

There is no need for Late Merger

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There are two ways in which a set of constituents can be identified as copies: (i) either they are marked as non-distinct by an operation (e.g., Copy) or (ii) they are identified as non-distinct by some inspection of their properties (i.e., features). I argue that the second approach allows for a simpler and more elegant explanation of reconstruction asymmetries.

1. Sameness and Reconstruction

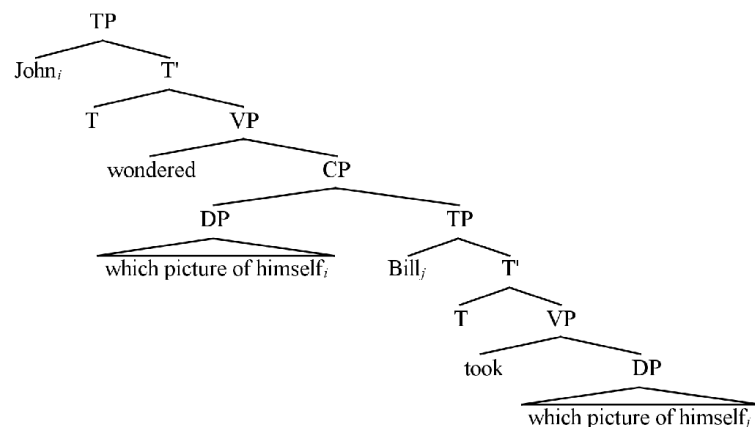
According to *Copy Theory* (Chomsky 1993) there are no real movement operations in language. The displacement property is explained in terms of *chains*, collections of non-distinct constituents being interpreted as “the same” element.

- (1) a. John was kissed ~~John~~.
b. CH = (John, ~~John~~)

An important source of evidence for this approach is *Reconstruction*. Assuming that movement involves two (or more) occurrences of the same element allows predicting the ambiguity of sentences as (2):

- (2) John wondered [which picture of himself] Bill took ____.

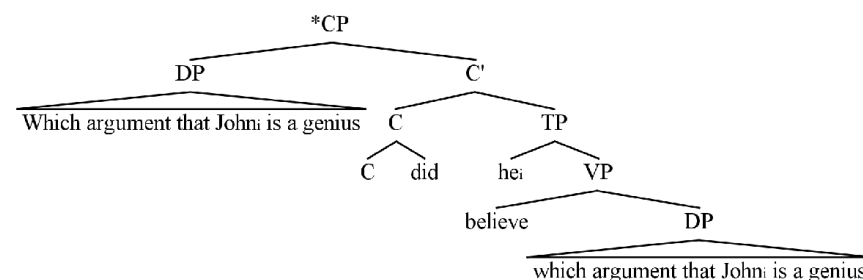
(3)



Also, it predicts the unacceptability of sentences like (4) due a Condition C violation: the R-expression *John* cannot be coreferential with a c-commanding pronoun.

- (4) *[Which argument [that John_i is a genius]] did he_i believe ____?

(5)



There are, however, some problematic cases for a “bare” explanation of Reconstruction based on Copy Theory. For instance, a sentence like (3) becomes acceptable if the conflicting R-expression is inside an adjunct.

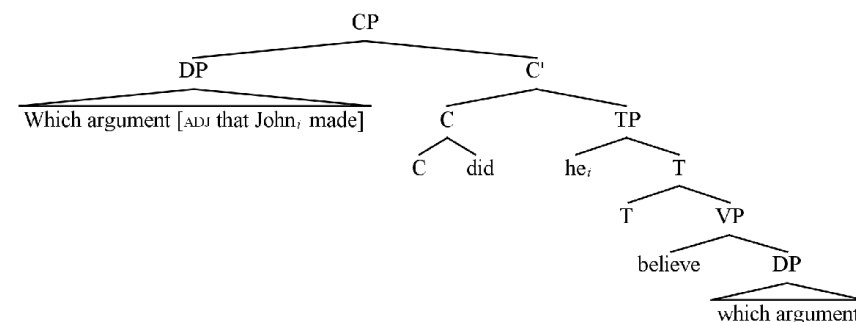
- (6) [Which argument [ADJ that John_i made]] did he_i believe ____?

According to Lebeaux (1988), these cases of anti-reconstruction do not involve a real violation of Condition C. I will refer to his approach as the *Lebeauxian Approach to Anti-Reconstruction*.

