LCA+alignment=RNR

Workshop on Coordination, Subordination and Ellipsis
University of Tübingen
June 2007

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Right Node Raising obeys a constraint that makes reference to strings, rather than structure. That constraint requires that the material which right node raises is string-final in both of the phrases that it has right node raised from.

(1) The Right Edge Effect
Let α be shared by β and γ through Right Node Raising, and let β precede γ. The right edge of α must align with the right edge of γ, and be able to align with the right edge of β.

The contrasts in (2) and (3) illustrate.[1]

(2) a. * Mary talked to about Jim and Sally talked to Paul about, Marilyn Manson.
b. * Mary talked to about Jim and Sally talked about to Paul, Marilyn Manson.
c. Mary talked about Jim to and Sally talked to Paul about, Marilyn Manson.

(3) a. * Sally mailed to Bill and Mary faxed the contract to Sam.
b. Sally mailed to Bill and Mary faxed to Sam, the contract.

This is an effect that belongs to the process that maps the hierarchical groupings of syntactic representations onto strings. The process that produces Right Node Raising, then, should engage that process in such a way that the Right Edge Effect emerges. I will assume that the relevant process is the one that linearizes the terminals in a phrase marker. There have been a series of recent proposals that attempt to explicate how Right Node Raising interacts with linearization to produce the Right Edge Effect, and this will be another. Sabbagh (forthcoming) gives a movement account of Right Node Raising, and tries to show how movement and the linearization scheme interact to produce the Right Edge Effect. Wilder (forthcoming), Bachrach and Katzir (2006) and Frampton (2006) conceive of phrase markers that allow multidominance — the ability for one node to have more than one mother — and try to formulate a linearization scheme that gives Right Node Raising as a consequence of multidominance. Fox and Pesetsky (2006) combines the two ideas. What I will propose comes closest, perhaps, to Fox and Pesetsky (2006). At its heart is the idea of multidominance, and so it does not offer a new attack on the problem.

My method, though, will differ a little from my predecessors. I will begin by examining the linearization scheme in a general way and try to locate the properties that such a scheme should have. I will argue that whether multidominance is permitted or not depends on the linearization scheme. Once we have a linearization scheme of the sort that has the properties I argue it should have, it will license multidominance as a result. I will then examine how close it gets to capturing the properties of Right Node Raising, including the Right Edge Effect. It gets very close. By contrast, the other proposals that make use of multidominance have assumed that multidominance is permitted and designed linearization schemes that produce Right Node Raising in cases where it arises. Our results differ.

I'll start, then, with an examination of the linearization scheme.

[1] It is possible to get apparent violations of the Right Edge Effect with certain intonational phrasing. (i) is acceptable, for instance, if *on Tuesday* is set off as an independent intonational phrase.

(i) Mary baked on Tuesday and Sally ate on Wednesday, her trademark cookies.

I don't know what's going on in these cases.

1 $\overline{\text{X}}$ Theory and Linearization

My starting place will be with the conception of phrase markers in Chomsky (1995). The premise in that work is that the constraints on phrase markers — the $\overline{\text{X}}$ Theory — should be sought in the interaction between a primitive structure building operation and the rest of the system. Let's follow Chomsky and take that structure building operation to be MERGE.

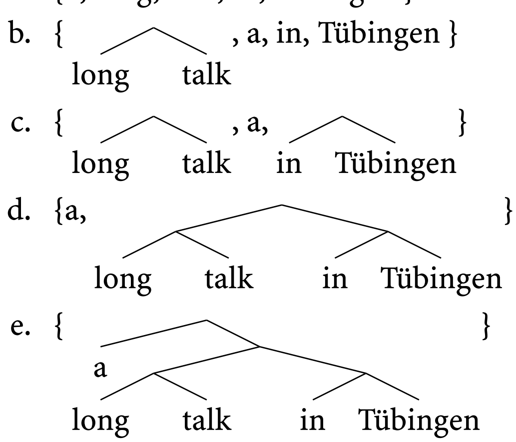
(4) MERGE(a)(b) $=_{\text{def.}}$ { a, b }.

The "{ }" enclose sisters. Syntactic derivations can then be defined as starting with a collection of terminals and repetitively applying MERGE until a single phrase marker is constructed from them. To construct *a long talk in Tübingen*, for instance, could involve the steps in (5).

(5) a long talk in Tübingen
- a. {a, long, talk, in, Tübingen}
- b. { {long, talk}, a, in, Tübingen}
- c. { {long, talk}, a, {in, Tübingen}}
- d. {a, {{long, talk}, {in, Tübingen}}}
- e. {{a, {{long, talk}, {in, Tübingen}}}}

I can't read these representations, and so I will adopt the conventional expedient of expressing sisterhood with trees. The derivation in (5) could be alternatively rendered with (6).

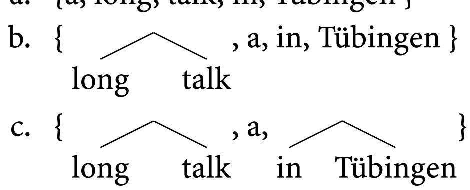
(6) a. {a, long, talk, in, Tübingen }

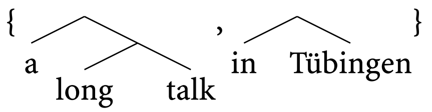


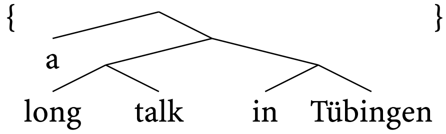
Trees introduce a confound that is important for this paper, however. They impose a linearization on the hierarchical representation that is not provided by MERGE. Understand every tree in this paper to be free of linear order. So understand (6e), for instance, to be consistent with absolutely any linear order of its terminals.

A special case of MERGE that will be of interest to us arises when one of the arguments of MERGE is part of the output of MERGE. This special case is known as "late merge." Another derivation leading to (6e), but involving late merge, is (7).

(7) a. {a, long, talk, in, Tübingen }



d. 

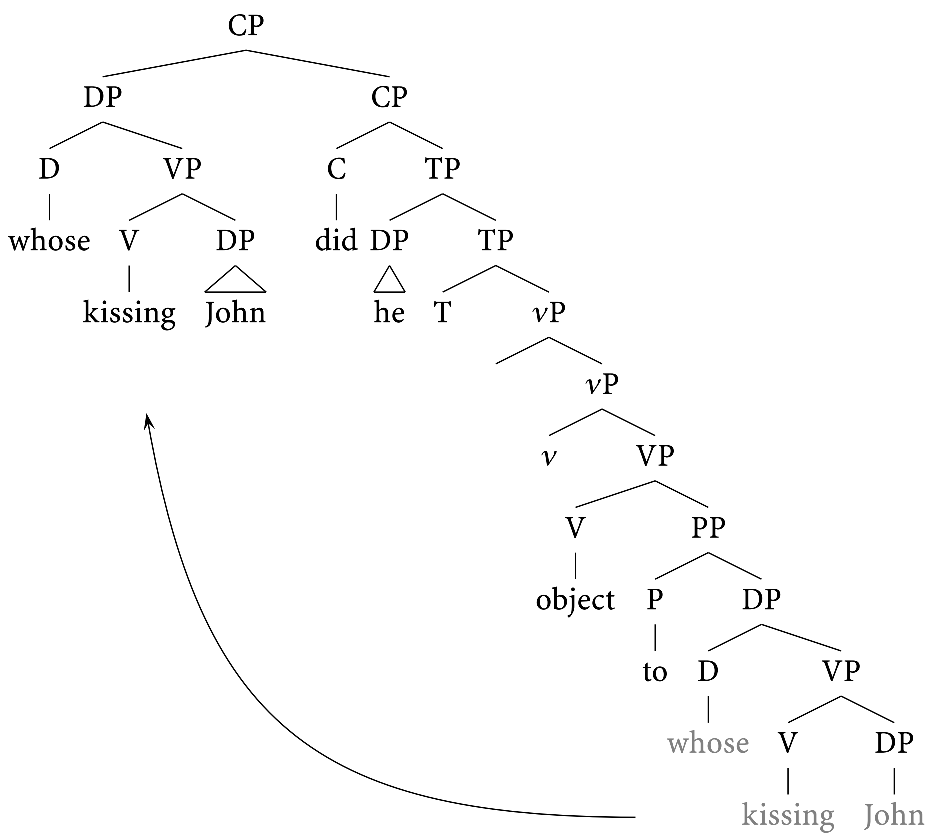
e. 

In (7e), { in, Tübingen } merges with a phrase that is buried within { a, { long, talk }}.

Evidence for the existence of late merge arises in contexts of reconstruction. It provides a way of understanding what it is that is responsible for only portions of a moved phrase being interpreted in the positions they move from. In (8), for instance, the entire *wh*-phrase behaves as if it is in its underlying position, given the existence of a disjoint reference effect between *John* and *he*.

(8) * Whose kissing John_1 does he_1 object to?

Chomsky (1993) suggested that these effects arise because movement produces "copies" of the phrase being moved and that all such copies are interpreted semantically. On this view, the representation (8) would get is (9).

(9) 

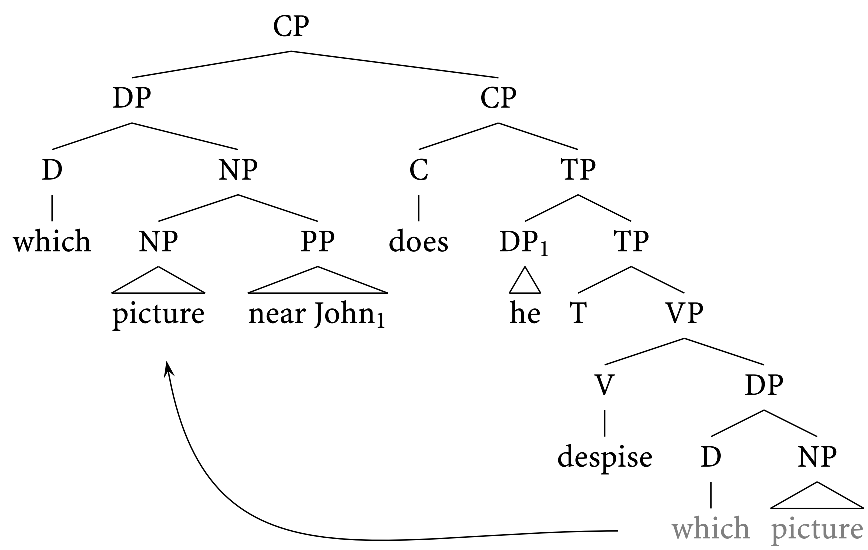
I adopt here the convention of indicating that a copy in unspoken by putting it into a shaded font. But in (10), by contrast, the locative PP behaves as if it is not in the underlying position of the *wh*-phrase.

