Relabeling and Multiple Spell-Out: Raising-to-Object as Epiphenomenon

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1. Introduction

As is well-known, the standard analysis of the complement of a certain class of verbs such as *believe, consider,* etc. in the Government-and-Binding/GB Theory (Chomsky 1981) states that these verbs have the exceptional capacity to govern the embedded subject position of their complement, as shown in (1).

(1) Ben believes [Mie/her/*she to be ill].

In this example, *Mie* is Case-marked by *believe*. The fact that the complement clause here is transparent for government was deemed exceptional because it should constitute a barrier for government, upon which case assignment is contingent. This issue was taken care of in terms of the S'/CP-Reduction, coupled with the assumption that the lower TP is "defective", hence is not opaque for an outside governor. Evidence from binding, adverb placement, scope, and negative polarity licensing (Postal 1974; Lasnik and Saito 1991; Koizumi 1995; Lasnik 1999) suggests that the embedded subject still undergoes some sort of movement into the matrix clause, either overly (for Postal 1974 Koizumi 1995, and Lasnik 1999) or covertly (for Lasnik and Saito 1991). Assuming the Koizumi-style Split *v*P analysis, (1) is analyzed as in (2).

(2) Ben [$_{vP}$ believes$_i$ [$_{AgrOP}$ Mie$_j$ AgrO+t$_i$ [$_{VP}$ t$_i$ [$_{TP}$ *t*$_j$ to be ill].

At the present state of the Minimalist Program, whether we are entitled to use Agr heads in (2) remains somewhat unsettled. Chomsky (1995), for example, abandons them because of their dubious status at the LF interface, and many minimalist syntacticians follow this tradition. Granted the raising analysis as in (2), the question still remains why such an operation as raising-to-object exists in natural language grammar in the first place: the operation itself is string-vacuous, restoring the original order, and there is no solid pragmatic or semantic motivation (Chomsky 2008), except certain new consequences for structural aspects of semantic interpretation such as binding, new scope, and negative polarity licensing.

This squib suggests that this raising-to-object operation does not exist in grammar at least in the way generative syntacticians have analyzed it thus far. It is simply an epiphenomenal consequence of two independently available mechanisms employed in natural language syntax – labeling and spell-out. In the next section, we review these two mechanisms. In section 3, I suggest a new reconceptualization of raising-to-object as nothing but the reprojection/"relabeling" of a lexical item that undergoes internal merge into the specifier of TP. In section 4, I examine a potential overgeneration problem with my analysis raised by free relative clauses, and suggest a tentative solution to the problem.

2. The Underdetermined Labeling Algorithm and Multiple Spell-Out

This section introduces two assumptions in the current minimalist framework – underdetermined labeling algorithm (Chomsky 2008) and multiple spell-out (Uriagereka 1999) – to lay out groundwork for my new analysis of raising-to-object in section 3.

2.1. *Chomsky's (2008) Underdetermined Labeling Algorithm*

The generative theory of phrase structure (e.g., Chomsky 1995) assumes that two conditions in (3a, b) govern the labeling of syntactic objects. (LI in (3a) stands for lexical item.)

(3)a. In {H, α}, H an LI, H is the label.

b. If α is internally merged to β, forming {α, β}, then the label of β is the label of {α, β}.

(Chomsky 2008: 145)

However, there are a few scenarios in which these two conditions yield a conflicting result in the determination of a label for a complex object. One such case concerns the step of the syntactic derivation at which α, itself an LI, is internally merged to β. (3b) requires that the target of the movement (namely,β) project its label while (3a) dictates that the label of the moving head (namely, α) project. Chomsky (2008) claims that this underdetermined view of labeling not only serves as the correct move for the purposes of narrow syntactic computation, with one of the choices yielding an interpretive deviance only at the Conceptual-Intentional interface, but also receives independent empirical support from the distribution and interpretation of English free relative clauses. He points out that the phrase *what you wrote* in (4a) can be interpreted either as a regular *wh*-clause (4b) or a free relative clause (4c). Note further that this ambiguity disappears with a minimally different phrase *what book you wrote*, as shown in (4a, b) (see section 4 for more discussion on this point).

(4)a. what you wrote

b. I wonder what you wrote.

c. I bought what you wrote.