- (7) *Lebeauxian Approach to Anti-Reconstruction (LATAR)*

Apparent violations of Condition C follow from the absence of the constituent containing the relevant R-expression in some links of the movement chain.

(8)



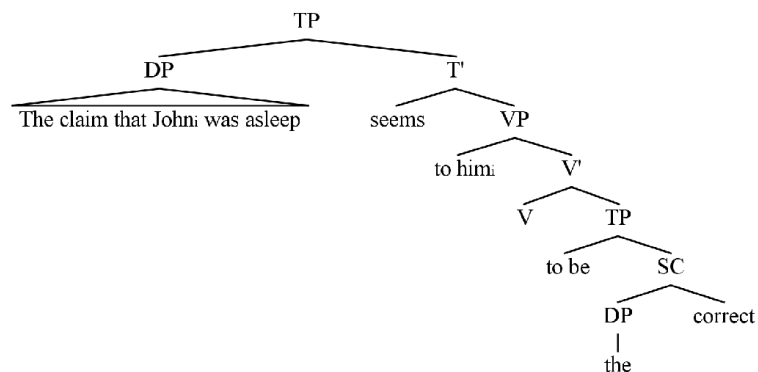
Recently, LATAR has been extended to capture phenomena involving A-movement (cf. Takahashi & Hulsey 2009). As Chomsky (1995) observes, A-movement can bleed Condition C.

- (9) [The claim that John_i was asleep] seems to him_i to be correct ____.

Adapting Lebeaux’s proposal, Takahashi & Hulsey (2009) propose that the complement NP of the determiner *the* (i.e., the constituent containing the R-expression *John*) is only present in the head of the chain¹.

¹ For convergent evidence to assume the presence of bare determiners in low links of movement chains, see Stanton (2014).

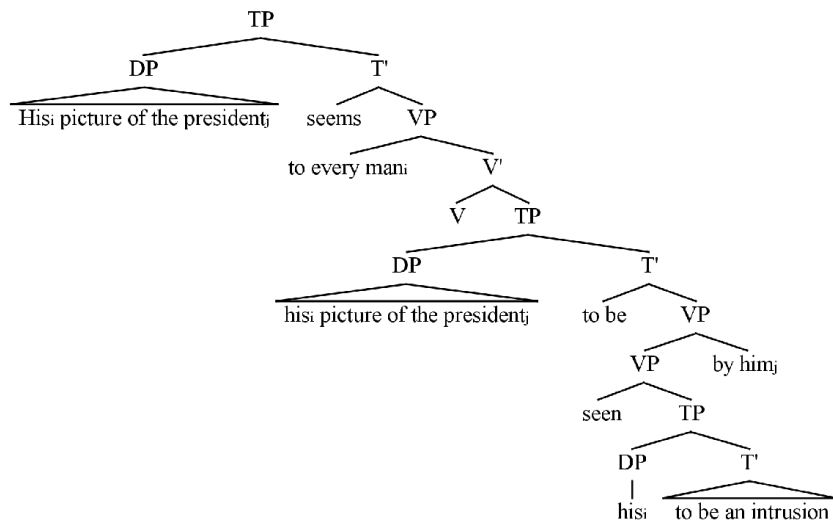
(10)



A more complex case involving A-movement, like the sentence in (11), may also be derived by assuming LATAR.

(11) [His_i picture of the president_j] seemed to [every man]_i ___ to be seen by him_j ___ to be an intrusion.

(12)



Notice that these analyses assume chains as the following:

- | | | |
|---------|--|----------|
| (13) a. | CH = (which picture of himself, which picture of himself) | CF. (2) |
| b. | CH = (which argument that John made, which argument) | CF. (6) |
| c. | CH = (the claim that John was asleep, the) | CF. (9) |
| d. | CH = (his picture of the president, his picture of the president, his) | CF. (11) |

THE PROBLEM:

- LATAR requires assuming that *non-identical constituents* can form chains.

But...

- Under Copy Theory, elements in chains are supposed to be "the same".

So...

What is the definition of *Sameness/Non-Distinctiveness* we need to account for these patterns?

In what follows I will discuss two different conceptions of Sameness and the way they deal with LATAR.

2. Derivational Sameness & Late Merger

The "standard" approach assumes that "sameness" follows somehow from the Copy operation (cf. Chomsky 1995, Nunes 1995, 2004).