(10) Which picture near John_1 does he_1 despise?

The solution Lebeaux (1988) suggests is to late merge the locative after the *wh*-phrase has moved, creating the representation in (11).[2]

[2] See also Freidin (1986), Munn (1994), Sauerland (1998, 2004) and Fox (1999, 2002, 2003).

(11)



The same derivation is not available in (8) because it would produce a copy in the lower position that is either semantically ill-formed or not identical in the requisite way to the copy in the higher position.

If MERGE produces phrase markers, then the only constraint it will produce is binary branching. Everything else will come from other components of the grammar. The three relevant components that I can see are those in (12).

(12) a. Feature projection does the job of giving the phrases produced by merge their labels.
b. The syntax-to-morphology mapping determines which collection of terminals are words and which are phrases.
c. The linearization algorithm maps phrase-markers onto strings.

I will have nothing to say about (12a); its effects do not, so far as I can tell, include constraints on the geometries of phrase markers. (12b) plays only a minor role in this paper. I assume that morphology is responsible for determining what the units are that the linearization algorithm applies to. It creates words from those terminals and the linearization algorithm puts those words into strings. Most of the constraints on phrase marker geometries will come, then, from the linearization algorithm. Let's look at those now.

2 The Linear Correspondence Axiom

My starting place will be the proposals in Kayne (1994), in which a linearization algorithm is proposed whose goal is to explain the trend in (13).

(13) If α asymmetrically c-commands β, then α precedes β.

The effects of (13) are felt everywhere. It is responsible, perhaps, for the near universality of *wh*-movement bringing the *wh*-phrase to the left edge of the question.[3] It is responsible too for the prevalence of topics and subjects coming initially in the sentences they are topics or subjects for.[4] And, in a more indirect fashion, it is responsible for the peculiarities of Heavy NP Shift and other species of apparent rightward

[3] See Dryer (2005b), who reports only a few languages with an obligatory final position for interrogative phrases, while, out of his sample of 803 languages, 241 require that interrogative phrases be initial, and 542 optionally position interrogatives in initial position.

[4] Of the 1344 languages sampled in Dryer (2005a), 1060 of them put that subject before the verb in canonical orders.

movement.[5] When the cases of reconstruction like that illustrated by (8) are controlled for, (13) looks like a very solid trend.

Kayne's linearization algorithm derives (13) by doing two things. It makes linearization sensitive to the asymmetric c-command relation. And then it stipulates that this sensitivity maps onto precedence. I want to remove the stipulation, but let's start with how it makes linearization sensitive to asymmetric c-command. His algorithm — slightly modified — is (14). (15) are constraints that any sensible linearization should meet; Kayne expresses these as well-formedness conditions on his algorithm.

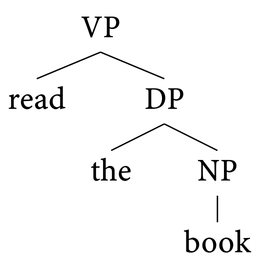
(14)
a. α c-commands β iff every phrase dominating α dominates β and α does not contain β.
b. α asymmetrically c-commands β iff α c-commands β, and β does not c-command α.
c. $d(X) =_{\text{def.}}$ the set of all terminals dominated by X.
d. $d(\langle X, Y\rangle) =_{\text{def.}}$ the set of all ordered pairs $\langle x, y\rangle$ such that x is dominated by X and y is dominated by Y.
e. $d(\langle X_1, Y_1\rangle, \langle X_2, Y_2\rangle, \ldots, \langle X_n, Y_n\rangle) =_{def.} d(\langle X_1, Y_1\rangle) \cup d(\langle X_2, Y_2\rangle) \ldots \cup d(\langle X_n, Y_n\rangle)$.
f. Let A be the set of all ⟨X, Y⟩ in some phrase marker such that X asymmetrically c-commands Y.
g. d(A) is a linearization.
h. Interpret every $\langle \alpha, \beta\rangle$ in a linearization as α precedes β (represented as $[\alpha, \beta]$).

(15) Well-formedness Conditions on a Linearization
a. If [x,y] and [y,z], then [x,z]. (it's Transitive).
b. For all distinct x and y in a phrase marker, either [x,y] or [y,x]. (it's total).
c. not ([x,y] and [y,x]) (it's antisymmetric).

He calls (14g) the *Linear Correspondence Axiom* (LCA).

Let's see this work in an example:[6]

(16)



For this phrase marker we find the following values for A and d(A):

(17)
a. A = { ⟨read, the⟩, ⟨read, book⟩, ⟨the, book⟩ }
b. d(A) = { ⟨read, the⟩, ⟨read, book⟩, ⟨the, book⟩ }
= read the book

[5] See Larson (1988).

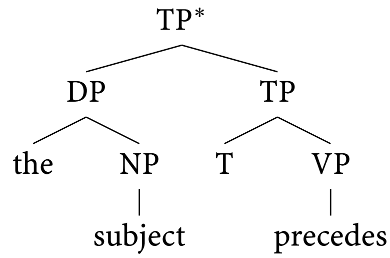
[6] There is a glitch in using Kayne's LCA in a framework that builds structure through merge alone. The merge-based theory does not permit phrases that contain only one terminal, and yet there is no way to linearize head-complement structures with the LCA if the complement is made up of only one terminal. The resolution of this glitch presently offered is the thesis that complements are never made up of just one terminal. In (16), for instance, there is likely a phonetically null head that expresses number which combines with the noun *book* to form the complement to *the*. I bracket this question in the paper; and I will assume that it is possible to form phrases with merge that have only one visible terminal in them. In those cases, I will represent the result as I have done in (16).

(17b) is total, transitive and antisymmetric — so it meets the constraints on a linearization.

As can be seen in this example, then, terminals are linearized in a way that reflects the asymmetric c-command relations of the non-terminals that contain them. If α is in a non-terminal that asymmetrically c-commands another non-terminal, β, then α will precede every terminal in β.

(16) illustrates a case where a head and complement are linearized. Cases that involve two (or more) phrases present problems. Consider, for instance, (18).

(18)



The A and d(A) for this is (19).

(19) a. $$A = \left\{ \begin{array}{llll} \langle \text{the, subject} \rangle & \langle \text{DP, T} \rangle & \langle \text{TP, the} \rangle & \langle \text{T, precedes} \rangle \\ & \langle \text{DP, VP} \rangle & \langle \text{TP, NP} \rangle & \\ & \langle \text{DP, precedes} \rangle & \langle \text{TP, subject} \rangle & \end{array} \right\}$$

b. $$d(A) = \left\{ \begin{array}{llll} \langle \text{the, subject} \rangle & \langle \text{the, T} \rangle & \langle \text{T, the} \rangle & \langle \text{T, precedes} \rangle \\ & \langle \text{subject, T} \rangle & \langle \text{precedes, the} \rangle & \\ & \langle \text{the, precedes} \rangle & \langle \text{T, subject} \rangle & \\ & \langle \text{subject, precedes} \rangle & \langle \text{precedes, subject} \rangle & \end{array} \right\}$$

Because TP asymmetrically c-commands the contents of the subject, and the subject asymmetrically c-commands the contents of TP, a linearization results that violates antisymmetry. Kayne designs a solution to this problem that lets antisymmetric linearizations arise in every situation like (18), except those where one phrase (or head) has adjoined to another. In this way, his linearization algorithm forces endocentricity on phrase markers.

His solution is to modify the definition of c-command as follows.[7]

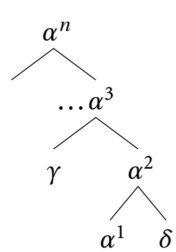
(20) α c-commands β iff α and β are categories and every category that dominates α dominates β, and α excludes β.

(Kayne 1994, (3), p. 16)

(21) A category α EXCLUDES β iff no segment of α dominates β.

(22) α DOMINATES β if every segment of α contains β.

(23) A CATEGORY is the set of α's in:



such that each α^i is a projection of α^{i-1}, and α^1 is α^0. Each $\alpha^{i>1}$ is a SEGMENT of that category.

[7] The notions "category" and "segment" come from May (1985).

Let's consider how this will work in the problematic situation in (18). The A and d(A) will now be:

(24) a.

$$\left\{ \begin{array}{lll} \langle \text{the, subject} \rangle & \langle \text{DP, TP} \rangle & \langle \text{T, precedes} \rangle \\ & \langle \text{DP, T} \rangle & \\ & \langle \text{DP, VP} \rangle & \\ & \langle \text{DP, precedes} \rangle & \end{array} \right\}$$

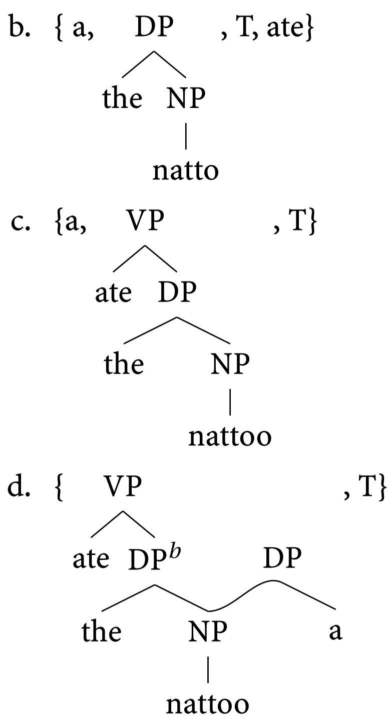
b.

$$\text{d(A)} = \left\{ \begin{array}{lll} \langle \text{the, subject} \rangle & \langle \text{the, T} \rangle & \langle \text{T, precedes} \rangle \\ & \langle \text{subject, T} \rangle & \\ & \langle \text{the, precedes} \rangle & \\ & \langle \text{subject, precedes} \rangle & \end{array} \right\}$$

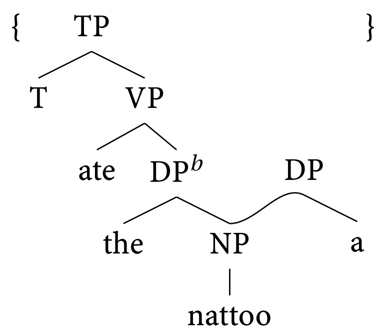
This is total, transitive and antisymmetric, and, if "⟨ ⟩" is taken to represent precedes, it will yield the expected outcome: *the subject precedes*. With these changes to the definition of c-command, and the accompanying definitions of dominate and excludes, Kayne's LCA will now correctly linearize cases such as (18).