(5)a. I wonder what book you wrote.

b. * I bought what book you wrote.

When the target of internal merge (namely, C) projects, as in (4b), (4a) has an array of distributional and interpretative properties expected of CPs. When the head projects, as in (4c), (4a) is construed as a free relative clause with DP-like interpretations and distributions. Since an internally merged element can project its label only when it is a lexical item, this analysis correctly excludes the free relative interpretation for *what book you wrote*, as shown in (5b).

2.2. *Uriagereka's (1999) Multiple Spell-Out Hypothesis*

One central hypothesis of the derivational theory of syntax within the Minimalist Program is that phonological and semantic information is transferred to the syntax-external interpretive components in a piecemeal fashion. Uriagereka (1999: 252) presents one version of this hypothesis from the viewpoint of keeping the simplest linearization procedure within Kayne's (1994) Linear Correspondence Axiom ("If α asymmetrically c-commands β, α precedes β."). Since this procedure can function only with uniformly right-branching configurations (or what Uriagereka calls "Command Units"), it cannot determine the relative ordering between the terminal nodes contained within two complex left-branching structures. Uriagereka proposes that syntactic derivation Spells-Out one of these complex structures to PF before it merges with the other so that the relative ordering of the terminals within the Spelled-Out structure may be correctly fixed by the simplex linearization process stated above. When the ordering is fixed, the structure attains the status of "a giant lexical compound", whose set-theoretic status is no different from a simplex

lexical item such as *book, paper*, and *desk*, and is later plugged in where it belongs in the entire derivational workspace. This Multiple Spell-Out/MSO model derives the well-known Left-Branch effects/Conditions on Extraction Domains (Cattell 1976; Huang 1982), which prohibit movement of any element from the non-complement position, as illustrated in (6a, b).

(6)a. * $[_{DP}$ Which book$]_i$ did $[_{DP}$ a critic of $t_i]$ meet you at the conference?

b. * $[_{DP}$ Which book$]_i$ did you go to class $[_{PP}$ before she read $t_i]$?

The extraction from the subject and the adjunct positions is impossible here because the DP/PP that contains the *wh*-phrase *which book*, as an internally complex left-branching structure, must be Spelled-Out early to PF, leaving this portion as a closed/frozen domain. As a result, the movement of *which book* is prohibited. Uriagereka's model dictates that complex specifiers and adjuncts be Spelled-Out early for the purposes of linearization at PF before they merge with another left-branching structure, and hence form closed domains for syntactic extraction.

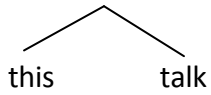
Johnson (2003) develops a different version of the MSO model. Johnson argues that internally complex adjuncts and subjects (which he reanalyzes as XPs adjoined to TPs) are Spelled-Out mid-derivationally and renumerated as a syntactic subtree. This model thus provides a natural explanation of the left-branch effects illustrated earlier. To illustrate his model, consider the derivation of the VP *flew after this talk*. Its derivation is given in (7a-g) in a step-wise fashion.

(7)a. **Select:**

talk N = {*v*, flew, after, this}

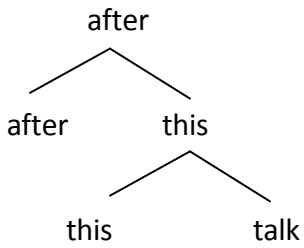
b. **Merge**:

this N = {v, flew, after}



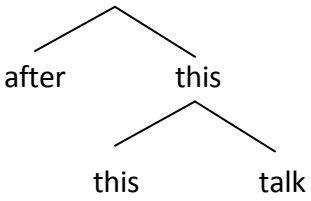
c. **Merge:**

after N = {*v*, flew}



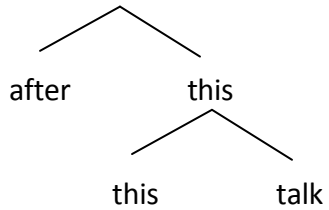
d**.** **Renumerate:**

N = {v, flew, after }

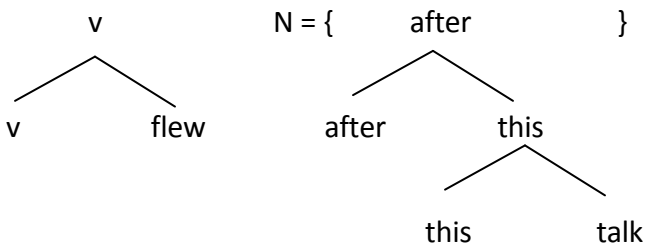


e. **Select:**

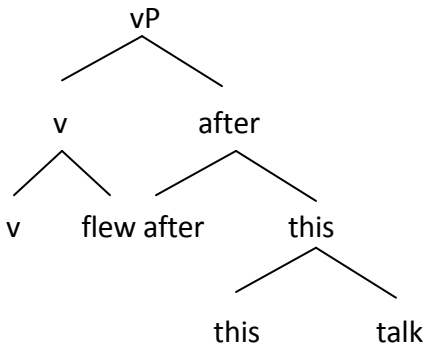
v N = {flew, after }



f. **Merge**:



g. **Merge:**



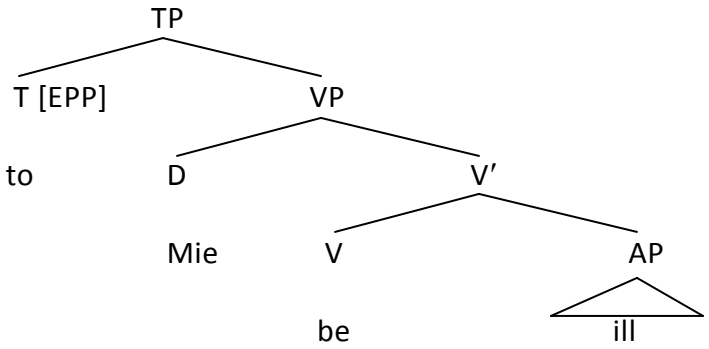
The adjunct PP *after this talk* is assembled as shown in (7a-c). This PP then is Spelled-Out and renumerated as a derived subtree (7d). This renumerated item is merged with the VP, as shown in (7e-g). Johnson shows in detail that adjunct and subject phrases always require renumeration for the derivation to converge. Note that this version of MSO model does not entail that adjunct and subject XPs renumerated into the derivation should turn into a terminal item. For the purposes of this squib, however, I assume that all and only internally complex left-branching configurations are re-introduced into the syntactic derivation as a derived terminal lexical item, as originally suggested by Uriagereka's MSO model.

3. Toward Eliminating Raising-to-Object from Linguistic Theory

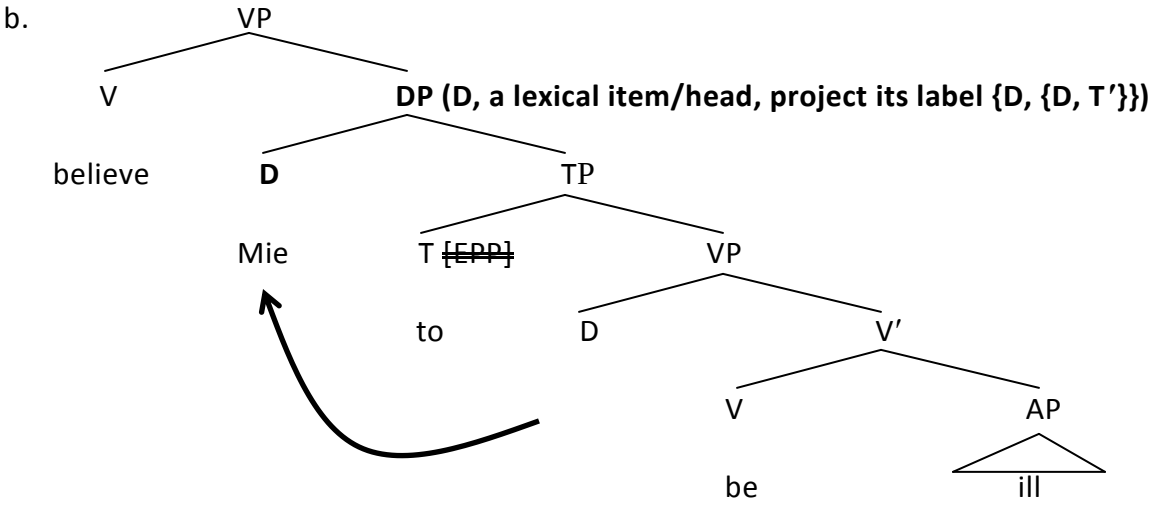
I show here that raising-to-object is eliminable from syntactic inventory: it is an epiphenomenon that arises as the interaction of the two assumptions laid out in section 2, as passive is a taxonomic artifact derived by the interaction of general principles and lexical properties of the verbal head. Consider first a case of raising-to-object with the simplex embedded subject as in (8). The relevant steps of the derivation for (8) are shown in (9a, b).

