mention him$^{\beta}_{m}$~~ Fiengo and May 1994, 209 ex. 40

b. Every boy$^{\beta}_{b}$ should praise himself$^{\beta}_{b}$ less often than his$^{\beta}_{b}$ mother does ~~praise him$^{\beta}_{b}$~~

c. Every boy$^{\alpha}_{b}$ praised himself$^{\beta}_{b}$ and every boy$^{\alpha}_{b}$'s mother did ~~praise {*himself | him$^{\beta}_{b}$}~~, too.

d. Every veteran$^{\alpha}_{v}$ believes himself$^{\beta}_{v}$ to be heroic and every veteran's therapist does ~~believe him$^{\beta}_{v}$ to be heroic~~, too.

e. Mary wants every veteran$^{\alpha}_{v}$ to sketch himself$^{\beta}_{v}$ but every veteran$^{\alpha}_{v}$ wants Mary to ~~sketch {*himself | him$^{\beta}_{v}$}~~.

The point to note about these examples is that in each case the elided VP is interpreted as though it contained a bound pronoun in place of the anaphor in the antecedent. In example (18a), anaphor and pronoun are bound by the same

quantifier in a way similar to what we saw in (17b). Example (18b) is similar except that the ellipsis site is inside of a comparative clause rather than a temporal adjunct. In (18c) the subject's possessor gives rise to the referential dependency but, of course, it would not be able to license the anaphor, which is in object position. Example (18d) is similar, except that the anaphor in the antecedent VP is an ECM subject. Finally, in (18e) the anaphor in the antecedent is in object position and the switch in the position of the binder is not from subject to possessor of subject but from ECM subject to matrix subject.

The relevant referentially dependent interpretations are available in all of these cases. This is as expected under Fiengo and May's assumptions. Their analysis would require the labelling indicated. The dependent strict reading for these examples is not supported by a structure with an anaphor in the ellipsis site, since that anaphor would invariable have to be bound to the local subject position (as in the antecedent), which would then result in the sloppy rather than the dependent strict reading.

R-expression $\models_{VC}$ pronoun

Having shown the availability of anaphor $\models_{VC}$ pronoun, we move on to R-expression $\models_{VC}$ pronoun. As in the previous section, the examples again fall in two classes. One class of examples involve referential antecedents and give rise to referential strict readings. The second class involves quantificational antecedents and gives rise to dependent strict readings. As we already noted in footnote 3, examples of the first kind are maybe not entirely convincing since they are open to reanalysis in terms of covaluation of contraindexed DPs. The second class of examples removes this analytical possibility.

(19) a. Fatimah arrested John$_{\mathrm{j}}^{\alpha}$, but because it was dark he$_{\mathrm{j}}^{\alpha}$ thinks that Sana did ~~arrest {*John$_{\mathrm{j}}^{\alpha}$ | him$_{\mathrm{j}}^{\alpha}$ | *him$_{\mathrm{j}}^{\beta}$}~~.

b. Mary introduced John$_{\mathrm{j}}^{\alpha}$ to everyone that he$_{\mathrm{j}}^{\{\alpha \mid \beta\}}$ wanted her to ~~introduce {*John$_{\mathrm{j}}^{\alpha}$ | him$_{\mathrm{j}}^{\alpha}$ | *him$_{\mathrm{j}}^{\beta}$} to~~. Fiengo and May 1994, 275 ex. 100a

c. Mary gave John$_{\mathrm{j}}^{\alpha}$ whatever John$_{\mathrm{j}}^{\alpha}$ wanted her to ~~give {*John$_{\mathrm{j}}^{\alpha}$ | him$_{\mathrm{j}}^{\alpha}$ | him$_{\mathrm{j}}^{\beta}$}~~.

d. John proposed to Mary$_{\mathrm{m}}^{\alpha}$, who t$_{\mathrm{m}}$ thought that Bill would have ~~proposed to {*Mary$_{\mathrm{m}}^{\alpha}$ | her$_{\mathrm{m}}^{\alpha}$ | *her$_{\mathrm{m}}^{\beta}$}~~ ages ago.Fiengo and May 1994, 282 121b

e. John proposed to Mary$_{\mathrm{m}}^{\alpha}$ before she$_{\mathrm{m}}^{\alpha}$ expected him to ~~propose to {*Mary$_{\mathrm{m}}^{\alpha}$ | her$_{\mathrm{m}}^{\alpha}$ | *her$_{\mathrm{m}}^{\beta}$}~~.

All of the above examples with a strict copy of the antecedent VP would violate condition C of the binding theory. They are possible under Fiengo and May's assumptions, with an α-indexed pronoun. The representations with the β-indexed pronoun are ruled out by the identity condition on the ellipsis of β-indexed DPs.

(An elided β-indexed DP needs a β-indexed antecedent and either be in a parallel dependency or have the same range as the antecedent DP.)

As noted, the condition C violation and hence the necessity for vehicle change can be removed by contraindexing the overt pronoun and the R-expression responsible for the condition C violation and assuming that coreference arises not by virtue of coindexing but by virtue of covaluation. This potential confound weakens the impact of all examples with referential strict interpretations.

The necessity of vehicle change can be demonstrated more clearly with examples that have a dependent strict interpretation, as seen above in :

(20) a. Max_{m} talked to $\text{everyone}_{\text{e}}$ who t_{e} wanted him_{m} to ~~talk to them$_{\text{e}}$~~.Fiengo and May 1994, 246 ex. 21

b. John kissed someone yesterday, but nobody_{n} would allow him to ~~kiss them$_{\text{n}}$~~ today. Fiengo and May 1994, 230 fn. 32 ex i

c. I met with every inmate_{i}, though most lifers_{l} said I hadn't ~~met with them$_{\text{l}}$~~. Merchant 2016, 8 ex. 47

d. A: John named a country which he wants to travel to t_{which}.
B: Given the amount of traveling he does, I'm sure that he will ~~travel to it~~. based on Fiengo and May 1994, 225 ex. 84

The most prominent interpretation of the above sentences is the one indicated. These interpretations are clearly distinct from interpretations derived by creating a more faithful copy of the DP in the antecedent:

(21) a. Max talked to everyone who wanted him to talk to everyone.

b. John kissed someone yesterday but nobody would allow him to kiss someone today.

c. I met with every inmate, though most lifers said I hadn't met with every inmate.

d. *Given the amount of traveling he does, I'm sure that he will travel to (which).