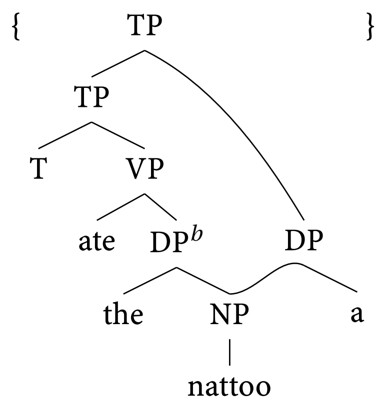
In addition to ensuring endocentricity, the LCA also prevents multidominance. Let's first see that multidominance is a possible consequence of building phrase markers with merge. As the derivation in (25) indicates, multidominance arises as a special instance of late merge.[8]

(25) a. { a, natto, the, T, ate }



8 cf. Nunes (2001, 1995).

e. 

f. 

Consider how the LCA would interpret this.

(26)

$$A = \left\{ \begin{array}{lllll} \langle \text{a, nattoo} \rangle & \langle \text{DP, TP} \rangle & \langle \text{T, ate} \rangle & \langle \text{ate, the} \rangle & \langle \text{the, nattoo} \rangle \\ & \langle \text{DP, T} \rangle & \langle \text{T, DP}^b \rangle & \langle \text{ate, nattoo} \rangle & \\ & \langle \text{DP, VP} \rangle & \langle \text{T, the} \rangle & & \\ & \langle \text{DP, ate} \rangle & \langle \text{T, nattoo} \rangle & & \\ & \langle \text{DP, DP}^b \rangle & & & \\ & \langle \text{DP, the} \rangle & & & \\ & \langle \text{DP, nattoo} \rangle & & & \end{array} \right\}$$

$$d(A) = \left\{ \begin{array}{lllll} \langle \text{a, nattoo} \rangle & \langle \text{a, T} \rangle & \langle \text{T, ate} \rangle & \langle \text{ate, the} \rangle & \langle \text{the, nattoo} \rangle \\ & \langle \text{a, ate} \rangle & \langle \text{T, the} \rangle & \langle \text{ate, nattoo} \rangle & \\ & \langle \text{a, the} \rangle & \langle \text{T, nattoo} \rangle & & \\ & \langle \text{nattoo, T} \rangle & & & \\ & \langle \text{nattoo, ate} \rangle & & & \\ & \langle \text{nattoo, the} \rangle & & & \\ & \langle \text{nattoo, nattoo} \rangle & & & \end{array} \right\}$$

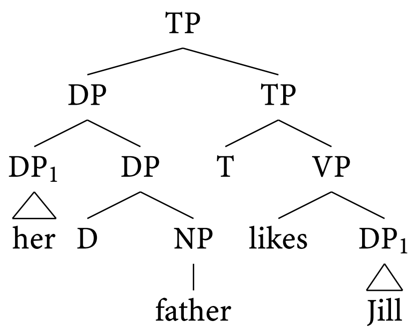
In addition to having the suspicious — but technically allowed — ⟨nattoo, nattoo⟩, it contains a variety of ordered pairs that violate transitivity and antisymmetry. The LCA, then, is all that stands in the way of multidominance.

3 Modifying the LCA

There are three problems with the LCA as it stands.

First, modifying c-command as in (20) to solve the problem posed by (18) is not innocent. It has consequences in a variety of areas. For example, it predicts that a DP in the "specifier" position of some phrase should c-command outside that phrase. There are many cases where that seems to be the wrong consequence. Here are two.[9]

(27) a. Her$_1$ father likes Jill$_1$.
b. * Her$_1$ father likes herself$_1$.



There are no categories that dominate the DP, *her*. Thus, every category that dominates *her* also dominates *Jill*. Clearly, *her* also excludes *Jill*, and so *her* c-commands *Jill*. This should lead to a disjoint reference effect, but there is none. Similarly, *her* will c-command *herself* in (27b) and by doing so satisfy the c-command requirement on reflexives. But (27b) is ungrammatical precisely because this requirement is not satisfied. The problem posed by structures like (18) is not overcome in the right way under Kayne's proposal.

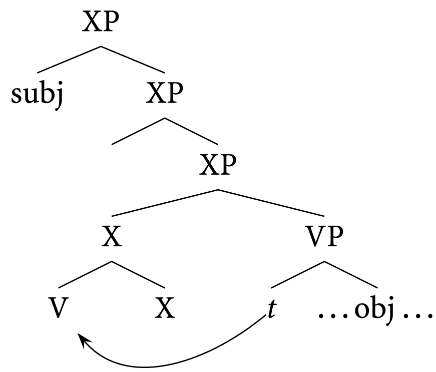
Second, Kayne's system stipulates that the linearizations it produces are interpreted as precedence relations. In fact, then, it does not completely explain the generalization in (13). It produces a method for giving an account of (13) by tying linearization to asymmetric c-command, but it does not capture why that connection comes out as precedence.

And third, it makes the trends in word order typology mysterious. It requires that there be a fixed underlying word order from which the other word orders are derived by movement. If we assume that subjects and topics tend to appear in "specifier" position, and objects tend to appear within the predicate, then all word orders should be derived from an SVO one. To get SOV word orders, this model requires one of the set of movements indicated in (28) or (29).

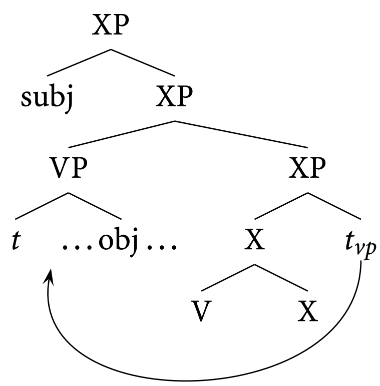
[9] Kayne points to examples such as (i) for support.

(i) Every girl$_1$'s father thinks she$_1$ is a genius.

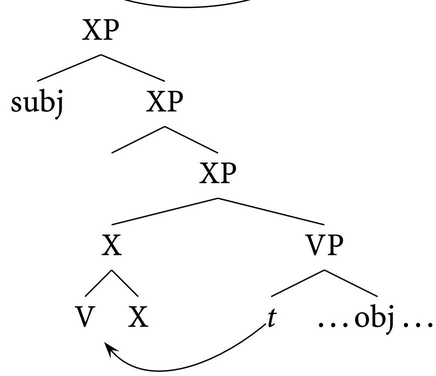
(28) a.



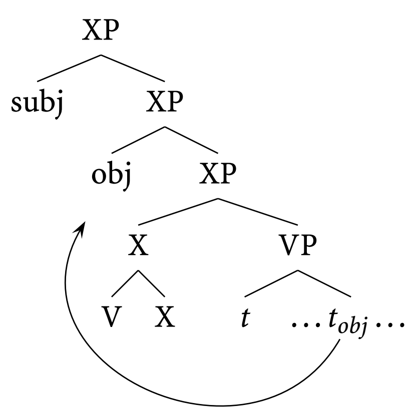
b.



(29) a.



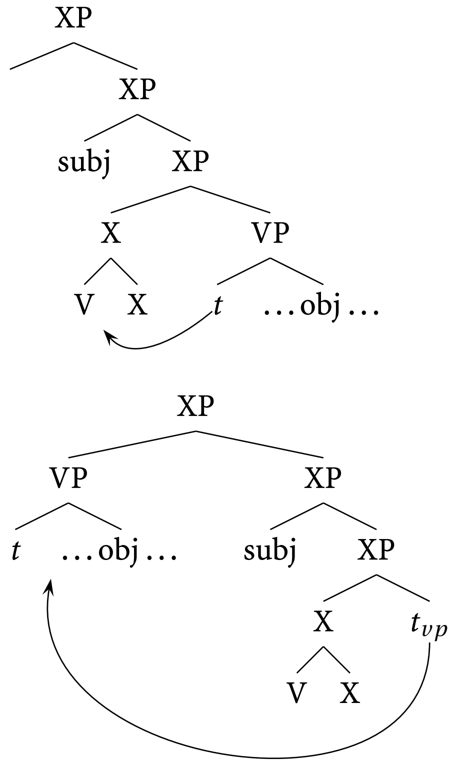
b.



If either combination of movements is equally available, however, we lose the headedness correlations in Greenberg (1963) and Dryer (1992). Those correlations suggest that OV languages are also languages in which other phrasal complements and modifiers of the verb precede the verb. To capture that would require finding a general pressure against (29) and towards (28). I don't believe such a pressure is known.

Further, any language which succumbs to the pressure for the suite of movements in (28) we might expect would also be a language which has the suite of movements in (30). This would produce OSV.

(30) a. b.



But this type of language is virtually unknown. Dryer (2007) says "While a number of languages have been claimed to be OSV, the evidence so far presented for these languages is less than convincing." On the LCA approach, this word order must be prevented by something that removes the availability of the derivation in (30). But what can that something be? There is nothing that prevents a verb phrase from moving higher than a subject; the VOS word orders of Austronesian languages seems convincingly to come about in just that way.[10] So why can that option never be combined with the, apparently very common, derivation in (28) to produce OSV word orders. Kayne's formulation of the LCA puts the entire burden of word order typology on how movement is constrained, and I do not see how that burden can be met.[11] It requires that universal grammar make available classes of derivations, like those above, along with pressures that favor some of them, like that in (28). But at the same time, it makes the very derivations it favors impossible when they are combined with others, like that which brings a VP to the left of a subject. This is too close to a paradox for comfort.

I believe these three problems are related and I will propose a way of reframing the LCA so that they are removed. What I think should be preserved is the connection the LCA makes between asymmetric c-command and linear order. I will therefore leave intact all of Kayne's proposal except for the stipulation that the orderings the LCA generates be interpreted as precedes. I will also abandon the modification to the definition of c-command that he suggests provides a solution to the inconsistent linearizations produced in examples like (18). So I will leave in place the definitions in (14), except for (14h), and the well-formedness conditions on linearizations in (15). With this change, the LCA will produce a series

[10] See, for instance, Massam and Smallwood (1997); Massam (2000).