- (14) a. *Derivational step α*
K = [TP was [VP kissed John₁]]
- b. *Copy*
K = [TP was [VP kissed John₁]]
L = John₁
- c. *Derivational step α+1*
[TP John₁ [T' was [VP kissed John₁]]]

Let's call this one the *Derivational Definition of Sameness*.

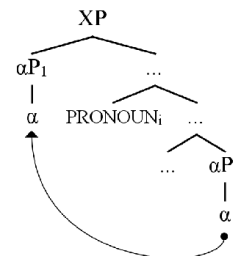
(15) Derivational Sameness (DS)

Two constituents α and β are "the same" if the Copy operation (or any other derivational mechanism) assigned them the same index.

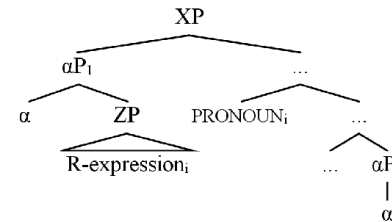
Under this definition of Sameness, deriving chain formation with non-identical links requires:

- (16) a. Generating two (or more) strictly identical copies, with the same index.
b. Applying an additional operation on the higher copy to introduce the constituent with the relevant R-expression.

(16') a.



b.



Late Merger (Lebeaux 1988) and *Wholesale Late Merger* (Takahashi & Hulsey 2009) are two versions of this type of operation. In a nutshell, they involve merging a constituent *countercyclically* inside a derived specifier.

(17) *Extension Condition (Chomsky 1993)*

Syntactic operations must extend the tree at the root.

THREE PROBLEMS WITH DS:

- It violates the *Inclusiveness Condition* (Nunes 1995, 2004, Leung 2007, Neeleman & van de Koot 2010)².
- Deus ex machina: it is not a true theory of Copy Sameness; it is just a marking mechanism. There are no independent principles or conditions deriving Sameness.
- It requires abandoning strict cyclicity to capture anti-reconstruction effects under LATAR.

2. Representational Sameness

Sameness can also be defined through evaluation and comparison of the properties of syntactic constituents.

(18) *Assumption A*

Syntactic terminals are taken to be sets of features (i.e., *Late Insertion*).

A syntactic feature is a pair *attribute-value* <Att, VAL>, where the attribute denotes a *feature-class* and the value denotes a member of such a class (cf. Gazdar et al. 1985, Adger & Svenonius 2011).

- (19) a. <Category, v>
b. <Gender, FEMININE>
c. <Number, PLURAL>
d. ...

(20) *Assumption B*

Features at the interfaces are interpreted as privative values.

In other words, LF and PF can only see the value of a feature, not its attribute.

- (21) a. {<Cat, D>, <Gen, FEM>, <Num, PL>, <Per, 3>, < κ , NOM>} SYNTAX
b. {D, FEM, PL, 3, NOM} INTERFACES

Unvalued features are *uninterpretable* (i.e., inaccessible or invisible for the interfaces).

- (22) a. {<Cat, D>, <Gen, FEM>, <Num, PL>, <Per, 3>, < κ , < >>} SYNTAX
b. {D, FEM, PL, 3} INTERFACES

(23) *Assumption C*

The Activity Condition³ applies both for A and A'-dependencies.

Therefore, some DPs should carry unvalued features for both Case κ and left-peripheral features ω .

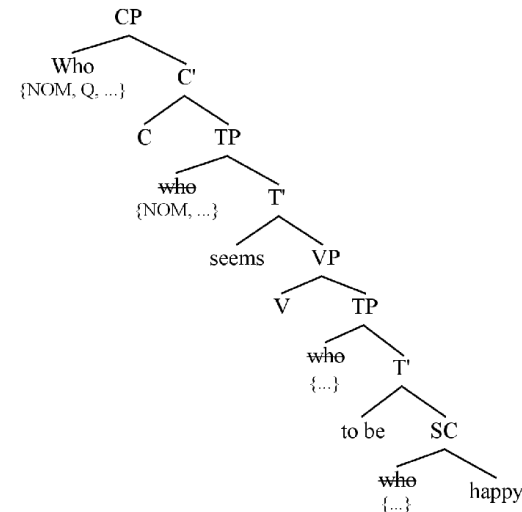
- (24) a. [_{CP} Who [_{TP} ~~who~~ seems [_{TP} ~~who~~ to be [~~who~~ happy]]]]?
b. Who_{< κ , NOM>, < ω , Q>, ...} ... who_{< κ , NOM>, < ω , < >>, ...} ... who_{< κ , < >>, < ω , < >>, ...} ... who_{< κ , < >>, < ω , < >>, ...}

² Since there are no current alternatives to DS, many authors criticize Copy Theory based on this issue: "Copy Theory by itself does not resolve the tension between Inclusiveness and the displacement property of natural language" (Neeleman & van de Koot 2010: 332).