In other cases there are clear ambiguities between the more faithful reconstruction of the missing VP and the reconstruction involving vehicle change to a pronoun:

(22) a. John saw everyone before Bill did. Fiengo and May 1994, 226 91a
(i) John saw everyone before Bill saw them.
(ii) John saw everyone before Bill saw everyone.

b. John saw most people before Bill did.
(i) John saw most people before Bill saw them.
(ii) John saw most people before Bill saw most people.

Clearly, the vehicle change reading and the faithful reading are different here.

Equally clearly, the elliptical examples possess the vehicle change interpretations. This is possible because the quantificational DP in the antecedent (or its trace under QR) can be interpreted like a bound pronoun in the ellipsis site. Unlike in the examples in (19), this result cannot be derived using a faithful copy and contraindexing. The dependent strict reading requires binding and, therefore, coindexation. Given coindexation, the binding theory requires the binding theoretic class of the DP to be switched from R-expression to pronoun.

We have seen examples above that are analyzed as $\models_{VC}$ pronoun in Fiengo and May's system. Given that the binding-theoretic status of the DP antecedent didn't seem to matter for the acceptability of the elliptical examples so long as the conditions on the identity of indices are met, these examples are compatible with Fiengo and May's symmetrical theory of vehicle change. Indeed, these examples might suggest that ellipsis is recovered purely on the basis of the semantic content of the antecedent and that syntax has no role to play. The examples in the next subsection show otherwise.

3.2 *$\models_{VC}$ anaphor

In this subsection we investigate Fiengo and May's claim that anaphors can be created by vehicle change. As before, we split the discussion first by the nature of the antecedent (pronoun vs. R-expression) and then distinguish between referential strict and dependent strict readings. The discussion of examples that would require $\models_{VC}$ anaphor under a dependent strict reading is the empirical contribution of this article. The conclusion is that such examples are ungrammatical.

pronoun $\models_{VC}$ anaphor

Consider the following example:

(23) Max loves him even more than he does.

The example clearly shows a disjoint reference effect, typical of condition B. Indeed, the following representations are all blocked in Fiengo and May's system; the representation with the α-indexed pronoun in the ellipsis site contravenes the binding theory; the other two violate the identity conditions on the recoverability of indices, since they feature β-indexed DPs with an α-indexed antecedent.

(24) Max loves him_b^{α} even more than $\text{he}_b^{\{\alpha \mid \beta\}}$ does ~~love $\{*\text{him}_b^{\alpha} \mid *\text{him}_b^{\beta} \mid *\text{himself}_b^{\beta}\}$~~.

However, both of the following representations are technically allowed by Fiengo and May. The first features an α-indexed anaphor. α-indexed anaphors are slightly

odd creatures because they are referentially independent (qua alpha index) but obligatorily bound (qua anaphor). Fiengo and May allow α-indexed anaphors - but usually as a marked option with verb semantics and focus as facilitating or inhibiting factors (Fiengo and May, pp. 210–215, see also Safir 2004, p. 152 for discussion). The second representation features a covaluation reading. Again, this is a marked option, as the grammatical encoding of coreference via co-indexing is generally preferred over covaluation (see also Reinhart 2006 for discussion).

(25) a. Max loves him$^{\alpha}_{b}$ even more than he$^{\beta}_{b}$ does ~~love himself$^{\alpha}_{b}$~~.
b. Max loves him$^{\text{alpha}}_{b}$ even more than he$^{\alpha}_{c}$ does ~~love him$^{\alpha}_{b}$~~.
with $[\![\text{ b }]\!] = [\![\text{ c }]\!]$

The judgment that there is a clear disjoint reference effect in (24) is then arguably in line with expectations. The next examples are raised by Fiengo and May to show that if relevant conditions on verb semantics and focus are met, $\models_{VC}$ anaphor is possible. The examples reproduce the structures proposed by Fiengo and May:

(26) a. Barbara voted for him$^{\alpha}_{b}$, but Bush$^{\alpha}_{b}$ didn't ~~vote for {*him$^{\alpha}_{b}$ | *him$^{\beta}_{b}$ | *him$^{\alpha}_{c}$ | himself$^{\alpha}_{b}$}~~. Fiengo and May 1994, 213 ex. 47b
b. Who slashed the shogun$^{\alpha}_{s}$? – The samurai must have slashed him$^{\alpha}_{s}$. Clearly the shogun$^{\alpha}_{s}$ couldn't have ~~slashed {*him$^{\alpha\,|\,\beta}_{s}$ | himself$^{\alpha}_{s}$}~~.Fiengo and May, 214 ex. 50b

However, examples such as the above again have an alternative analysis in terms of covaluation, as already noted in Kitagawa 1991; Oku 1998:

(27) a. Barbara voted for him$^{\alpha}_{b}$, but Bush$^{\alpha}_{c}$ didn't ~~vote for him$^{\alpha}_{b}$~~
With $[\![b]\!]=[\![c]\!]$!
b. Who slashed the shogun$^{\alpha}_{s}$? – The samurai must have slashed him$^{\alpha}_{i}$. Clearly the shogun$^{\alpha}_{s}$ couldn't have ~~slashed {him$^{\alpha}_{i}$}~~.
With $[\![s]\!]=[\![i]\!]$!