[11] In slightly different form, this critique could be applied to the proposal in Fukui and Takano (1998), which is another linearization scheme that aims at explaining (13).

of ordering statements whose interpretation is left open. The LCA, then, will produce the sets of ordered pairs we have seen in our opening examples, but these ordered pairs are ambiguous between a "precedes" reading and a "follows" reading.

(31) $\langle \alpha, \beta \rangle = [\alpha, \beta]$ or $[\beta, \alpha]$.
($[\alpha, \beta] =_{\text{def.}} \alpha$ precedes β.)

In this way, the asymmetric c-command relation is glued to a linear relation, but it is not yet glued to a precedence relation.

I will give to output constraints the work of interpreting as precedence the ordered pairs that the LCA produces. I will design these output constraints to capture word order typology. It appears that the forces that produce word order typology separate the force that positions specifiers and the force that positions heads. This is reflected, for instance, in the fact that the subject initial order seems independent of, and much more prevalent, than the verb initial position. It is also reflected in the fact that the VO/OV orderings correlate with the placement of heads in other phrases, while the subject initial or subject final position is not known to correlate with anything cross-categorial. So an account of word order typology should strive to capture the two statements in (32), and to keep them independent.

(32) a. Irrespective of language, subjects tend to precede the rest of the material in their sentence.
b. Languages choose to order heads so that they either precede or follow the rest of the material in their phrase.

When we consider that *wh*-phrases and topics also tend to come initially in their clauses, and that this does not appear to be language dependent, we can see (32a) as special case of a restricted version of (13).

(33) a. If α asymmetrically c-commands β, α a phrase, then α precedes β.
b. Languages choose to order heads so that they either precede or follow the rest of the material in their phrase.

With this goal in mind, I suggest that the constraints that disambiguate the ordered pairs that the LCA produces are the alignment constraints in (34). Because these constraints make reference to phrases, I will interpret them as well-formedness conditions on A, which contains phrasal information. d(A), by contrast, only has information about terminals.The well-formedness conditions in (15) hold of d(A).

(34) Well-formedness conditions on A
a. Align the right edge of αP to the right edge of the projection of αP.
b. Align the left/right edge of α to the left/right edge of α's head.

(34a) is expressed as a language universal, and it will have the effect of pushing phrases to the left of the material they asymmetrically c-command. (34b) expresses a choice that languages can make that has the effect of pushing heads to either the left or the right edges of their phrases. I have replaced the stipulation in Kayne's proposal that the ordered pairs the LCA produces are interpreted uniformly as precedence relations with the alignment constraints in (34). My hope is that expressing the stipulation with these alignment constraints will open a way of grounding them in something more general. The constraint in (34a), for instance, might bear a relation to the wrap constraints on the syntax to prosody mapping that Truckenbrodt (1995, 1999) discusses.

Separating the force that orders heads from the force that orders Specifiers avoids the conundrum presented by OSV word orders for Kayne's formulation. On our view, OV word orders do not demand a force that makes it easy for derivations like those in (28) to arise, and therefore does not open the path that Kayne's formulation does for OSV word orders. In fact, it permits a way of describing what appears to be a generalization about an OS ordering and the position of the verb that the prohibition against OSV is a part of. Not only are OSV word orders very rare, but OVS ones are as well, though, unlike OSV, there are a few reported cases.[12] So we have the correlation in (35).

(35) If OS then VO.

Second, it appears that VSO languages class with the head-initial ones[13] and the data from VOS languages is consistent with them being head initial. Moreover, in the VSO and VOS languages that have been well-studied, it appears that these word orders derive from a movement operation that brings the verb, or the VP, to the left of the subject.[14] Perhaps this is because of some pressure that delivers (36).

(36) The projection of a verb precedes a subject only if that projection moves past the subject.

If (36) is correct, then we can restate (35) as (37).

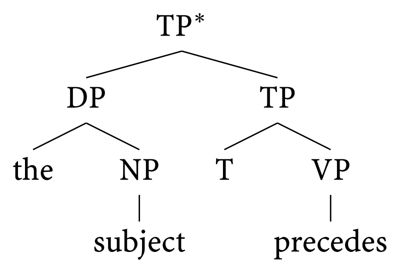
(37) A head final language does not permit movement of a projection of the verb past the subject.

I can't see (37) as anything but mysterious; but it doesn't veer towards paradox.

This proposal, then, replaces the uniform interpretation of ordering statements and precedence requirement with something that has, I hope, a better chance of capturing word order typology. It also reörganizes how the ordering that the LCA produces is related to mapping those orderings onto strings. The LCA glues asymmetric c-command relations to linear statements that are not fully disambiguated. It produces a family of strings, not all of which are consistent with each other. From these, a subset are selected that meet the alignment constraints as well as the well-formedness conditions on linearizations in (15). This reörganization has consequences.

One of those is that it takes up the job of producing a linearization for (18) that Kayne placed on redefining c-command. Consider again how this case is interpreted by the LCA.

(18)



a. $A = \left\{ \begin{array}{llll} \langle \text{the, subject} \rangle & \langle \text{DP, T} \rangle & \langle \text{TP, the} \rangle & \langle \text{T, precedes} \rangle \\ & \langle \text{DP, VP} \rangle & \langle \text{TP, NP} \rangle & \\ & \langle \text{DP, precedes} \rangle & \langle \text{TP, subject} \rangle & \end{array} \right\}$

b. $d(A) = \left\{ \begin{array}{llll} \langle \text{the, subject} \rangle & \langle \text{the, T} \rangle & \langle \text{T, the} \rangle & \langle \text{T, precedes} \rangle \\ & \langle \text{subject, T} \rangle & \langle \text{precedes, the} \rangle & \\ & \langle \text{the, precedes} \rangle & \langle \text{T, subject} \rangle & \\ & \langle \text{subject, precedes} \rangle & \langle \text{precedes, subject} \rangle & \end{array} \right\}$

As we saw before, a full interpretation of A leads to the inconsistent linearization in d(A). On the system proposed here, however, A is not fully interpreted. Instead, a subset of A is selected that meets the

[12] See Derbyshire (1977); Derbyshire and Pullum (1981).
[13] See Dryer (1991).
[14] See Alexiadou and Anagnostopoulou (1998) and the references therein.

alignment constraints, and from that subset a d(A) is produced. In this case, the alignment constraints will disambiguate the middle two columns in (18a) so that the right edge of TP is aligned with the right edge of TP*, and, because English is head-initial, it disambiguates the first and fourth columns so that the heads of DP and TP precede. The result is (38) (I have thrown out redundant statements).

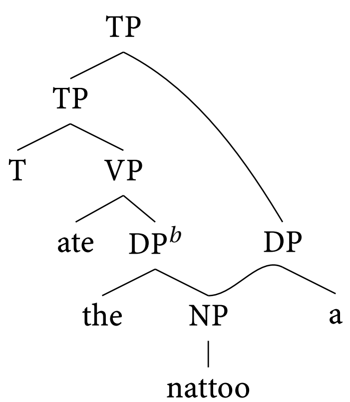
(38) $$A = \left\{ \begin{array}{lll} [\text{the}, \text{subject}] & [\text{DP}, \text{T}] & [\text{T}, \text{precedes}] \\ & [\text{DP}, \text{VP}] & \end{array} \right\}$$

This produces the well-formed, and correct, linearization in (39).

(39) $$d(A) = \left\{ \begin{array}{lll} [\text{the}, \text{subject}] & [\text{the}, \text{T}] & [\text{T}, \text{precedes}] \\ & [\text{subject}, \text{T}] & \\ & [\text{the}, \text{precedes}] & \\ & [\text{subject}, \text{precedes}] & \end{array} \right\}$$

Another consequence of the reörganization is that it no longer makes the linearization scheme incompatible with phrase markers that are multidominant. Consider how the representation in (25) will be evaluated by this new system.

(25)



The LCA spits out the ordering in (40).

(40) $$A = \left\{ \begin{array}{llllll} \langle \text{a}, \text{nattoo} \rangle & \langle \text{DP}, \text{T} \rangle & \langle \text{TP}, \text{NP} \rangle & \langle \text{T}, \text{ate} \rangle & \langle \text{ate}, \text{the} \rangle & \langle \text{the}, \text{nattoo} \rangle \\ & \langle \text{DP}, \text{VP} \rangle & \langle \text{TP}, \text{natto} \rangle & \langle \text{T}, \text{DP}^b \rangle & \langle \text{ate}, \text{NP} \rangle & \\ & \langle \text{DP}, \text{ate} \rangle & \langle \text{TP}, \text{a} \rangle & \langle \text{T}, \text{the} \rangle & \langle \text{ate}, \text{nattoo} \rangle & \\ & \langle \text{DP}, \text{DP}^b \rangle & & \langle \text{T}, \text{nattoo} \rangle & & \\ & \langle \text{DP}, \text{the} \rangle & & & & \\ & \langle \text{DP}, \text{natto} \rangle & & & & \end{array} \right\}$$

From this is selected a disambiguated subset that satisfies the alignment constraints and leads to a d(A) that meets the well-formedness constraints in (15). In this case, that subset is (41). (Again, I have selected a maximally small subset that still produces a complete linearization.)

(41) $$A = \left\{ \begin{array}{llll} [\text{a}, \text{natto}] & [\text{DP}, \text{T}] & [\text{T}, \text{ate}] & [\text{ate}, \text{the}] \\ & [\text{DP}, \text{ate}] & [\text{T}, \text{the}] & \\ & [\text{DP}, \text{the}] & & \end{array} \right\}$$

This produces the linearization in (42).

(42) $$d(A) = \left\{ \begin{array}{llll} [\text{a}, \text{nattoo}] & [\text{a}, \text{T}] & [\text{T}, \text{ate}] & [\text{ate}, \text{the}] \\ & [\text{natto}, \text{T}] & & [\text{T}, \text{the}] \\ & [\text{a}, \text{ate}] & & \\ & [\text{natto}, \text{ate}] & & \\ & [\text{a}, \text{the}] & & \\ & [\text{natto}, \text{the}] & & \end{array} \right\}$$

This meets the constraints in (15): it is total, transitive and antisymmetric. It produces the ungrammatical (43).

(43) * A natto ate the.