³ The Activity Condition states a requirement for a constituent to enter in Agree relations:

- (i) *Activity Condition (Chomsky 2001)*
A goal G is accessible for Agree iff G has at least one uninterpretable feature.

(25) *Representation at the interfaces*



There is an *inclusion* relation between the (features of the) occurrences of *who*. Such a relation will arise systematically for every new copy of α , so it may be capitalized to define Sameness:

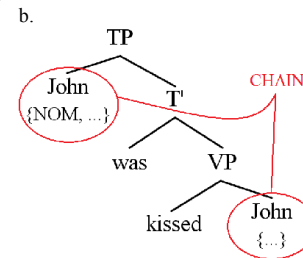
(26) *Representational Sameness (RS)*⁴

Two constituents α and β are "the same" if:

- a. α c-commands β ,
b. the features of β are a subset of the features of α ,
c. there is no δ between α and β being a proper subset of α or a proper superset of β .

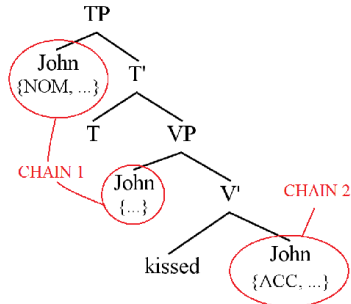
This relation is *transitive* (as any other identity-type relation): if $A = B$ and $B = C$, then $A = C$.

(27) a. John was kissed ~~John~~.

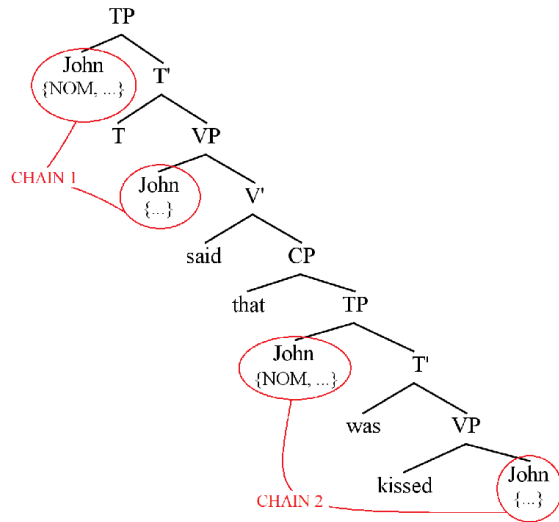


⁴ I call this *Representational Sameness* because it is based on the properties of elements in a syntactic representation. However, the representational nature of the definition may be translated into derivational terms.

- (28) a. John ~~John~~ kissed John.
b.



- (29) a. John ~~John~~ said that John was kissed John.
b.



SOME PROPERTIES OF THIS SYSTEM:

- It generates “chains” based on the featural content of constituents; it does not say anything about the Copy operation (which I am not abandoning) or any marking mechanism.
- Since there are no “syntactic clues” on what elements may constitute a chain, the interfaces must scan *independently* the syntactic representation in search for non-distinct constituents.

Given that there is no direct connection between Copy operations, LF-chains and PF-chains, a set of scenarios with mismatches between these notions is predicted.

COPY OPERATION	LF-CHAIN	PF-CHAIN	PHENOMENON
YES	YES	YES	Movement
YES	YES	NO	Multiple Copies
YES	NO	YES	Suggestions???
YES	NO	NO	What-Constructions (partial copying)
NO	YES	YES	Anti-reconstruction (LATAR)
NO	YES	NO	Resumption???
NO	NO	YES	Null-Subjects
NO	NO	NO	Trivial Chain (no movement)

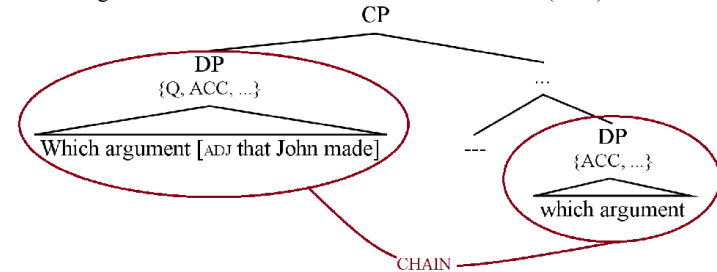
DS and multidominance-based approaches only make the first and last predictions (i.e., the YES-YES-YES and the NO-NO-NO scenarios) and require assuming additional machinery in order to explain the remaining phenomena in the table.