Clearly, the fact that these examples are potentially ambiguous between a $\models_{VC}$ anaphor and a covaluation reading weakens the argument for the existence of $\models_{VC}$ anaphor that Fiengo and May build on them. The next set of examples controls this interfering factor by moving from independent strict to dependent strict readings. Dependent strict readings require a referential dependency and can therefore not be adequately represented by contraindexing (with covaluatio). Such examples, if grammatical, would provide strong evidence for $\models_{VC}$ anaphor. But it turns out that they are not grammatical, as already hinted at by (3b):

(28) Every veteran wants Mary to sketch him, but Mary wants every veteran to.

The example is minimally paired with (18e) above, which demonstrated the possibility of anaphor $\models_{VC}$ pronoun under a dependent strict reading. Unsurprisingly, (28) is acceptable on a referential strict reading, under which *him* refers to some third referent. Crucially, however, it is unacceptable on the dependent strict reading, a reading under which *him* is bound by *every veteran*. The absence of this reading is not predicted by Fiengo and May. Consider why. Fiengo and May's system allows the following representation of the unavailable interpretation in which the β-indexed pronoun crucially antecedes the β-indexed – and thereby unremarkable! – anaphor. The binding dependencies are structurally different, of course, but this shouldn't matter since the quantifiers in both sentences are the same and thus determine the same range for the variable.

(29) Every veteran$^{\alpha}_{\text{v}}$ wants Mary to sketch him$^{\beta}_{\text{v}}$, but Mary wants every veteran$^{\alpha}_{\text{v}}$ to ~~sketch himself~~$^{\beta}_{\text{v}}$.

The same conspicuous lack of a dependent strict reading reliant on pronoun $\models_{VC}$ anaphor can also be observed in (30a), minimally paired with (18b). The inaccessible dependent strict reading has the representation in (30b), which crucially involves pronoun $\models_{VC}$ anaphor. [8] Similarly for (32)

(30) a. Every boy's mother should praise him more often than he does.
b. Every boy$^{\alpha}_{\text{b}}$'s mother should praise him$^{\beta}_{\text{b}}$ more often than he$^{\beta}_{\text{b}}$ does ~~praise himself~~$^{\beta}_{\text{b}}$.

(31) a. Every boy$_{\text{b}}$ praised himself$_{\text{b}}$ and every boy$_{\text{b}}$'s mother did ~~praise him~~$_{\text{b}}$, too.

[8] Chris Collins (p.c.) informs me that – unlike other speakers that I have consulted – he accepts examples like (i) on a dependent strict reading with the quantifier binding both overt instances of the third singular pronoun. On the face of it, this looks like a counterexample to the claim that $\models_{VC}$ anaphor is impossible.

(i) Every boy$_{\text{b}}$'s mother praised him$_{\text{b}}$ before he$_{\text{b}}$ did.

However, for Collins we are not forced to assume $\models_{VC}$ anaphor in this example, since he also accepts (ii) on the relevant reading where all three instances of the third singular pronoun are bound by the quantifier.

(ii) Every boy$_{\text{b}}$'s mother should praise him$_{\text{b}}$ before he$_{\text{b}}$ praises him$_{\text{b}}$.

Indeed, the fact that Collins agrees with the judgments reported above about pairs like (28) versus (18e) demonstrates that he does not allow $\models_{VC}$ anaphor.

This leaves (ii) as a problematic case of a pronoun satisfying the binding theory by skipping a potential binder. In other formulations of the binding theory a violation should be present due to the presence of reflexive predicate that is not reflexive marked. I have nothing to say about the problems for binding theory raised by Collins's judgments but note that they do not threaten the generalization that $\models_{VC}$ anaphor is impossible.

b. *Every boy$_{\text{b}}$'s mother praised him$_{\text{b}}$ and every boy$_{\text{b}}$ did ~~praise himself~~ ~~$_{\text{b}}$~~, too.

The same point is made by the following two sets of examples. The examples reverse the material in the main clause and the temporal adjunct and then apply ellipsis to the VP in the temporal adjunct. When the antecedent contains a pronoun, elision of the VP with the anaphor is impossible (the a.-examples). On the other hand when the antecedent contains the anaphor and the ellipsis site the corresponding pronoun, elision is possible.

(32) a. *Every boy's mother glued Sally to him before he could ~~glue Sally to himself~~.
b. Every boy glued Sally to himself before his mother could ~~glue Sally to him~~.

(33) a. *Every boy's mother got glued to him before he did ~~get glued to himself~~.
b. Every boy got glued to himself before his mother did ~~get glued to him~~.

The above examples together with their minimal pairs referenced suggest that anaphor $\models_{VC}$ pronoun is available in the derivation of dependent strict readings but that pronoun $\models_{VC}$ anaphor is not. A further way of showing this is by juxtaposing nearly minimally paired examples with referential strict readings with those with dependent strict readings. Relevant examples can be expected to allow the referential strict reading (via the covaluation route) but dependent strict readings should not be possible.

I will take as my starting point an example from Aoun and Nunes 2008, which received a certain amount of attention in the literature on vehicle change. The first example shows that a bound pronoun is not possible within the object DP, presumably because of binding condition B. The second example then shows that the referential strict reading is available under VP ellipsis:

(34) Aoun and Nunes 2008, 529 ex. 14b, 12b
a. *$\{\text{John}_{\text{j}}^{\alpha} \mid \text{He}_{\text{j}}^{\alpha}\}$ never tells stories about $\text{him}_{\text{j}}^{\alpha \mid \beta}$.
b. Mary always tells [stories about $\text{John}_{\text{j}}^{\alpha}]_{\text{s}}^{\alpha}$ but $\text{he}_{\text{j}}^{\alpha}$ never does.