We will see arguments in the next section that permitting multidominance is desirable. But if so, it is clearly something that will need to be constrained. In the case of (43), we might imagine that whatever constraints prevent NP ellipsis from creating (44) will spread to prevent (43) as well.

(44) * She doesn't like any book, she likes the △.

In these two sections, then, I've argued for the following points.

(45)
- A theory of phrase marker geometries that involves nothing more than MERGE, a notion of projection, something that maps terminals onto words and a linearization scheme. The linearization scheme is assigned the job of determining whether multidominance is permitted.
- There is a linearization scheme that captures the correlation between asymmetric c-command and precedence and is not at odds with word order typology. It allows multidominance by allowing the linearizations to generate inconsistent orderings just so long as there is proper subset of that linearization that is consistent and total. I'll call this property of the linearization scheme: **tolerance**.

I'll now show that this linearization scheme gets very close to deriving the Right Edge Effect in Right Node Raising.

4 Right Node Raising

What needs to be understood about Right Node Raising is how it is that the two conjuncts can share the string that shows up at the right edge, here: *Marilyn Manson*.

(46) Mary talked to and Sally talked about, Marilyn Manson.

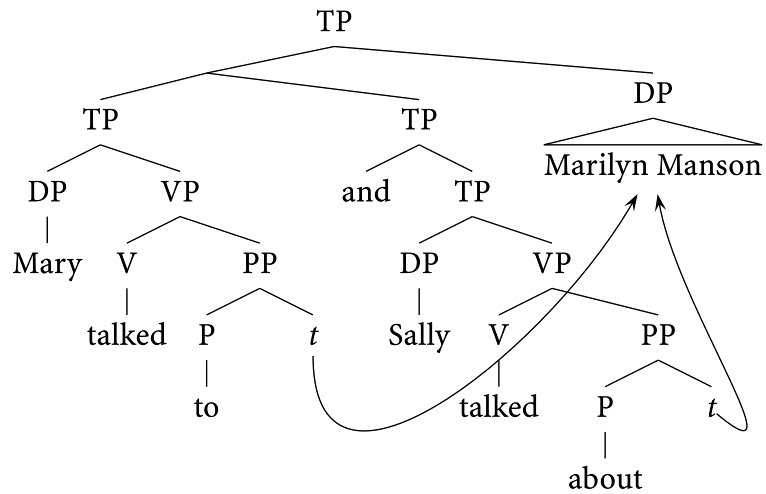
One thought is that Right Node Raising is derived by way of across-the-board movement, matching (46) to (47).

(47) Who did Mary talk to and Sally talk about?

Perhaps, then, Right Node Raising is the result of across-the-board rightward movement.[15]

[15] This is the view in Ross (1967), Postal (1974) and Gazdar (1981), and it's defended afresh in Postal (1998, chapter 4).

(48)



There are problems for that view. First, there are respects in which it does not look like rightward movement. It can strand prepositions, for instance, as (46) indicates, and this isn't possible for rightward movement generally.[16]

(49) * Mary [talked to] yesterday Marilyn Manson.

It can violate some islands too, as Wexler and Culicover (1981, note 28: 577) observe.[17]

(50) She met someone who knows, and he met someone who hates, George.

That's not normally possible for across-the-board movement:

(51) * Who did she meet someone who knows and he met someone who hates?

And strings that aren't normally moveable can Right Node Raise:[18]

(52) I know Sally's, but not Mary's, parents.
compare:
*Parents, I know Sally's.
*I met Sally's yesterday parents.

Also problematic is that in some respects the material that has Right Node Raised behaves as if it is still within the coördinates, and not moved out of it. For instance, Principle C effects remain:[19]

(53) * She_1 talked to, and he_2 married, a student that Mary_1 knew.
compare:
Which student that Mary_1 knew did she_1 talk to?

[16] See Ross (1967) and McCloskey (1986), and for an examination of a variety of cases, Postal (1998).

[17] Right Node Raising does seem to obey some islands. Wexler and Culicover (1981, p. 302) and McCawley (1982, note 11: 101) note that it obeys the Coördinate Structure Constraint, for instance. The following illustrative examples are from Postal (1998).

(i) * Tom is writing an article on Aristotle and – and Elaine has just published a monograph on Mesmer and, Freud.

(ii) * Tom may have bought sketches of Gail and photos of – and Bob saw, Louise.

(Postal 1998, (55) & (56): 121–122)

I suspect that these may be captured by the proposals I will make. But I'm not certain. See also cases where this constraint seems to be overcome in Phillips (2003, pp. 66–67).

[18] See Abbott (1976) for this point.

[19] See Levine (1985), and Bachrach and Katzir (2006), where the examples illustrating this fact are freed from potential confounds.

Similarly, negative polarity items, which are grammatical only when they are in the scope of negation, are grammatical in contexts of Right Node Raising. Movement, however, destroys the licensing relationship between a negative polarity item and its licensing negation.[20]

(54) She couldn't talk to, and he wouldn't talk to, anyone with green hair.
compare:
*It's anyone with green hair that she couldn't talk to.

It's not impossible to make some headway against these problems. For the best attempt I know of, see a paper forthcoming in *Natural Language and Linguistic Theory* by Joey Sabbagh.

An alternative proposal is to derive Right Node Raising from ellipsis:[21]

(55) Mary talked to △ and Sally talked about, Marilyn Manson.

But this too has problems. Just as with the movement account, the strings that can Right Node Raise are not normally able to elide:

(56) * Mary talked to Marilyn Manson, and Sally talked about △.

Also like Movement, we should not expect disjoint reference effects in Right Node Raising if it is ellipsis, as ellipsis ameliorates disjoint reference effects in certain contexts.

(57) I can marry a student that Mary_1 teaches but she_1 can't △.

The best attempt to overcome these difficulties and preserve a deletion account that I know of is in a forthcoming dissertation from Boston University by Seungwan Ha.

Both accounts must also deal with the Right Edge Effect which is repeated below.

(1) The Right Edge Effect
Let α be shared by β and γ through Right Node Raising, and let β precede γ. The right edge of α must align with the right edge of γ, and be able to align with the right edge of β.

(2) a. * Mary talked to about Jim and Sally talked to Paul about , Marilyn Manson.
b. * Mary talked to about Jim and Sally talked about to Paul, Marilyn Manson.
c. Mary talked about Jim to and Sally talked to Paul about, Marilyn Manson.

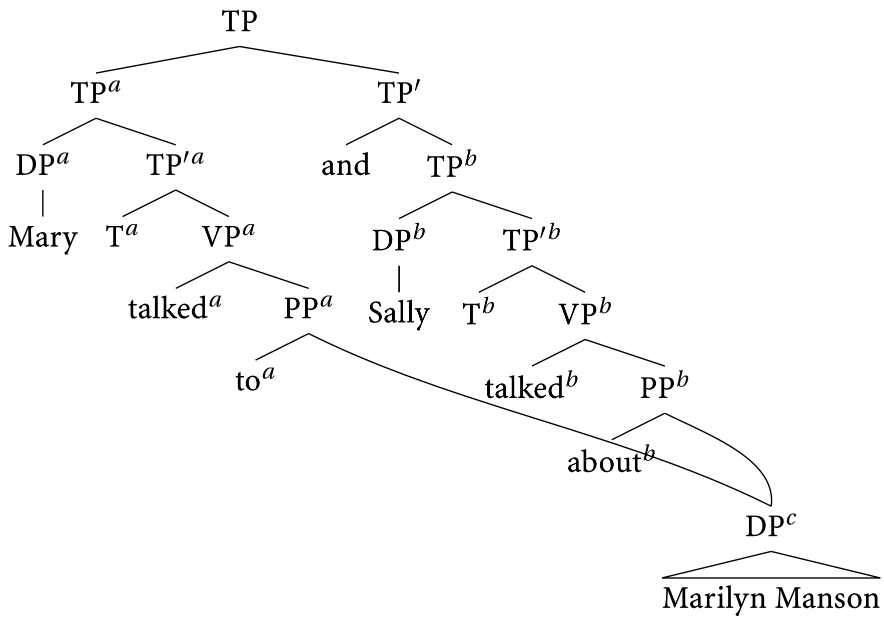
(3) a. * Sally mailed to Bill and Mary faxed the contract to Sam.
b. Sally mailed to Bill and Mary faxed to Sam, the contract.

Joey Sabbagh attempts to derive this effect from a movement account that makes use of the idea that the linearization scheme is run cyclically. I will make use of this idea. All other accounts of the Right Edge Effect that I am aware of do so by way of the linearization scheme directly, under the hypothesis that Right Node Raising is an instance of multidominance. These include Wilder (forthcoming), Bachrach and Katzir (2006), Fox and Pesetsky (2006) and Frampton (2006).[22]

On a multidominance analysis, the shared material has mothers in both conjuncts, as in (58).

[20] See Kayne (1994) for this point.
[21] This kind of account can be found in Wexler and Culicover (1981), Oirsouw (1987), Hartmann (1998), Johannessen (1998) and Wilder (1995).
[22] Other approaches to Right Node Raising that involve multidominance are McCawley (1982), McCloskey (1986), Phillips (1996, 2003) and Levine (1985).

(58)



This makes sense of the fact that Right Node Raising doesn't seem to obey the islands characteristic of rightward movement, as there is no movement involved. It also makes sense of the fact that the shared material triggers disjoint reference effects, and NPI licensing, as if it were in both conjuncts, because it is. It also doesn't face the problems that the movement and deletion accounts have in characterizing the strings that are Right Node Raise-able, but only because of our ignorance of the constraints on Right Node Raising. The problem for the movement and deletion accounts is that the strings that are known to be moveable and deletable do not match the strings that can be Right Node Raised. Because we know nothing about what strings are susceptible to multidominance, we have no reason to think that they don't match the strings that able to Right Node Raise.

The multidominance approach is not without its own problems. It is not instantly clear how representations like (58) would account for the fact that material in the Right Node Raised string can be interpreted in a way that requires it to "see" the coördination that contains it.

(59) John loves and Mary hates oysters and clams respectively.
(Postal 1998, (110): 134)

(60) Everyone$_1$ liked and at least one person$_1$ loved, the paper he$_1$ had been asked to review.
(Phillips 1996, (64a): 53)

(61) John hummed and Mary whistled, different tunes.
(Bachrach and Katzir 2006, (12a): 5)

(62) John borrowed and Mary stole, a total of 3000 dollars from the Chase Manhattan Bank.
(Bachrach and Katzir 2006, (13a): 53)

Moreover, Bachrach and Katzir (2006) point out that the ability Right Node Raising has in overcoming other island effects spreads to across-the-board movement in cases where the source for the across-the-board movement is Right Node Raising.

