

Multiple Transfer in Service of Recursive Merge: Pied-Piping Genuinely Eliminated Hiroki Narita / Harvard University

Feature percolation is a widely assumed but rather ill-understood mechanism which allegedly projects features of lexical items (LIs) onto a phrasal node (a relatively local instantiation of which is ‘label/projection’). This paper is an attempt to argue that the recent development of the multiple Transfer model makes it possible for the first time to accomplish a theory of FL without ‘feature-percolation’, while still maintaining an empirically better account of a number of linguistic phenomena. The proposal will genuinely eliminate the notion of ‘pied-piping’ and XP-movement altogether from the theory of UG (in line with, but taking a more radical step than Cable 2007).

LIs are computational atoms of Syntax, each one of which is associated with “a feature that permits it to be merged,” called an *edge-feature* (EF) (Chomsky 2008). Since “the fact that Merge iterates without limit is a property at least of LIs—and *optimally, only of LIs*,” (*ibid*, emphasis mine), EF cannot percolate to any Merge-result set, if we assume no feature-percolation mechanism. No phrase can have an EF, *thus no phrase can utilize its EF to trigger Merge*. The consequence of this is that all instances of Merge must take an LI as at least one of its inputs (utilizing its EF as the locus of Merge), merging it with another syntactic object (SO). That is, all instances of Merge obey the form $\{H, \alpha\}$, where H is an LI with EF (Call this the *H- α schema*).

The H- α schema immediately predicts that *no two XPs can be merged*. I argue that this is a sustainable conclusion (presumably only) in Chomsky’s (2000, 2008) multiple Transfer model, where Syntax interfaces with LF and PF multiple times. Each application of Transfer strips off the complement of a designated LI (called a *phase head*) from the derivational workspace to LF and PF. I specifically propose that Transfer (and only Transfer) can ‘peel off’ the phase-interior domain from the phase head LI, rendering the phase a minimal ‘ X^0 ’ while the occurrence of the Transferred complement is still anchored to the phase head (let us mark such a derived ‘ X^0 ’ phase head with a superscript T , without assuming any ontological status for this informal notation itself). For example, consider the case of external merger of an external argument nP and $\{v, \{V, Obj\}\}$. The phase head v can eliminate its complement from the workspace by Transfer, so at the point of being merged with nP , v^T can utilize its EF again, in conformity with the H- α schema ($\{v, \{V, Obj\}\} \rightarrow v^T \rightarrow \{v^T, nP\}$). This discussion shows that a phrase XP can be merged to another phrase YP only when XP can constitute a phase, whose head LI can Transfer its complement and become X^T .

In the same vein, the H- α schema predicts that *only $LI^{(T)}$ s can undergo internal Merge*, since internal Merge is always to the edge of some XP (containing an occurrence of the moving element). Thus there is no such thing as pied-piping (in line with Cable 2007). This theory immediately explains the empirical generalization that only phases can undergo internal Merge (as shown in, e.g., (1)), since only phase heads can Transfer their complements before movement (anchoring the occurrence of their Transferred complement).

- (1) a. It is [${}_{CP'} = C^T$ C PRO to go home (every evening)] that John prefers.
b. *It is [${}_{TP'} t_{John}$ T to go home (every evening)] that John seems.
- (2) a. The barbarian’s destruction of the city, I witnessed.
b. *Destruction of the city, I witnessed the barbarian’s.

In our terms, what undergoes internal Merge in these examples is not literally a phrasal XP, but only an X^T anchoring the occurrence of its ‘ex-sister/complement’. See also Cable (2007) for an argument that many instances of pied-piping (by, say, Wh) should be reanalyzed as movement of a separate phase head (Q) anchoring an occurrence of its ex-complement.

The fact that non-phasal XPs (TP, NP) cannot move receives a straightforward account, too, given that non-phases cannot execute Transfer because of their syntactic/semantic incomplete-

ness (see Chomsky 2000, 2008). The other side of the same coin will be the prediction that only non-phase heads can undergo simple X^0 -movement. There exists V-to-v-movement and T-to-C-movement, but no C-to-V movement, for example.

Another consequence of the proposal is that all moved ‘XPs’ (which are actually X^T s) exhibit island effects, since all moving X^T s must have Transferred their complements, deriving the freezing effects widely attested in natural languages. See Boeckx (2008:ch.5) for much relevant discussion on the robustness of the freezing effects on nontrivial chains. For example, the CED effects on dislocated subjects are derived. However, this theory also allows an element to be extracted from an unmoved in-situ subject, as shown by, e.g., the contrast in (3) (see Chomsky 2008, Gallego 2007).

- (3) a. Which candidate were there [posters of t] all over the town?
 b. *Which candidate were [posters of t] all over the town?

The cases which apparently violate the freezing effects, for instance movement of $Y^{(T)}$ from a dislocated ‘XP’/ X^T (... Y^T ... $[XP...t_{Y(P)}...$... t_{XP}) are to be attributed to either a ‘resumption’ strategy (see Boeckx 2008) or a derivationally prior movement of $Y^{(T)}$ from a yet unmoved ‘XP’ ($[XP...Y(P)...] \rightarrow Y^{(T)} [XP...t_{Y(P)}...] \rightarrow ...Y^T...X^T...t_Y t_{XP/X^T}$), accounting for the generally costly nature of such movement.

Furthermore, our theory readily captures an asymmetry in coordinate structures. Consider the merger of two coordinand XPs, mediated by a Co(ordinate-marker) ($\{XP1, \{Co, XP2\}\}$). Our theory predicts that in order to Merge XP1 to $\{Co, XP2\}$, Co must Transfer its complement (XP2), in order for its EF to allow another application of Merge ($\{Co, XP2\} \rightarrow Co^T \rightarrow \{XP1, Co^T\}$). I claim that this is the only possible derivation for any coordinate structure, given the standard assumption that some Paralellism constraint requires that all the Merge-mates of one and the same Co must be of the same category. If so, all but the initial coordinand must be invisible for Agree from above (due to the P[hase]I[mpenetrability]C[ondition], Chomsky 2000), as borne out by data like (4).

- (4) a. There was [[a man in the bathroom] and [a cat/two cats in the kitchen]].
 b. *There were [[a man in the bathroom] and [a cat/two cats in the kitchen]].

Moreover, asymmetric extraction (if any) is predicted to be possible only from the initial coordinand, again an apparently correct prediction.

- (5) a. How much_i can you [[drink t_i] [and [still stay sober]]]? (Wh-movement)
 b. *How much_i can you [[stay sober] and [still drink t_i]]?
 (6) a. We_i can’t [t_i eat caviar] and [him/*he (eat) beans]. (subject raising)
 b. *He_i can’t [we/us eat caviar] and [t_i (eat) beans].
 (7) a. Bob_i dusted_j [$t_i t_j$ the bookcase] and [Mary t_j the windowsill]. (gapping)
 b. *Mary_i dusted_j [Bob t_j the bookcase] and [$t_i t_j$ the windowsill].
 (8) a. A student wants [every professor_i to be on his committee] and [likes him_i]. (QR)
 b. *A student [wants him_i to be on his committee] and [likes every professor_i].

The overall discussion points to the conclusion that the multiple Transfer model, and presumably only this model, can exercise recursive Merge without an extraneous stipulation of feature-percolation. Or, an even more intriguing possibility is that *the lack of feature-percolation in FL necessitates multiple Transfer (recurring interfacing)*, laying down a conceptual foundation for phase-by-phase cyclic derivations, with pied-piping genuinely eliminated.

References

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