RELEVANT PREDICTION:

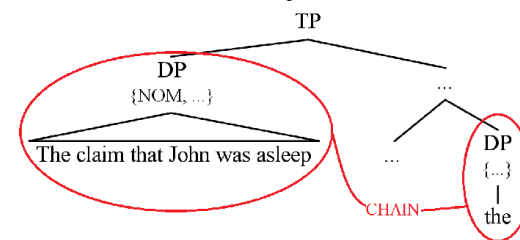
Under RS, two (or more) transformationally unrelated (i.e., base generated) DPs can form a chain as far as they comply with (26):

The definition of Sameness in (26) allows deriving the LATAR patterns in a pretty straightforward way.

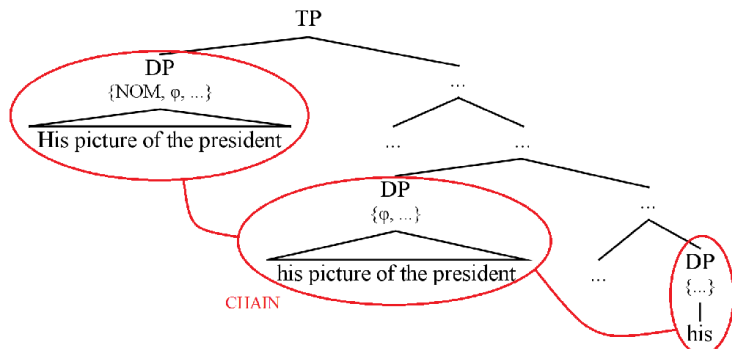
- (30) Which argument that John made did he believe? (CF. 8)



- (31) The claim that John was asleep seems to be correct. (CF. 10)



(32)



THREE ADVANTAGES OF RS:

- It complies with the *Inclusiveness Condition*: no indexes, no marking mechanisms.
- Principled definition: it follows from some assumptions on the interpretation of features at the interfaces.
- It allows for a cyclic implementation of LATAR.

4. Conclusions

In this presentation:

- LATAR was introduced (and implicitly, I showed that it is, in a sense, independent of Late Merger)
- I have offered a principled definition of Sameness, a Gordian-Knot for Copy Theory.
- I have shown how RS may be used to account for Anti-reconstruction patterns under LATAR.

5. Appendix: constraining the system

In the version I just introduced, this system heavily overgenerates chains. Here, I sketch some additional restrictions to chain formation.

I am assuming two types of restrictions that were not mentioned in the main part of the presentation: (i) a more fine-grained theory of features, and (ii) interpretability conditions on the syntactic output. The former aims to constrain the chains formed by RS; the later restricts the representations that are acceptable under LATAR.

5.1. MORE ON FEATURES: SPECIFICATION AND DEACTIVATION

Consider the following sentence:

- (33) Juan, dijo Juan que vino.
 Juan said Juan that came
 'John, John said that he came'.

The sketchy system introduced in section 2 does not work for this kind of representation: (26) predicts the existence of only one chain.

- (34) a. Juan, dijo Juan que ~~Juan~~ vino.
 b. Juan_{<K,NOM>,<@,TOP>, ...} ... Juan_{<K,NOM>,<@, ...} ... Juan_{<K,NOM>,<@, <_>}
 c. Juan_{NOM, TOP, ...} ... Juan_{NOM, ...} ... Juan_{NOM, ...}

- (35) CH = (Juan, Juan, Juan)

I think the main problem with the “sketchy” version of the system is the poor typology of features it adopts. Particularly, assuming the existence of only one class of discourse-related features ω is too restrictive.

Rizzi (2004) offers a more detailed classification of syntactic features. According to him, there are four mayor classes of features.

- (36) *Typology of licensing features* (Rizzi 2004: 243)
- Argumental: person, number, gender, case
 - Quantificational: Wh, Neg, measure, focus...
 - Modifier: evaluative, epistemic, Neg, frequentative, celerative, measure, manner, ...
 - Topic

In principle, DPs can carry Argumental, Quantificational and Topic features, the last two being a more fine-grained restatement of what an ω -feature is. Let's assume that carrying the attributes for these features is an inherent property of (a class of) D heads.