(63) Which book did John meet the man who wrote and Mary meet the man who published?
(Bachrach and Katzir 2006, (23): 9)

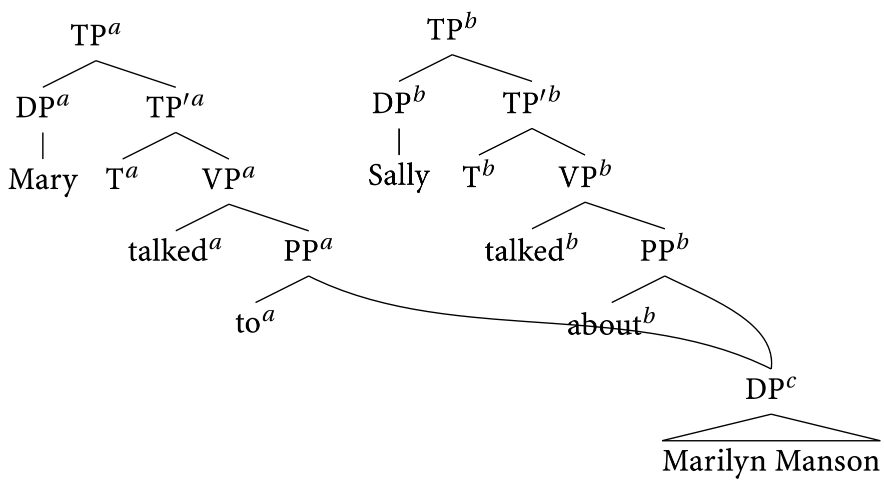
There's much that remains in producing a complete account of Right Node Raising. I will continue as if these issues do not indicate that a multidominance account is doomed.

Let's consider now how the linearization algorithm sketched in the preceding section will apply to (58). Before doing that, it is necessary to add the ingredient that Sabbagh brings to the picture. He argues that the characterization of islands as Spell Out domains plays a crucial role in getting the Right Node Raising facts. The relevant thesis can be expressed as (64).

(64) Islands are those phrases, γ, at which the linearization algorithm runs and fixes an unchangeable linearization for γ.

See Richards (1997) and Fox and Pesetsky (2004). I won't review the evidence for this position here; but I encourage you to make me defend it in the question period. This will have an effect on how the linearization is calculated for (58) because conjuncts are islands. So the characterization of islands in (64) will require the linearization algorithm to be run at that point of the derivation of (58) in which the conjuncts have been constructed. That point we will have a parse like (65).

(65)



The A for this will be too large to put on this page. So, I will ignore those orderings that involve TP'^{a} and TP'^{b} and the terms they asymmetrically c-command. Those will all get weeded out by the alignment constraint that requires the right edge of these TPs be aligned with the right edge of the TP that contains them. Once these moves are made, we get (66).

(66) A =

$$\left\{\begin{array}{llllllll}
\langle \mathrm{DP}^a, \mathrm{T}^a\rangle & \langle \mathrm{T}^a, \text{talked}^a\rangle & \langle \text{talked}^a, \text{to}\rangle & \langle \text{to}, \text{MM}\rangle & \langle \mathrm{DP}^b, \mathrm{T}^b\rangle & \langle \mathrm{T}^b, \text{talked}^b\rangle & \langle \text{talked}^b, \text{about}\rangle & \langle \text{about}, \text{MM}\rangle \\
\langle \mathrm{DP}^a, \mathrm{VP}^a\rangle & \langle \mathrm{T}^a, \mathrm{PP}^a\rangle & \langle \text{talked}^a, \text{MM}\rangle & & \langle \mathrm{DP}^b, \mathrm{VP}^b\rangle & \langle \mathrm{T}^b, \mathrm{PP}^b\rangle & \langle \text{talked}^b, \text{MM}\rangle & \\
\langle \mathrm{DP}^a, \text{talked}^a\rangle & \langle \mathrm{T}^a, \text{to}\rangle & & & \langle \mathrm{DP}^b, \text{talked}^b\rangle & \langle \mathrm{T}^b, \text{about}\rangle & & \\
\langle \mathrm{DP}^a, \mathrm{PP}^a\rangle & \langle \mathrm{T}^a, \text{MM}\rangle & & & \langle \mathrm{DP}^b, \mathrm{PP}^b\rangle & \langle \mathrm{T}^b, \text{MM}\rangle & & \\
\langle \mathrm{DP}^a, \text{to}\rangle & & & & \langle \mathrm{DP}^b, \text{about}\rangle & & & \\
\langle \mathrm{DP}^a, \text{MM}\rangle & & & & \langle \mathrm{DP}^b, \text{MM}\rangle & & &
\end{array}\right\}$$

There is no way to get a linearization out of this that meets the requirement of totality, repeated here.

(15b) For all distinct x and y in a phrase marker, either [x,y] or [y,x]. (it's total).

Because nothing of the first conjunct asymmetrically c-commands anything in the second conjunct, the terminals in the two conjuncts are not going to get linearized relative to each other. That's because the present formulation of totality presupposed that phrase markers will have only one root node. Once multidominance is allowed, however, that is no longer a safe presupposition. I suggest we rewrite the requirement of totality as in (67).

(67) For all distinct x and y dominated by a root node in a phrase marker, either [x,y] or [y,x].

Note that because *Marilyn Manson* is dominated by both root nodes, it will have to be linearized in both conjuncts. It's this result of Sabbagh's introduction of the hypothesis in (64) that will do most of the work. (I believe this very same idea is in the paper by Fox and Pesetsky.) Consider, then, how the alignment constraints will evaluate (66). (As always, I will choose the smallest subset that meets the requirements of the alignment constraints and produces a total linearization.)

(68) A =

$$\left\{\begin{array}{llllllll}
[\text{DP}^a,\text{T}^a] & [\text{T}^a,\text{talked}^a] & [\text{talked}^a,\text{to}] & [\text{to},\text{MM}] & [\text{DP}^b,\text{T}^b] & [\text{T}^b,\text{talked}^b] & [\text{talked}^b,\text{about}] & [\text{about},\text{MM}] \\
[\text{DP}^a,\text{talked}^a] & [\text{T}^a,\text{to}] & [\text{talked}^a,\text{MM}] & & [\text{DP}^b,\text{talked}^b] & [\text{T}^b,\text{about}] & [\text{talked}^b,\text{MM}] & \\
[\text{DP}^a,\text{to}] & [\text{T}^a,\text{MM}] & & & [\text{DP}^b,\text{about}] & [\text{T}^b,\text{MM}] & & \\
[\text{DP}^a,\text{MM}] & & & & [\text{DP}^b,\text{MM}] & & &
\end{array}\right\}$$

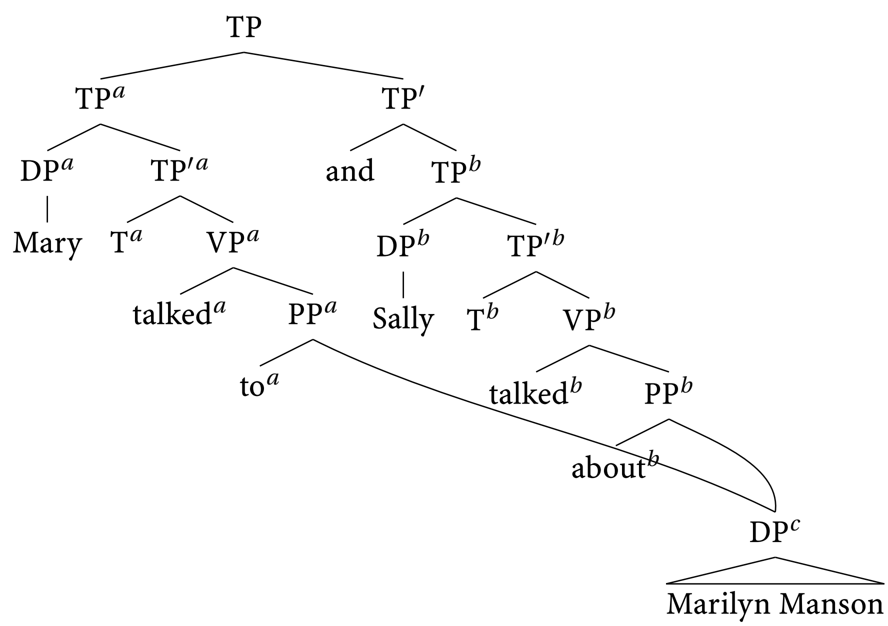
From this, we get the linearization in (69).

(69) d(A) =

$$\left\{\begin{array}{llllllll}
[\text{Mary},\text{T}^a] & [\text{T}^a,\text{talked}^a] & [\text{talked}^a,\text{to}] & [\text{to},\text{MM}] & [\text{Sally},\text{T}^b] & [\text{T}^b,\text{talked}^b] & [\text{talked}^b,\text{about}] & [\text{about},\text{MM}] \\
[\text{Mary},\text{talked}^a] & [\text{T}^a,\text{to}] & [\text{talked}^a,\text{MM}] & & [\text{DP}^b,\text{talked}^b] & [\text{T}^b,\text{about}] & [\text{talked}^b,\text{MM}] & \\
[\text{Mary},\text{to}] & [\text{T}^a,\text{MM}] & & & [\text{Sally},\text{about}] & [\text{T}^b,\text{MM}] & & \\
[\text{Mary},\text{MM}] & & & & [\text{Sally},\text{MM}] & & &
\end{array}\right\}$$

The Spell Out domain view of islands claims that any later linearization statements that are introduced in the derivation cannot change those in (69). Any later linearization statements will therefore have to manage to be both total and consistent with these. In the case at hand, that will have the effect of making sure that in the final linearization, *Marilyn Manson* follows everything in the first conjunct and everything in the second conjunct. Once the two conjuncts are joined, resulting in (58), repeated here, the new A that will be created is (70).

