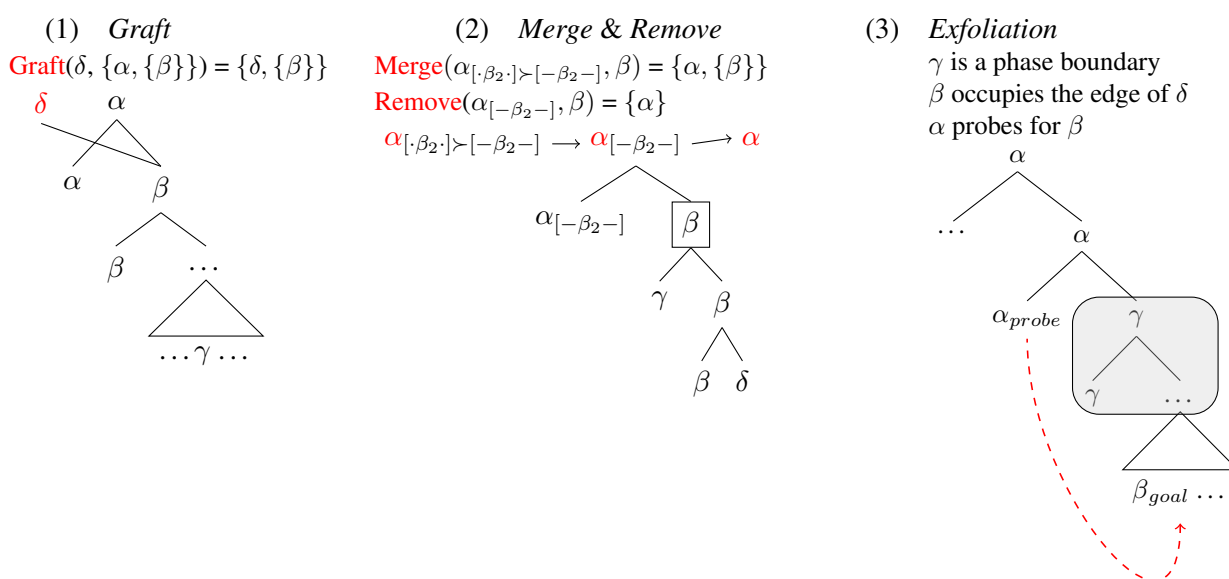


Graft, Remove or Exfoliate? Towards a theory of structure reduction.

Proposal. Syntax is endowed with a structure “undoing” process based on a *graft* operation. *Graft* is defined as special case of *merge*. The macroscopic output of *graft* is an apparent counter-cyclic merge to a lower projection, “cutting out” a portion of an already existing structure. Formally, this is achieved by allowing *merge* to select the complement, rather than the label/maximal projection of a syntactic object. This is illustrated in (1), where the head δ enters the derivation and removes part of it.

Background. Recent research has focused on operations that lead to the inverse result of *merge*, namely removing or making invisible/transparent portions of a previously built structure. One proposal is *Remove* (Müller, 2017), an operation that introduces features whose task is to selectively delete portions of existing structures. The operation is rigidly constrained by conditions that obey strict cyclicity, as illustrated in (2). Another proposal is *Exfoliation* (Pesetsky, 2019), which removes active features from a previously built structure so that a domain that was previously opaque to movement, becomes accessible to otherwise blocked operations, as in (3).