The example as given by Aoun and Nunes 2008 under the strict reading has three a priori plausible analyses: the covaluation analysis, (35a), the R-expression (*stories about him*) $\models_{VC}$ pronoun (*them*) analysis in (35b) (see Aoun and Nunes 2008; Oku 1998), and the pronoun $\models_{VC}$ anaphor analysis in (35c).

(35) a. …he$_{\text{J}}$ never does ~~tell stories about him$_{\text{j}}$~~
with $[\![\text{j}]\!]=[\![\text{J}]\!]$
b. …he$_{\text{j}}$ never does ~~tell them$_{\text{s}}$~~

c. …he$_{\mathrm{j}}^{\alpha}$ never does ~~tell stories about himself$_{\mathrm{j}}^{\alpha}$~~

We can now construct examples much like (34b) where the subject matter of the stories is represented by a bound pronoun and a bound anaphor:

(36) a. Every child prodigy$_{\mathrm{p}}$ tells stories about himself$_{\mathrm{p}}$ and likes it if his$_{\mathrm{p}}$ friends do ~~tell stories about him$_{\mathrm{p}}$~~, too.

b. *Every child prodigy$_{\mathrm{p}}$ likes it if his$_{\mathrm{p}}$ friends tell stories about him$_{\mathrm{p}}$ and does, too.

When the anaphor antecedes the pronoun, (36a), the dependent strict reading relies on anaphor $\models_{VC}$ pronoun and is available. However, when the pronoun antecedes the anaphor, (36b), the dependent strict reading relies on pronoun $\models_{VC}$ anaphor and is not available.

A final illustration of the absence of pronoun $\models_{VC}$ anaphor is given in the following example. As indicated, the final sentence of the example has a referentially independent covaluation reading for the object of *praise* but lacks the referentially dependent reading:

(37) John$_{\mathrm{j}}$'s mother didn't praise him$_{\mathrm{j}}$. He$_{\mathrm{j}}$ did. And he was the only one who did.

= And he was the only x s.t. x praised John

≠ And he was the only x s.t. x praised x

The available interpretation can be represented as (38a). (38a) does not require any kind of vehicle change but it does require covaluation. Fiengo and May also predict the unavailable dependent strict reading to be available with the representation in (38b). This representation crucially involves pronoun $\models_{VC}$ anaphor. The absence of this interpretation can be derived if we assume that pronoun $\models_{VC}$ anaphor is not available.

(38) a. John$_{\mathrm{j}}^{\alpha}$'s mother didn't praise him$_{\mathrm{j}}^{\alpha}$. He$_{\mathrm{j}}^{\alpha}$ did ~~praise him$_{\mathrm{j}}^{\alpha}$~~. And he$_{\mathrm{j}}^{\alpha}$ was the only one who did ~~praise him$_{\mathrm{j}}^{\alpha}$~~.
with $[\![\mathrm{j}]\!] = [\![\mathrm{J}]\!]$

b. John$_{\mathrm{j}}^{\alpha}$'s mother didn't praise him$_{\mathrm{j}}^{\beta}$. He$_{\mathrm{j}}^{\alpha}$ did ~~praise himself$_{\mathrm{j}}^{\beta}$~~. And he$_{\mathrm{j}}^{\alpha}$ was the only one who did ~~praise himself$_{\mathrm{j}}^{\beta}$~~.

Overall, there is strong evidence that referential strict readings avoid potential condition B violations not by pronoun $\models_{VC}$ anaphor but by covaluation. Dependent strict readings cannot rely on covaluation but would have to involve pronoun $\models_{VC}$ anaphor. The dependent strict readings in question seem to be systematically absent pointing to the absence of pronoun $\models_{VC}$ anaphor.

R-expression $\models_{VC}$ anaphor

We now investigate cases of R-expression $\models_{VC}$ anaphor. As before, we begin with referential strict readings and then move on to dependent strict readings. As above, referential strict readings are sometimes available but dependent strict readings are not. The referential strict readings have two potential analyses, a covaluation and a $\models_{VC}$ anaphor analysis. The examples with dependent strict interpretations would unambiguously require the R-expression $\models_{VC}$ anaphor analysis. In other words, in just those cases in which R-expression $\models_{VC}$ anaphor is clearly and unambiguously required, the readings in question are not available. I conclude that R-expressions cannot vehicle change to anaphors.

Fiengo and May give the following examples to demonstrate that R-expressions $\models_{VC}$ anaphor is possible.

(39) a. Luther Martin defended Burr_b against the accusations better than he_b could have ~~defended himself~~. Fiengo and May 1994, 213 ex. 46b
b. I disliked hearing Yeats_y read in an English accent, and he_y did ~~disliked himself read in an English accent~~, too. Fiengo and May 1994, 224 ex. 79b
c. Barbara voted for Bush_b and he did ~~vote for himself$_\text{b}$~~, too.
d. Who slashed the shogun? – The samurai must have slashed the shogun. Clearly, the shogun_s couldn't have ~~slashed himself$_\text{s}$~~.

As noted in the introductory paragraph, these examples have an alternative analysis in terms of covaluation. The logic is the same as in the previous subsection and I will therefore skip the details.

Once covaluation is excluded as an analytical option, as in (4b) above, we see that R-expression $\models_{VC}$ anaphor is impossible. As before, we exclude covaluation by checking for dependent strict readings:

(40) *Mary sketched every boy and now she wants every boy to ~~sketch himself~~

(41) a. *Max talked to $\text{everyone}^\alpha_\text{e}$ who wanted to ~~talk to himself$^\alpha_\text{e}$~~.
b. *Max voted for $\text{everyone}^\alpha_\text{e}$ who did (~~vote for himself$^\alpha_\text{e}$~~
c. *Max looked for every $\text{alien}^\alpha_\text{a}$ who did ~~look for himself$^\alpha_\text{a}$~~
d. *Bush voted for every $\text{senator}^\alpha_\text{s}$ who did ~~vote for himself$^\alpha_\text{s}$~~.