- (37) $D_{\{\langle \text{Quant}, _ \rangle, \langle \text{Top}, _ \rangle, \langle \kappa, _ \rangle, \langle \phi, _ \rangle, \dots\}}$

Obviously, not every DP requires checking a Topic-feature, for example. In these cases, a *Deactivation Value* will be assigned to the relevant attribute.

- (38) a. <Top, __> ACTIVE FEATURE
 b. <Top, CONT> INACTIVE FEATURE
 c. <Top, ~TOP> DEACTIVATED FEATURE

(38a) is a feature that can enter in an Agree relation. (38b) is a feature that already entered in an Agree relation; it triggers Defective Intervention effects. (38c) is a feature that is “off” for syntactic operations; it cannot intervene.

Deactivated Features are interpretable at the interfaces: they trigger “by default” interpretations.

Under these assumptions, it is possible analyzing the sentence in (33) as follows:

- (39) a. Juan, dijo Juan que Juan vino.
 b. Juan_{<K,NOM>,<Top,ABOUT>,<Foc,~FOC>, ...} ... Juan_{<K,NOM>,<Top,~TOP>,<Foc, INFORM>, ...} ...
 Juan_{<K,NOM>,<Top,~>,<Foc,~FOC>, ...}
 c. Juan_{NOM, ABOUT, ~FOC, ...} ... Juan_{NOM, ~TOP, INFORM, ...} ... Juan_{NOM, ~FOC, ...}

5.2. CONSTRAINTS ON LATAR

Slightly modifying ideas from Takahashi & Hulse (2009) and Fox (1999), two notions constrain the predictions of LAtAR: (i) Agreement/Case, and (ii) semantic interpretability.

Regarding Agreement/Case, it should be noticed that a bare D cannot value the ϕ -features on a non-defective Probe:

(40) [TP T {<Per, >, <Gen, >, <Num, >} ... [VP V D {<Per, 3>, <K, >}]]

Therefore, it is necessary introducing a full DP with a complete set of ϕ -features in the checking domain of the relevant Probe P (i.e., as late as Spec,P).

(41) [TP DP {<Per, 3>, <Gen, FEM>, <Num, PL>, <K, NOM>} [T' T {<Per, 3>, <Gen, FEM>, <Num, PL>} ... [XP D {<Per, 3>, <K, >}]]]

PREDICTION A

Unpronounced caseless links in non-trivial chains (i.e., “traces” of A-movement) may be $D^{\min/\max}$, and $D^{\min/\max}$ cannot trigger Condition C violations.

Adjuncts do not affect the featural content of the constituent they are introduced in, so basically their presence in an unpronounced link is only constrained by interpretative principles (e.g., Binding Theory). Therefore, negative data involving adjuncts violating Condition C cannot be generated.

PREDICTION B

Condition C cannot be violated by a R-expression inside an adjunct.

Regarding interpretability, Fox (1999) assumes that *Trace Conversion* is required to apply to the lowest link in a chain to obtain a valid operator-variable representation under Copy Theory:

(42) *Trace Conversion* (Fox 2002: 67)

- Variable Insertion: (Det) Pred \rightarrow (Det [Pred $\lambda y(y=x)$])
- Determiner Replacement: (Det) [Pred $\lambda y(y=x)$] \rightarrow the [Pred $\lambda y(y=x)$]

(43) Which boy Mary visited ~~which boy~~?

Paraphrase: Which is the boy x , such that Mary visited the boy x ?

LF: [Which boy] λx . Mary visited the boy x

(44) a. Which woman did Mary meet ~~which girl~~?

b. Which woman $\{<K, ACC>, <\emptyset, Q>, \dots\}$... which girl $\{<K, ACC>, <\emptyset, >, \dots\}$

c. Which woman $\{ACC, Q, \dots\}$... which girl $\{ACC, \dots\}$

d. CH = ([DP which woman], [DP which girl])

This derivation would be blocked because the output of Trace Conversion would be uninterpretable.

(45) *[Which woman] λx . Mary meet the girl x

If elliptical sites and traces of wh-movement form a natural class (i.e., if they are variables), then we should expect that both of them are constrained by similar identity conditions. If some of these conditions are semantic, then we need to consider them as *complementary* to (26).

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