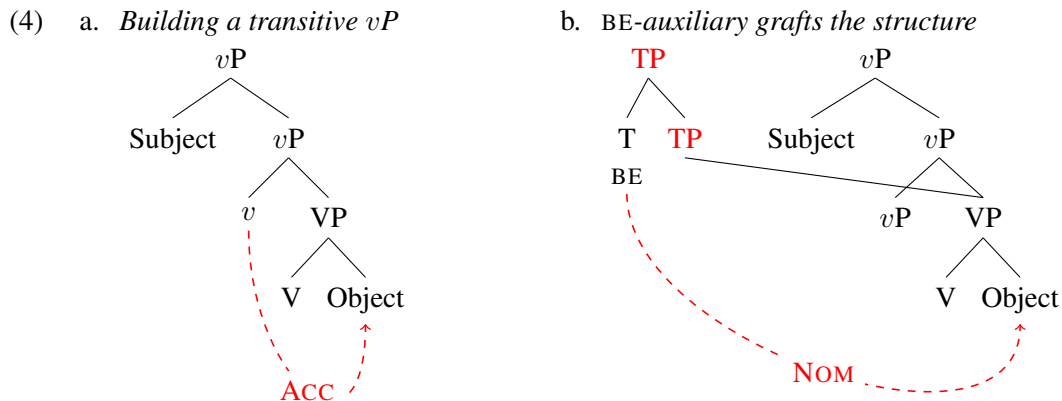


Empirical domain. *Remove* has been proposed to account for a series of phenomena of German syntax like (short and long) passive, restructuring, applicatives and complex prefields (Müller, 2017). *Exfoliation*, on the other hand, has been proposed to handle the derivation of raising to object (i.e., ECM) and raising to subject constructions as the result of an EPP feature on the embedding predicates (Pesetsky, 2019). The proposal also covers for passive and restructuring (in German), and more generally the finite-infinitival alternation of (English) sentential complements. In this paper, I will show that *graft*:

- has the same empirical coverage of *Remove* and *Exfoliation* (i.e., it accounts for the same phenomena);
- captures the transitive vs. middle alternation Bassac and Bouillon (2002) without incurring in “looking ahead” problems;
- covers for the alternation of center embedded vs. extraposed sentential complements in Italian Sign Language (Geraci and Aristodemo, 2016);
- can be used to explain *root infinitives* in children speech (Rizzi, 1994);
- captures the preference of children to use passive to bypass object relative clauses (Belletti and Rizzi 2010, i.a.);
- supports the “pruning” effect of aphasic patients (Friedmann and Grodzinsky, 1997).

Illustration: (Italian) Passive. In what follows, *vP* and *VP* are used as cover labels for a more articulated structure (see Gehrke and Grillo 2009 i.a. for a concrete proposal about the structure involved in passives). In parallel to unaccusative verbs, whose syntax either projects a defective *vP* or does not project *vP* at all (Chomsky, 2001), I assume that there are auxiliaries that select for defective *vPs* or

for VP directly. This is the case of the Italian BE-auxiliary. The derivation of a passive structure in (4) proceeds straightforwardly: First the full *vP* of the predicate is generated like in transitive structures (including the position of the agent/subject); Second if BE-auxiliary is present in the numeration (rather than a HAVE-auxiliary), it selects the VP and not the *vP* as its complement, cutting out both *v* and the subject (i.e., the *phase* head is removed). The underlying object receives case twice: the ACC case is overridden by NOM assigned in the TP domain. The subject position in spec,*vP* is filled by PRO (Collins, 2005) and after *graft* remains syntactically inert. The rest of the derivation then proceeds as in standard approaches (Baker et al., 1989). This proposal shares with Manzini (2017) the fact that *smuggling* is an unnecessary operation to derive passives and that *by*-phrases are treated as PP adjuncts, although merged after *graft*. Passive are thus derived via auxiliary grafting the structure, avoiding look-head.



Discussion. *Graft* is formally an instantiation of *merge* and for this reason does not require particular stipulations to be introduced or motivated. It is simpler than other “undoing” operations in that it does not require interspersing “subtraction” features (in *ad hoc* order), as in Müller (2017); and it does not produce a feature “impoverished” structure as in Pesetsky (2019) (& contra the inclusiveness condition, Chomsky (2001)). It shares with previous proposals a minimal amount of lexical specification (e.g., raising and unaccusative predicates must be lexically specified), and with Müller (2017) the fact that specifiers are syntactically active before being cut out by *graft*. Its computational simplicity makes it a good alternative resource to save an otherwise too complex derivation in sensible populations as in the case of object relatives in children. Specifically, while Belletti and Rizzi (2010) correctly identify passive + subject relative as a potentially simpler alternative to object relatives, they have to stipulate that smuggling is somehow less complex than object relatives. Under the current proposal such stipulation is not needed anymore. Root infinitives can be similarly derived: These structures are created by CPs *grafting* higher portions of the IP structure in developing populations, as the result of either limited (memory) resources or (parametric setting of) a learning curve. This reasoning easily extends to wh-extraction & agreement facts documented in aphasic patients (Friedmann and Grodzinsky, 1997). These patients rely on a graft derivation because it is computationally simpler.

Extensions. As a fundamental operation, *graft* is expected to interact with other merge types (e.g., multidominance Citko 2011, possibly a special case of *graft*) and with processes that depend on merge (e.g., labelling Cecchetto and Donati 2015, possibly *graft* intervening before labelling has marked the phrase).

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