(42) *Max spotted every boy_b in the mirror before he_b did ~~spot himself in the mirror~~.

As far as I can tell, 1994 expect such examples to be acceptable. They would involve R-expression $\models_{VC}$ anaphor. The resulting anaphors in the examples would be α-occurrences because the R-expressions are α-indexed. However, we have seen that Fiengo and May invoke α-occurrences of anaphors to account for the (mildly

degraded) referential strict readings earlier in this subsection. This creates the expectation that the above should be acceptable or at worst mildly degraded. They are not.

As a final illustration, recall example (34b) above, which has received some attention in the literature. Drummond and Shimoyama 2014, ex. 20b discuss the following variant of the example. If vehicle change from the lower copy of the relative operator (or *which boy* as the head of the relative clause) to an anaphor were available, (43a) should have the interpretation in (43b). This is so because the trace of the relative operator (lower copy) counts as an R-expression under Fiengo and May's assumptions. The expectation is not borne out, showing again that R-expressions do not vehicle change to anaphors.[9]

(43) a. *Which boy_b that Mary is expected to tell stories about t_OP t_wh claimed that he_b will, too?
b. Which boy_b that Mary is expected to tell stories about t_OP t_wh claimed that he_b will tell stories about himself_b, too?

This section has shown that $\models_{VC}$ anaphor is impossible. It appears to be possible only in referential strict readings, that is, in examples in which covaluation and $\models_{VC}$ anaphor are indistinguishable. We can summarize the situation in the following updated table:

(44) Vehicle change from and into binding theoretically defined DP classes

VC		(referential) strict	dependent strict
anaphor	$\models_{VC}$ pronoun	yes	yes
R-expression	$\models_{VC}$ pronoun	yes	yes
pronoun	$\models_{VC}$ anaphor	* (reading via covaluation)	*
R-expression	$\models_{VC}$ anaphor	* (reading via covaluation)	*
pronoun	$\models_{VC}$ R-expression	irrelevant (see fn 6)	
anaphor	$\models_{VC}$ R-expression	irrelevant (see fn 6)	

The next section is devoted to deriving the generalization that vehicle change is the retreat to the pronominal form from strucutral recoverability.

[9]Drummond and Shimoyama's own analysis predicts, wrongly, that the following variants of the example should be acceptable (because the ellipsis site is within an island):

(i) a. *Which boy_b OP that Mary is expected to tell stories about t_RelOP t_wh made the claim that he_b will, too?
b. *Which boy_b OP that Mary is expected to tell stories about t_RelOP t_wh announced the time when he_b will, too?

4 The structure of pronouns and the derivation of vehicle change

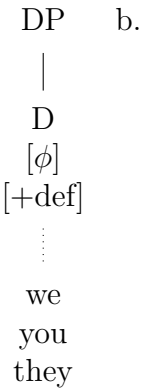
The previous section has shown that vehicle change is the retreat to the pronominal form. This section shows how to derive this generalization from recoverability. The idea is simple: Pronouns contain a subset of the information, features, and structure of (SELF-)anaphors and R-expressions. Deletion must be recoverable. Under structural recoverability (see end of section 1), SELF-anaphors and R-expressions can therefore antecede pronouns but not the other way around.

The next paragraphs draw on a long tradition in the analysis of pronouns as intransitive determiners and make the view plausible that (SELF-)anaphors and R-expressions contain pronouns. The remainder of this section then discusses possible and impossible vehicle change patterns in relation to these structural assumptions and structural recoverability.

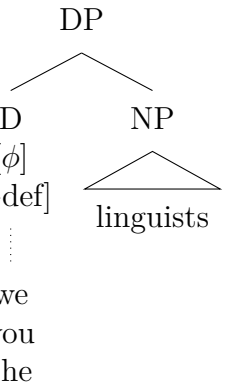
The idea that pronouns are structurally contained in definite DPs goes back to Postal's (1966) analysis of pronouns as determiners. Postal used observations about the distribution of pronouns and (definite) determiners in examples like (45) to argue that pronouns are definite determiners without an NP projection in structures roughly like (46).

(45)
{we | we linguists } are an unruly bunch
{you | you linguists } are an unruly bunch
{they | the linguists } are an unruly bunch
*{the | they linguists} are an unruly bunch

(46) a.



b.



On this type of view, it is a (superficial) morphological property of first and second person plural determiners that they spell out the same way (in English) whether or not they are accompanied an NP while third person Ds have distinct transitive and intransitive forms.

Postal observes that the morphological affinity between pronouns and articles

is not limited to English (articles and clitics in many Romance languages as well as articles and d-pronouns in German come to mind). A particularly striking example of such *personal determiners* (see Lyons 1999, section 3.4.3 for this terminology) comes from the proprial article used with proper names in many Northern Germanic Varieties (see Delsing, 2003; Johannessen and Garbacz, 2014; Julien, 2005; Muñoz, 2019; Sigurðsson, 2006 and references cited there for discussion). The proprial article in the examples below is identical to the (weak) third person singular pronoun:[10]

(47) Solør Norwegian — Julien 2005, 174-5 ex. 5.71–2

a. (i) *(A) (vesle) Lina jorde de.
she little Lina did it
(Little) Lina did it.

(ii) … å a jorde de.
and she did it
…and she did it.

b. (i) Je såg itte *(a) [(][11]vesle[)] Lina
I saw not she little Lina
I didn't see (little) Lina

(ii) Je såg a itte.
I saw her not
I didn't see her.

On the assumption that the shared morphology is a reliable guide to shared structure and featural content and on the assumption that the structure is crosslinguistically uniform, such data indicate that DPs expressing proper names in English contain a D-head (spelled out as a null morpheme or as part of the proper name) with the features of a pronoun.