(8) Ben believes [Mie to be ill].

(9)a.



b.

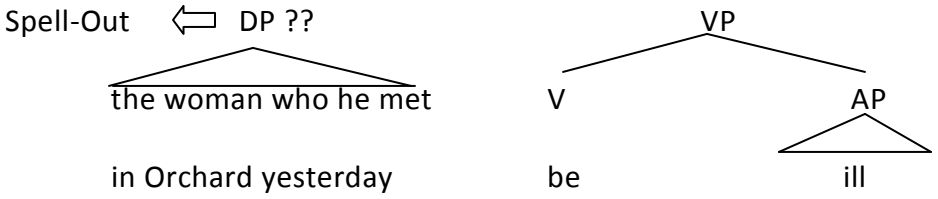


(9a) represents the stage of derivation in which the embedded VP merges with the infinitival T with the EPP feature. This derivation continues further with the movement of the embedded subject to the specifier of the TP to satisfy the EPP feature of the T head. Since the moving element is a lexical item/head, the underdetermined labeling algorithm allows this simplex D to project its label as shown in (9b). This DP, then, can be assigned/check its accusative Case feature with the matrix verb *believe*. This analysis thus correctly captures all the properties that have been attributed to the matrix object status of the erstwhile embedded subject by Lasnik, Saito, Postal, and Koizumi.

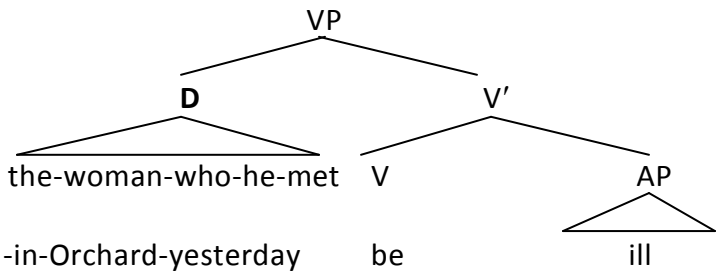
Now, let us consider the derivation of raising-to-object with complex embedded subjects. An example in point is in (10), with its syntactic derivation shown in (11a, b).

(10) Ben believes [[the woman who he met in Orchard yesterday] to be ill].

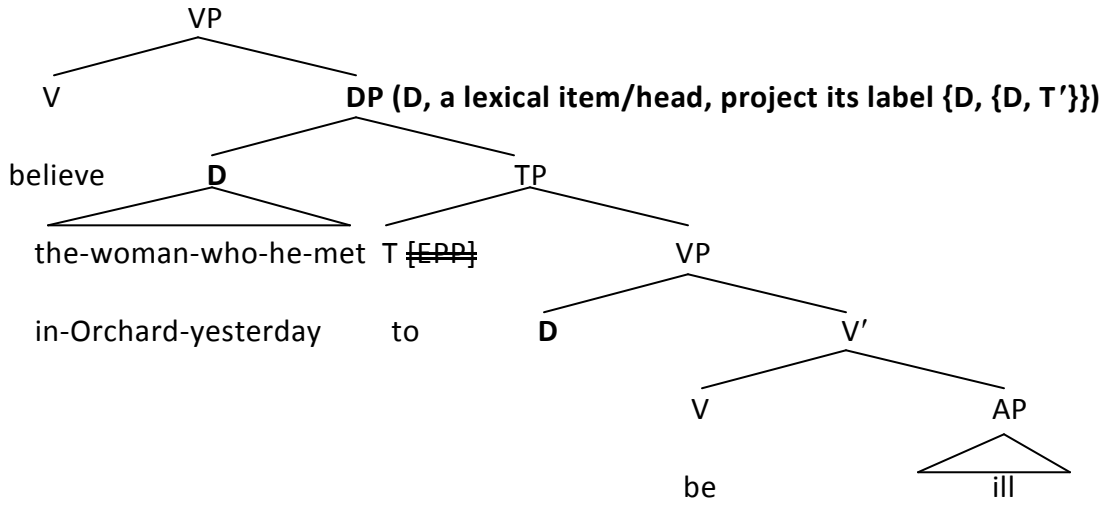
(11)a.



b.



c.



