M-MERGER as relabeling: a new approach to head movement and noun-incorporation

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Matushansky 2006 proposes that head movement of X^0 to Y^0 be understood as follows: X^0 undergoes run-of-the-mill syntactic movement to [Spec,YP], followed by M-MERGER, at the landing site, between X^0 and Y^0. In the years since the publication of this paper, the proposal has proven fruitful and influential. It has been leveraged and extended to account for a wide array of phenomena—most notably, clitics (see Harizanov 2014, Kramer 2014, i.a.).

However, the M-MERGER operation which lies at the core of this proposal, and which is the key to distinguishing head movement from other types of movement, is conceptually problematic. The 'M-' in M-MERGER is meant to suggest 'morphological'; but in actuality, Matushansky's M-MERGER cannot be understood as a morphological operation. That is because it turns what was a non-constituent (X^0 and Y^0, to the exclusion of whatever is in [Compl,Y]) into a constituent, from the perspective of subsequent <u>syntactic</u> operations. That is not something a morphological operation can do. As far as we can tell, this modularity issue is left unaddressed in Matushansky 2006, as well as in the subsequent literature that builds upon it.

We argue that M-MERGER can be better understood as a relabeling operation, and that this resolves the aforementioned modularity issue. We then show that the proposal explains how processes like ***noun-incorporation*** serve to circumvent the general requirement that extended projections be 'complete'. The mechanism we propose has as its natural consequence the adjacency effects associated with both head movement and incorporation.

Proposal: Following Chomsky 1995, we take syntactic nodes to be ordered pairs of the form <LABEL, CONTENTS>. (We reject Chomsky 2013, where labeling is part of Transfer to C-I, i.e., the semantic interface. The idea that there is a reliable mapping from syntactic labels onto *anything* on the semantic side is a dubious one; cf. "nouns are objects", "verbs are actions", etc.) We propose that M-MERGER amounts to a relabeling: after X merges in the specifier position of YP—and only if X is non-branching—the system can relabel X as in (2):

(1) movement of X to [Spec,YP]:
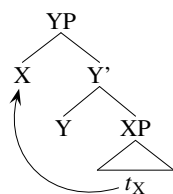
(2) M-MERGER(X, Y):

$$\langle \text{label}(X), X \rangle \Longrightarrow$$

$$\langle \text{Merge}\big(\text{label}(X), Y\big), X \rangle$$

That is: M-MERGER replaces the label of X with a complex object, formed by Merge of Y the previous label of X. (In the simple case, the original label would have been X; but the formulation in (2) allows for successive instances of head movement.) This recapitulates the idea of *conflation* (Hale & Keyser 2002, Harley 2004, 2013), i.e., uniting the categorial features of two successive heads in the clausal spine (see also Grimshaw 2000). In keeping with the literature on conflation, we assume that PF has access to these complex labels: PF must linearize all of the terms of a complex label in the same position, but that position can be any of the positions that *any of the terms* occupies. The choice between these possible positions will yield the kind of variation familiar from, e.g., verb placement in English vs. French. (In other words: all languages have V-to-T movement; it is just linearized differently in different languages.)

On this view, successive head movement (e.g. √/V-to-*v*-to-Asp-to-T) is simply spec-to-spec movement of a node with an ever-growing label. It looks (from PF) like movement of an ever-growing constituent, precisely because what is linearized is the label; but on these assumptions, morphology no longer needs to feed back into syntax. After M-MERGER (2), the element in [Spec,YP] and the structural head of YP both have Y's categorial features. Therefore, from the perspective of a higher head searching for Y's features, the element in [Spec,YP] will be the closest match. In order to be interleaved with M-MERGER, each such spec-to-spec step must be

maximally local, for reasons already articulated in Matushansky 2006—namely, that M-MERGER is contingent on c-selection.

Finally, we assume (with Gribanova & Harizanov 2016) that head movement to C is a fundamentally different phenomenon than the kind of "word-growing" head movement we see in the $\sqrt{}$ / V-to-v-to-Asp-to-T domain. It is movement per se, and does *not* involve M-MERGER (2).

Implications for noun-incorporation: There is substantial evidence that a less-than-complete extended projection cannot occur in syntax without special licensing; see, e.g., Grimshaw 2000. For example: in a language where full DPs can be distinguished from structurally-reduced nominals (NumPs, nPs, or NPs), the latter are subject to more stringent licensing conditions. In Mapudungun, structurally reduced noun phrases, which cannot host modifiers, incorporate into the verb (3). In Tongan, where structurally reduced nominals can host (some) modifiers but must front together with the verb, the result is an adjacency requirement ruling out prenominal modifiers (4b)—a requirement not found in normal VSO clauses (4a).

(3) Pedro ngilla-waka-y   (*tüfachi / *kechu / *küme / *motri-le-chi)
     P.   buy-cow-IND.3sgS (*this   / *five   / *good / *be.fat-STAT-ADJ)
     'Pedro bought (*this / *five / *good) cow(s) (*that was/were fat).'
                              [*Mapudungun; Baker 2009, Baker, Aranovich & Golluscio 2005*]

(4) a. Na'e tō   'e Sione 'ene (ki'i)   manioke (ki'i)
        PST plant ERG S.   his   (small) cassava (small)
        'Sione planted his small amount of cassava.'
     b. Na'e tō   (*ki'i)   manioke (ki'i) 'a Sione
        PST plant (*small) cassava   (small) ABS S.
        'Sione planted a small amount of cassava.'   [*Tongan; Ball 2005*]

The question is: what is the problem induced by structural reduction, and how does adjacency serve to solve it? Suppose that syntactic labels are subject to the following condition:

(5) For every label α, either: **(i)** α is a CAPSTONE LABEL; or **(ii)** at some point in the
     derivation, α is part of a complex label that contains a CAPSTONE LABEL.

The set of CAPSTONE LABELS will minimally include T(ense) and D(et). We also assume the following well-formedness condition (cf. Li's 1990 Proper Head Movement Generalization):

(6) M-MERGER(X, Y) is illicit if X is a CAPSTONE LABEL.

The conditions in (5–6) will be satisfied by any sequence of heads $x_1, x_2, \ldots, x_n$ in which each x_i undergoes successive head movement to x_{i+1} in the manner formalized above, such that $\{x_1, x_2, \ldots, x_n\} \cap$ CAPSTONE LABELS $\subseteq \{x_n\}$ — i.e., where x_n is the only CAPSTONE LABEL (if any) among the heads in question.

Suppose that x is a noun; since x is neither a T(ense) nor a D(et), it cannot satisfy (5.i). Its only option is therefore (5.ii). One way (5.ii) can be satisfied is if x is part of an extended nominal projection culminating in D(P). (Recall that this does not automatically entail that x will be linearized at the syntactic position occupied by D; see above.) Crucially, however, another possibility exists: if x (or a complex label containing x but no CAPSTONE LABEL) M-MERGES with the verb, then x will end up satisfying the condition in whatever manner the verb does—e.g., by ultimately forming a complex label that also includes T(ense). This way of satisfying (5) will necessarily result in verb-noun adjacency because, regardless of where they are linearized, complex labels are sets comprised of labels only, and contain no phrasal material.

Conclusion: Replacing Matushansky's (2006) mixed syntax/morphology approach to M-MERGER with one based on *relabeling* allows us to maintain the central desiderata of the former proposal, while delivering an improved understanding of the role of extended projections, and of how *incorporation* interacts with this system.