Since the idea that pronouns are DPs and express a substructure of (definite) DPs is widely held (see Abney 1987; Cardinaletti 1994; Cardinaletti and Starke 1999; Déchaine and Wiltschko 2002; Elbourne 2005; Johnson 2013; Julien 2005; Lyons 1999; Oku 1998; Postal 1966; Sommerstein 1972), I assume it here without further discussion. While not all implementations share the specific categorization of elements assumed here or the particular geometry, all of them converge on what is crucial for structural recoverability: pronouns are featurally and/or structurally a subset of definite DPs.

[10]The pronominal demonstrative (Johannessen 2008; Julien 2005) could also have been cited here. In the Solør dialect, the pronominal demonstrative takes the form of the strong pronoun (Julien 2005, 124 fn 12).

[11]The parentheses around *vesle* are missing in the original example but they are entailed by the original's parentheses in the translation and the discussion in the text.

This logic gives an immediate and obvious account of vehicle change from definite R-expressions and proper names to pronouns (referential strict readings requiring R-expression $\models_{VC}$ pronoun): the structure of the R-expression in (46) can antecede the pronoun under structural recoverability but not the other way around. Vehicle change with indefinite and quantificational antecedents will be discussed later in this section.[12]

We now turn to anaphors. The morphology of English anaphors strongly suggests that they are built up structurally and featurally under the inclusion of a pronoun. Indeed, this is a crosslinguistically common option (see Faltz 1977; Schladt 2000). Jayaseelan 1996 suggests that it is not just common but that all anaphors either contain pronouns or are pronouns. In the same vein, Middleton 2020 finds that in her typological sample, anaphors often contain pronouns in a morphologically transparent way. The opposite is never the case: there are no languages where pronouns transparently contain anaphors. (In the remaining languages in Middleton's sample the morphological relation is either intransparent or anaphors and pronouns have the same form.[13]) Middleton takes this morphological asym-

[12]At this point the question arises how structural recoverability is compatible with (apparent) *changes* in ϕ-features between antecedent and ellipsis site:

(i) a. $\{\text{Magda} \mid \text{She}\}^{\alpha}_{\text{m}}$ thinks $\text{she}^{\beta}_{\text{m}}$ should participate in the lottery and $\text{we}^{\alpha}_{\text{w}}$ do ~~think that $\text{we}^{\beta}_{\text{w}}$ should participate in the lottery~~, too.

b. $\text{We}^{\alpha}_{\text{w}}$ think $\text{we}^{\beta}_{\text{w}}$ should participate in the lottery and $\{\text{Magda} \mid \text{she}\}^{\alpha}_{\text{m}}$ does ~~think that $\text{she}^{\beta}_{\text{m}}$ should participate in the lottery~~, too.

It follows from structural recoverability (see also Oku 1998) that the actual representation of the subject DP in the ellipsis site must not contain any features not present in the antecedent. Given the mismatches seen in (ia) and (ib), there cannot be any person, number, or gender features on the pronoun in the ellipsis site in (i). In other words, *we* and *she* in the ellipsis site should actually be represented as $[_{\text{D}}$ [+def]] without person, number, and gender markings. English does not have a relevant pronoun in its morphological inventory, which might lead to the incorrect expectation that examples like (i) are ungrammatical; this is less of a problem than might appear at first, since ellipsis, for principled reasons, repairs morphological gaps (see Abels 2019, pp. 1249–50 for discussion): the fact that the ellipsis sites in (i) contain pronominal determiners that could not be pronounced in English goes unnoticed by the grammatical system, because these determiners are never submitted to morphological insertion.

For discussion of some asymmetries in this area see Johnson 2013; Kitagawa 1991; Oku 1998. Pronouns that are c-commanded by their antecedent might be able to mismatch in features under ellipsis more easily than pronouns that are referentially dependent on a non-commanding DP (Richard Kayne, p.c. and Johnson 2013). This can be understood if pronouns can acquire their ϕ-features through agreement under c-command and if agreement relations into the ellipsis site are treated on a par with movement chains into the ellipsis site in not falling under the purview of structural recoverability.

[13]The languages showing form identity between pronouns and anaphors in Middleton's sample are largely Malayo-Polynesian. Reuland 2011, citing Moyse-Faurie 2008 suggests that these attestations in Malayo-Polynesian languages might be spurious. In Middleton's sample there are

metry to point towards a syntactic linguistic universal: reflexive anaphors always properly contain the structure and features of a pronoun. This inclusion relation holds, according to her, at the level of the syntax but can be obscured by the morphology: in languages that use the same pronominal form for local anaphors and pronouns, there is a syncretic form spelling out the (smaller) pronominal structure and the (larger) anaphoric structure; languages in which there is no transparent morphological relation between pronouns and anaphors are treated in terms of suppletion.[14] The predictions that structural recoverability makes about vehicle change for languages in which anaphors contain pronouns transparently in the morphology are quite obvious; these languages all have in common that the pronoun is properly contained in the reflexive in some way, as shown below for Faltz head reflexive with possessive and the adjunct reflexive types:[15]

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also four non-Malayo-Polynesian languages of this type: Bislama, Georgian, Kinywarwande, and Telugu. Bislama is an English-based creole heavily influenced by its Oceanic substrate and likely behaves much like the Malayo-Polynesian languages in the sample. The Georgian data reported by Middleton are dubious (see Amiridze 2006 for in depth discussion of Georgian reflexives and pronouns). Middleton misanalyzes the Kinyarwanda data (see Kimenyi 1980, section 4.2.1 for an outline of the grammar of reflexives in the language). The Telugu data, too, seem to be misanalyzed (see Bhaskararao 2006; Krishnamurti and Gwynn 1986; Subbarao and Murthy 2000 for relevant discussion). We do not need to resolve the question here whether there truly are languages where reflexives are not marked.