(11a) represents the stage of the syntactic derivation at which the complex DP is to undergo merge with the VP. Recall that direct merger of these two syntactic objects results in an unlinearizable string due to the Linear Correspondence Axiom. Thus, the subject is Spelled-Out early as a Last Resort, is renumerated and reintroduced into the syntactic derivation as a derived simplex "giant" compound. This part of the derivation is shown in (11b). Now, note crucially that the derivation that follows is identical to the derivation for (8) with the simplex embedded subject for all intents and purposes because the erstwhile DP is now a lexical item after Spell-Out flattens and renumerates it. In (11c), this derived element undergoes internal merge into the specifier of the embedded TP. In accordance with the underdetermined labeling algorithm, this element projects its label, as shown. In this way, the so-called raising-to-object now becomes an epiphenomenal consequence of the two independent assumptions.

4. A Potential Remaining Problem: Free Relative Clauses

As shown in section 2.1, one area in which the underdetermined labeling algorithm has been employed is free relative clauses. Chomsky suggests that the free relative/DP-reading of *what book you wrote* is blocked in (5b) because *what book*, a complex subject, cannot project its label in the landing site of internal merge. My analysis now seems to be problematic because *what book* could be renumerated as a derived simplex lexical item. Then it should be able to project its label to incorrectly give the free relative interpretation in (5b). Independent evidence suggests, however, that this interpretation in examples like (5b) with a complex DP is blocked for an independent reason. Consider (12a, b).[1]

(12)a. I will accept what mission you entrust me with.

b. * I will accept what missions you entrust me with. (Citko 2005: 12)

(12a) shows that the DP-interpretation is available even though the internally merged element is a complex DP. (12b) shows that this reading disappears when this DP occurs in the plural form. The contrast here, therefore, suggests that the head vs. phrasal distinction does not determine the DP vs. CP interpretation in free relative clauses and hence that the MSO model can be successfully grafted onto the underdetermined labeling algorithm.

References

Cattell, Ray. 1976. Constrains on movement rules. *Language* 52: 18-50.

Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.

Chomsky, Noam. 1995. *The minimalist program*. Cambridge, Mass.: MIT Press.

Chomsky, Noam. 2008. On phases. In *Foundational issues in linguistic theory*, ed. by Robert Freidin, Carlos Otero and Maria-Luisa Zubizarreta, 33-166. Cambridge, MA: MIT Press.

Citko, Barbara. 2005. On the nature of merge: external merge, internal merge, and parallel merge. *Linguistic Inquiry* 36: 475-. 497

Huang, C.-T. James. 1982. Logical relations in Chinese and the theory of grammar. Doctoral dissertation, MIT.

Johnson, Kyle. 2003. Towards an etiology of adjunct islands. *Nordlyd* 31:187–215,

Kayne, Richard. 1994. *The antisymmetry of syntax*. Cambridge, Mass.: MIT Press.

Koizumi, Masatoshi. 1995. Phrase structure in minimalist syntax. Doctoral dissertation, MIT.

Lasnik, Howard. 1999. *Minimalist analysis*. Oxford: Blackwell.

Lasnik, Howard and Mamoru, Saito. 1991. On the subject of infinitives. In Papers from the 27th Regional Meeting of the Chicago Linguistic Society, ed. by Lise M. Dobrin, Lynn Nichols, and Rosa M. *Rodriguez*, 324-343. Chicago Linguistic Society: University of Chicago.

Postal, Paul. 1974. *On raising: One rule of English grammar and its theoretical implications*. Cambridge, Mass.: MIT Press.

Uriagereka, Juan. 1999. Multiple spell-out. In *Working minimalism*, ed. by Samuel David Epstein and Norbert Hornstein, 251-282. Cambridge, Mass.: MIT Press.

Footnotes

[1] I thank Takahiro Tozawa (personal communication) for directing my attention to (12a, b).