(58)



(70)
$$A = \left\{ \begin{array}{ll}
\langle \text{TP}^a, \text{and} \rangle & \langle \text{and}, \text{DP}^b \rangle \\
\langle \text{TP}^a, \text{TP}^b \rangle & \langle \text{and}, \text{TP}'^b \rangle \\
\langle \text{TP}^a, \text{Sally} \rangle & \langle \text{and}, \text{Sally} \rangle \\
\langle \text{TP}^a, \text{TP}'^b \rangle & \langle \text{and}, \text{T}^b \rangle \\
\langle \text{TP}^a, \text{T}^b \rangle & \langle \text{and}, \text{VP}^b \rangle \\
\langle \text{TP}^a, \text{VP}^b \rangle & \langle \text{and}, \text{talked}^b \rangle \\
\langle \text{TP}^a, \text{talked}^b \rangle & \langle \text{and}, \text{PP}^b \rangle \\
\langle \text{TP}^a, \text{PP}^b \rangle & \langle \text{and}, \text{about} \rangle \\
\langle \text{TP}^a, \text{about} \rangle & \langle \text{and}, \text{MM} \rangle \\
\langle \text{TP}^a, \text{MM} \rangle &
\end{array} \right\}$$

I've preëmptively removed from (70) those pairs that arise by virtue of the material that TP$'$ asymmetrically c-commands; those will be removed by the alignment constraint that requires TP$'$ to be aligned to the right edge of the TP that dominates it.

From (70) must be selected a disambiguated subset that puts all the terminals in the first conjunct in a linear ordering to all of the terminals of the second conjunct and satisfies the alignment constraints. That's possible, it's (71).

(71)
$$A = \left\{ \begin{array}{ll}
[\text{TP}^a, \text{and}] & [\text{and}, \text{Sally}] \\
[\text{TP}^a, \text{TP}^b] & [\text{and}, \text{TP}'^b]
\end{array} \right\}$$

The d(A) produced from (71) is (72).

(72) $$\text{d(A)} = \left\{ \begin{array}{ll} [\text{Mary, and}] & [\text{and, Sally}] \\ [\text{Mary, Sally}] & [\text{and}, \text{T}^b] \\ [\text{Mary}, \text{T}^b] & [\text{and}, \text{talked}^b] \\ [\text{Mary}, \text{talked}^b] & [\text{and, about}] \\ [\text{Mary, about}] & \textbf{[and, MM]} \\ [\text{Mary, MM}] & \\ [\text{T}^a, \text{and}] & \\ [\text{T}^a, \text{Sally}] & \\ [\text{T}^a, \text{T}^b] & \\ [\text{T}^a, \text{talked}^b] & \\ [\text{T}^a, \text{about}] & \\ [\text{T}^a, \text{MM}] & \\ [\text{talked}^a, \text{and}] & \\ [\text{talked}^a, \text{Sally}] & \\ [\text{talked}^a, \text{T}^b] & \\ [\text{talked}^a, \text{talked}^b] & \\ [\text{talked}^a, \text{about}] & \\ [\text{talked}^a, \text{MM}] & \\ [\text{to, and}] & \\ [\text{to, Sally}] & \\ [\text{to}, \text{T}^b] & \\ [\text{to}, \text{talked}^b] & \\ [\text{to, about}] & \\ [\text{to, MM}] & \\ \textbf{[MM, and]} & \\ [\text{MM, Sally}] & \\ [\text{MM}, \text{T}^b] & \\ [\text{MM}, \text{talked}^b] & \\ [\text{MM, about}] & \\ [\text{MM, MM}] & \end{array} \right\}$$

There are two potential problems with this linearization. It harbors the antisymmetric statements that are in boldface. And the last five statements in the first column are in conflict with the linearization statements that were collected before the conjuncts were joined. Let's resolve these problems by letting d(A) be tolerant too. That will allow us to jettison the last five ordered pairs in the first column, and ignore one of the boldfaced pairs that are in conflict. We must ignore "[MM, and]," because preserving it will give rise to a violation of transitivity when it is added to the linearization statements that have been collected earlier. Since the earlier linearization contains "[Sally, MM]," we would create a linearization that contained the three statements in (73) if "[MM, and]" remains.

(73) [MM, and], [and, Sally], [Sally, MM]

We must jettison "[MM, and]," then, and keep "[and, MM]." Thus, the statements in (72) that will be added to (69), repeated here, are (74).

(69)

$$\left\{\begin{array}{llllllll}
[\text{Mary}, \text{T}^a] & [\text{T}^a, \text{talked}^a] & [\text{talked}^a, \text{to}] & [\text{to}, \text{MM}] & [\text{Sally}, \text{T}^b] & [\text{T}^b, \text{talked}^b] & [\text{talked}^b, \text{about}] & [\text{about}, \text{MM}] \\
[\text{Mary}, \text{talked}^a] & [\text{T}^a, \text{to}] & [\text{talked}^a, \text{MM}] & & [\text{DP}^b, \text{talked}^b] & [\text{T}^b, \text{about}] & [\text{talked}^b, \text{MM}] & \\
[\text{Mary}, \text{to}] & [\text{T}^a, \text{MM}] & & & [\text{Sally}, \text{about}] & [\text{T}^b, \text{MM}] & & \\
[\text{Mary}, \text{MM}] & & & & [\text{Sally}, \text{MM}] & & &
\end{array}\right\}$$

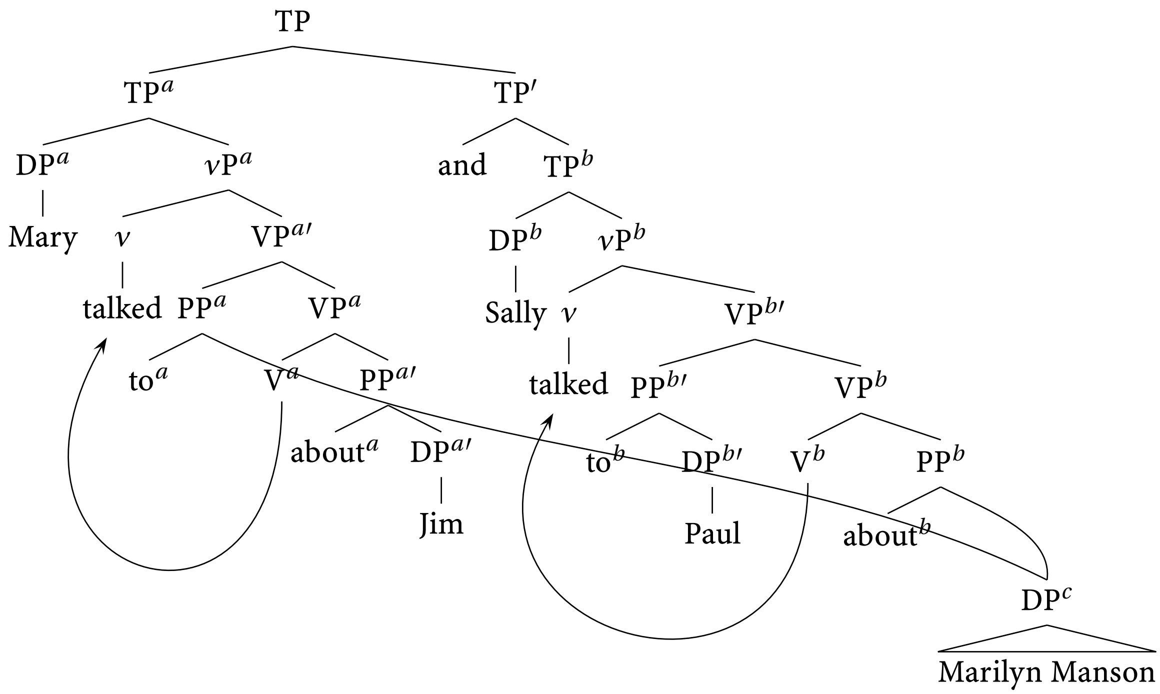
(74) $$d(A) = \left\{\begin{array}{ll}
[\text{Mary}, \text{and}] & [\text{and}, \text{Sally}] \\
[\text{Mary}, \text{Sally}] & [\text{and}, \text{T}^b] \\
[\text{Mary}, \text{T}^b] & [\text{and}, \text{talked}^b] \\
[\text{Mary}, \text{talked}^b] & [\text{and}, \text{about}] \\
[\text{Mary}, \text{about}] & [\text{and}, \text{MM}] \\
[\text{Mary}, \text{MM}] & \\
[\text{T}^a, \text{and}] & \\
[\text{T}^a, \text{Sally}] & \\
[\text{T}^a, \text{T}^b] & \\
[\text{T}^a, \text{talked}^b] & \\
[\text{T}^a, \text{about}] & \\
[\text{T}^a, \text{MM}] & \\
[\text{talked}^a, \text{and}] & \\
[\text{talked}^a, \text{Sally}] & \\
[\text{talked}^a, \text{T}^b] & \\
[\text{talked}^a, \text{talked}^b] & \\
[\text{talked}^a, \text{about}] & \\
[\text{talked}^a, \text{MM}] & \\
[\text{to}, \text{and}] & \\
[\text{to}, \text{Sally}] & \\
[\text{to}, \text{T}^b] & \\
[\text{to}, \text{talked}^b] & \\
[\text{to}, \text{about}] &
\end{array}\right\}$$

This is precisely the right ordering: *Mary talked to and Sally talked about Marilyn Manson*. In general, the linearization scheme we've adopted will correctly put the material that is Right Node Raised after *and*. So it captures this basic property of the construction. (In this respect it mimics the proposals in Wilder (forthcoming), Sabbagh (forthcoming), Bachrach and Katzir (2006) and Fox and Pesetsky (2006).)

It will also derive much of the Right Edge Effect. Consider first the case where the Right Node Raising string is not at the right edge of the first conjunct, as in (57a).

(57a) * Mary talked to about Jim and Sally talked to Paul about , Marilyn Manson.

(75)



At the point in the derivation where the two conjuncts have been built, but before they have been joined, we will gather linearization statements and fix them. Those statements will include (76).

(76) [Marilyn Manson, about^a]

This is in the linearization because PP^a asymmetrically c-commands about^a, and the only phrase, at this point in the derivation, that dominates *about^a* and asymmetrically c-commands *Marilyn Manson* is VP^a. But the alignment constraints prevent a linearization that tracks this asymmetric c-command relation. Therefore, the only way *Marilyn Manson* can be linearized with *about^a* before the two conjuncts are joined is as (76) indicates.

Similarly, at this point in the derivation the statement in (77) will be fixed into a linearization.