[14]Middleton 2020 takes a restrictive view of what counts as a pronoun. In Fiengo and May 1994's terms, only α-occurrences of pronouns are classified as pronouns in the strict sense by Middleton. β-occurrences of pronouns are (roughly) classified as 'diaphors' by Middleton. Middleton suggests that diaphors structurally and morphologically occupy a point in between pronouns and anaphors (see 15). In languages that have them, logophoric pronouns and long-distance reflexives are morphologically distinct examples of diaphors. In English pronouns and diaphors are realized by a syncretic form.

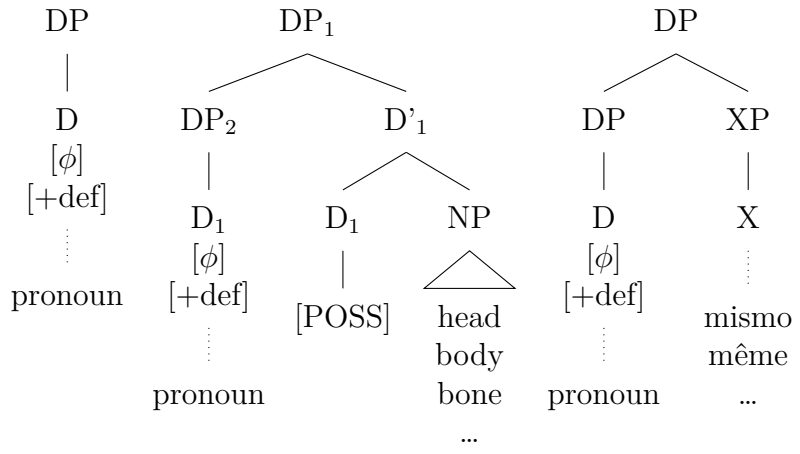
It should be obvious that under Middleton's approach, structural recoverability will license vehicle change from anaphors to (i) diaphors and (ii) pronouns and from diaphors to (iii) pronouns – but not the other way around. Case (i) corresponds to the dependent strict readings of anaphor $\models_{VC}$ pronoun, case (ii) to referential strict readings of anaphor $\models_{VC}$ pronoun, and case (iii) to the shift from sloppy to strict readings in sentences like the following variant of the classic Dahl's many clauses puzzle:

(i) John$_j$ thinks he$_j$ should participate in the race, Bill$_b$ does ~~think he$_b$ should participate in the race~~, too, but the coach doesn't ~~think he$_b$ should participate in the race~~.

Clearly, the predictions of Middleton's system with respect to vehicle change should be tested carefully in languages that occupy different places in the morphological typology. See also footnote 16

[15]In Middleton's approach this is altogether simpler, since she assumes that the syntactic structure of pronouns, diaphors, and anaphors is universally as follows (see Middleton 2020 for a proposal concerning the featural content of the three heads):

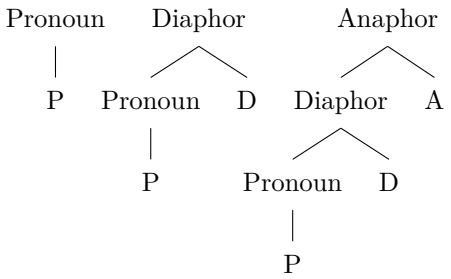
(48)



It should be obvious how structural recoverability licenses vehicle change from the anaphor to the pronoun but not the other way around if these structures are assumed.

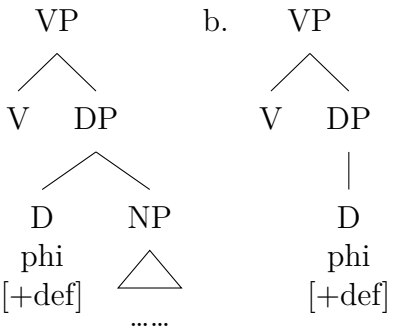
It is much less clear what the predictions are for languages with SE anaphors (or with SE+SELF) anaphors. Reuland 2011 develops a theory according to which SE-anaphors are even more minimal than pronouns, because they are underspecified in their ϕ-feature content relative to pronouns. This does not mean, however, that Reuland's theory predicts the direction of vehicle change between pronouns and anaphors to reverse in languages with SE anaphors. The reason for this comes from the principle that anaphors can appear only in reflexive-marked predicates and reflexive marked predicates must be semantically reflexive. A predicate with a pronominal antecedent can therefore not antecede the ellipsis of an unaltered predicate with a SE anaphor replacing the pronoun, because the elided predicate would not be reflexive marked – and couldn't be so marked under structural recoverability. The prohibition against vehicle change to anpahors can therefore also be derived in systems with SE anaphors under Reuland's assumptions.[16]

(i)



[16]It is much more difficult to figure out what exactly is predicted about vehicle change from anaphors to pronouns in systems with SE anaphors. Anaphor $\models_{VC}$ pronoun would remove the reflexive marking (leaving behind an underspecified pronoun in the ellipsis site, see footnote 12 above). We might expect this to be possible.

The account of vehicle change from R-expression to pronoun and anaphor to pronoun is now straightforward. For VP ellipsis, we would need to consider structures like the following:

(49) a. 

b.

It should be obvious that (49a) is strictly richer in information than (49b). Therefore, (49a) can antecede (49b) under structural recoverability but not the other way around.

We are left with the case of quantificational antecedents. The problem here is that the quantificational determiner is not obviously a superset or subset of the features that make up a pronoun. In particular, I have assumed that bound variable pronouns are characterized by the feature [+def], but it is easy to come up with examples in which quantifiers that are not usually thought of as definite, for example because they can appear in *there*-expletive constructions, undergo vehicle change to a pronoun:

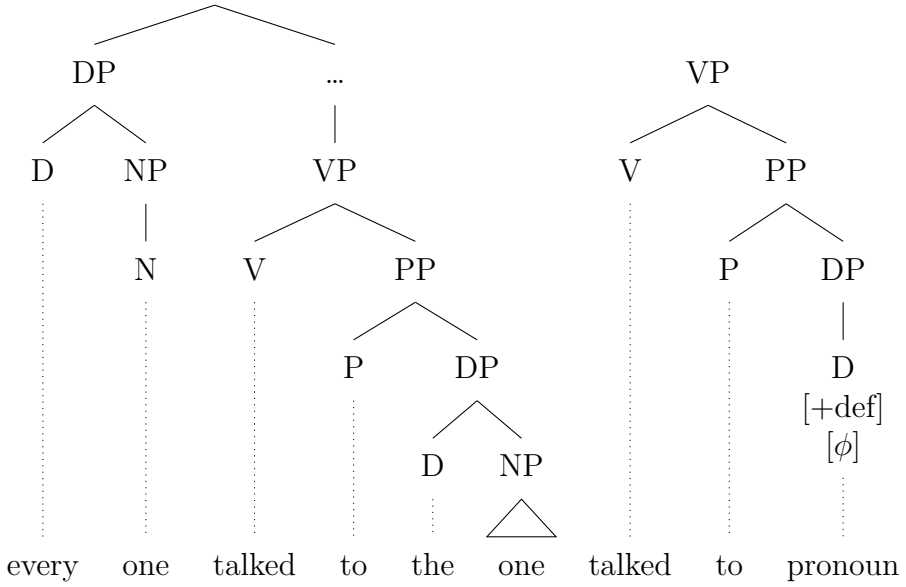
(50) a. Max talked to {many people | nobody} who wanted him to.
b. John saw {many people | nobody} before Bill did.

But if *many people* and *nobody* lack a [+def] feature and that feature is constitutive for a bound pronoun, then neither expression can antecede a pronoun without violating structural recoverability. I will here invoke the idea that quantifiers are scoped by a syntactic movement operation of quantifier raising and the additional assumption that the lower copy of quantifier raising is converted into a definite description by the further process of trace conversion (see Fox 2003).

This prediction is not obviously true. The data reported in Sells, Zaenen, and Zec 1987, pp. 182–184 suggests that the Dutch SE+SELF anaphor can vehicle change to the pronoun but that the (lexically licensed) pure SE anaphor cannot. This would make sense if the lexical licensing of reflexivity is represented syntactically not as an additional feature or head of the predicate but as a feature or head that replaces an otherwise necessary feature or head (see Ahn 2015 for relevant ideas). See also Oku 1998, p. 135, Noguchi 2018 for further challenging cross-linguistic data. I am not aware of a systematic study of which types of reflexives do and which types do not allow referential strict and dependent strict readings, but the issue deserves systematic study.

Trace conversion crucially replaces the determiner quantifier on the lower copy of a moved constituent by the definite determiner *the*. The whole DP is then interpreted as a bound variable whose range is restricted by the original NP sister of D.[17][18]

(51)



This concludes the account of the vehicle change asymmetry under structural recoverability. The next section concludes with a summary and some remarks on the difficulty of capturing the asymmetry under a non-structural approach to ellipsis resolution.

[17]Johnson 2012 offers a more elegant but less standard way of arriving at the conclusion that quantified DPs are structurally and featurally supersets of pronouns. Alas, introducing Johnson's assumptions would lead to far afield here.

[18]Recall that Fiengo and May observed that there are two ways of computing parallelism of antecedence: either the dependencies into the antecedent and into the ellipsis site have to be sufficiently similar structurally; failing that, the dependencies may be structurally different but in that case the range of the index in the ellipsis site must be the same (or a subset) of the range of the index in the antecedent. If the NP restriction could not be deleted just in case the dependency is structurally different, then this generalization could be derived. I will not pursue this idea here for two reasons. First, it is not clear what it might follow from. Second, since the DP in the ellipsis site is then structurally indistinguishable from an R-expression, we lose the account of why DPs in the ellipsis site behave as pronouns for the binding theory rather than as R-expressions.

5 Consluions

We have seen that vehicle change represents the retreat from an anaphor or and R-expression to a pronominal form. No other type of vehicle change is possible. Given the independently motivated claims that pronouns are structurally and/or featurally subsets of (SELF-)anaphors and R-expressions, we can derive both the existence of vehicle change and the constraints on it from the idea that ellipsis is constrained by structural recoverability. Structural recoverability is the idea is that the E-site may contain less material than the antecedent but not more (unless, like copies in movement chains, it is independently recoverable) and that all material must be arranged in the same (relative) way in the antecedent and the E-site.

We can now consider the wider implications of our findings. Recall that 1994 had claimed that vehicle change is symmetric in the sense that a DP in any of the three binding theoretic classes can vehicle change into a DP in either of the other two classes within the ellipsis site. In other words, there are no effects of the binding theory in the ellipsis site. (The only constraints that we find are constraints on the identity of indexical dependencies between DPs in the antecedent and in the ellipsis site.) This complete neutralization of the syntactic part of the binding theory in the ellipsis site is easily compatible with an account of ellipsis, where recoverability is semantic (and there may or may not be structure at the ellipsis site). However, in the preceding sections we have seen that the binding theory is not completely neutralized; we do observe Condition B effects in the sense that a nonanaphoric DP in the antecedent cannot behave as a locally bound anaphor in the ellipsis site. 1994's data obscure this generalization, because they investigate only examples that are compatible with referentially independent occurrences of the relevant DPs and omit discussion of referentially dependent occurrences. The difficulty consists in account for pairs like (3), which showed that a reflexive predicate with a dependent anaphor can antecede the ellipsis of a nonreflexive predicate with a dependent pronoun but not the other way around. A nonstructural account will need a semantic account of the asymmetry and an asymmetric account of recoverability but it remains unclear what that might be.

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