(77) [Sally, Marilyn Manson]

Before the conjuncts are joined, the only way *Sally* can be linearized with respect to *Marilyn Manson* is by virtue of the asymmetric c-command relation between DP^b and VP$^{b\prime}$ (or between DP^b and one of the other phrases that dominates *about^b*). Thus, the linearization will have to have (78) in it when the linearization runs on the final structure in (75).

(78) [Marilyn Manson, about^a], [Sally, Marilyn Manson]

The only way *about^a* can be linearized relative to *Sally* in (75) is as indicated in (79).

(79) [about^a, Sally]

This is because TP^a asymmetrically c-commands TP^b (and everything else that dominates *Sally*). There are no other ways in which *about^a* can be linearized with respect to *Sally* that are in compliance with the alignment constraints. In particular, if TP′ is to have its right edge aligned with the right edge of TP, then we are prevented from letting the things that TP′ asymmetrically c-commands figure in our linearization. Thus, if the linearization of (75) is to be total, (79) must be in it. The final linearization for (75) will have to include the pairs in (80), as a consequence.

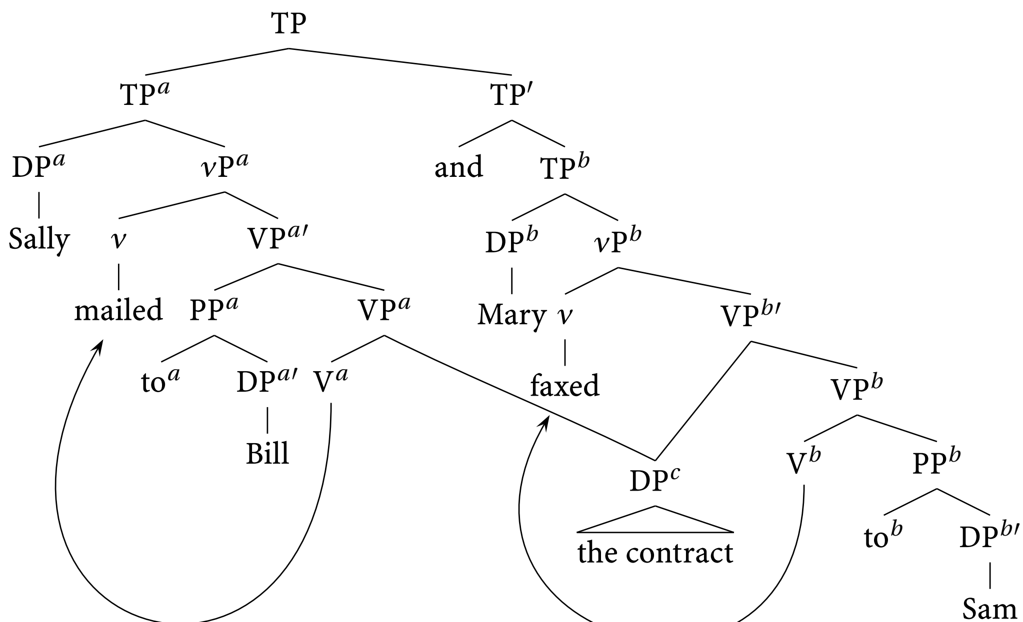
(80) [Marilyn Manson, about^a], [Sally, Marilyn Manson], [about^a, Sally]

This fails to be transitive. There is no linearization of (75) that meets all of the requirements of totality, antisymmetry and transitivity, then. In general, if there is something that the Right Node Raised material precedes in the first conjunct, that material will produce violations of transitivity once it is linearized relative to the material in the second conjunct.

Finally, consider the case where the Right Node Raised string is not at the right edge of the second conjunct, as in (57a).

(57a) * Sally mailed to Bill and Mary faxed the contract to Sam.

(81)



The phrase marker in (81) cannot yield a total linearization that meets the alignment constraints, and the reason it can't will be present at previous phases as well. The problem is that DP^c does not c-command anything. The definition of c-command, repeated here, requires that every phrase that dominates the c-commander also dominate the c-commanded.

(14a) α c-commands β iff every phrase that dominates α dominates β, and neither α nor β contain the other.

DP^c is dominated by VP^a and $VP^{b\prime}$, and nothing else in this phrase marker is dominated by both of these nodes. Because DP^c does not asymmetrically c-command anything, it does not asymmetrically c-command PP^b, or the material within PP^b. Thus, the only way the terminals in DP^c can get linearized with respect to the material in PP^b is by being asymmetrically c-commanded by something that dominates PP^b. VP^b is such a thing; the A for (81) will therefore contain (82).

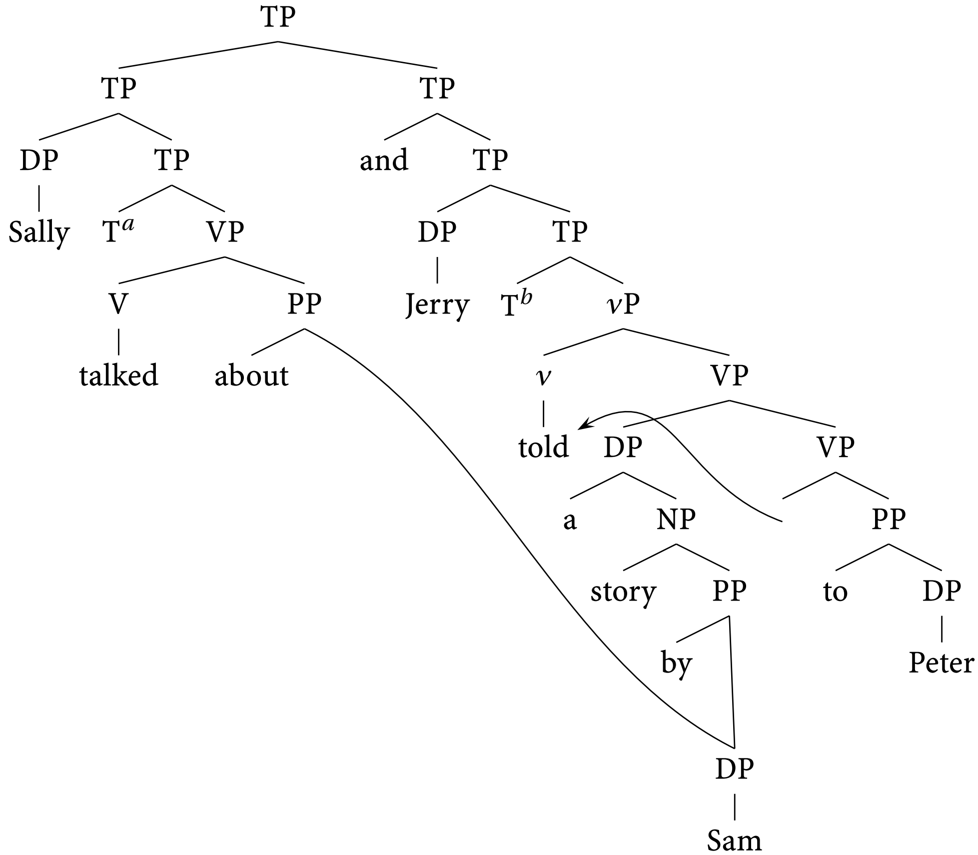
(82) [VP^b, the], [VP^b, contract]

But the alignment constraint will require these to be dropped, for they will not put the right edge of VP^b at the right edge of $VP^{b\prime}$. (Or, another way of looking at this: if (82) remain in the linearization, then *to Sam* will end up preceding *the contract*, and that is a grammatical linearization.)

There is one environment in which violations of the Right Edge Effect will leak through. These are cases where the Right Node Raised material is embedded within something in the right conjunct that does not come at the end of that conjunct. One such case is (83).[23]

[23] Thanks to Danny Fox for joyfully pointing out this failure.

(83) * Sally talked about and Jerry told a story by Sam to Peter.



The linearizations that will be collected from the first and second conjuncts before the conjuncts are joined are indicated in (84) and (85).

(84) $$d(A) = \left\{ \begin{array}{llll} [\text{Sally}, T^a] & [T^a, \text{talked}] & [\text{talked}, \text{about}] & [\text{about}, \text{Sam}] \\ [\text{Sally}, \text{talked}] & [T^a, \text{about}] & [\text{talked}, \text{Sam}] & \\ [\text{Sally}, \text{about}] & [T^a, \text{Sam}] & & \\ [\text{Sally}, \text{Sam}] & & & \end{array} \right\}$$

(85) d(A) =

[Jerry, T^b]	[T^b, told]	[told, a]	[a, story]	[to, Peter]
[Jerry, told]	[T^b, a]	[told, story]	[a, by]	
[Jerry, a]	[T^b, story]	[told, by]	[a, Sam]	
[Jerry, story]	[T^b, by]	[told, Sam]	[a, to]	
[Jerry, by]	[T^b, Sam]	[told, to]	[a, Peter]	
[Jerry, Sam]	[T^b, to]	[told, Peter]	[story, by]	
[Jerry, to]	[T^b, Peter]		[story, Sam]	
[Jerry, Peter]			[story, to]	
			[story, Peter]	
			[by, Sam]	
			[by, to]	
			[by, Peter]	
			[Sam, to]	
			[Sam, Peter]	

Unlike (57a), in this case the shared material (*Sam*) can get linearized in the second conjunct because it is dominated by something that asymmetrically c-commands material in that conjunct. When the conjuncts are joined it will be possible to find a consistent set of additional linearization pairs that, when added to (85) and (84), will produce a total linearization. This case, and ones like it, will not be blocked by the linearization scheme I have proposed. If this scheme is correct, something else must be responsible for the ungrammaticality of these examples.

I speculate that the parallelism constraint Williams (1978) discovered on across-the-board movement holds of all material shared in coördinates and so applies to Right Node Raising as well.[24] An illustration of that parallelism constraint is given in (86).

(86) a. * Who did Mary tell *t* that you like nattoo and Sally tell me that you hate *t*?

b. ?* Who did Mary tell a story about you to *t* and Jerry show a picture of *t* to me.

(87) If α is shared by conjuncts ϕ and ψ, then α must be in structurally parallel positions in ϕ and ψ.

If (87) holds of Right Node Raised material, then, because the linearization scheme ensures that this material will be the most deeply embedded material in the first conjunct, it will spread that requirement to the second conjunct.

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[24] See also Wexler and Culicover (1981, p. 302–303) for this idea applied to cases involving Coördinate Structure Constraint violations.

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