On unlabeled projections

This paper investigates syntactic properties of unlabeled syntactic objects with special attention paid to Labeling Algorithm (LA) (Chomsky 2013). It will be argued that there are at least two different unlabeled projections in the narrow syntax. In particular, the unlabeled projection created by having specifiers cannot undergo movement whereas the one created by having adjuncts can. The discussion of this paper will show that the generalization in shown in (1) (cf. Hornstein and Nunes 2008; Bošković 2018) requires modification.

(1) Unlabeled elements cannot undergo movement.

Chomsky (2013) proposes a theory of labeling which allows unlabeled objects during the derivation, though not in final representations. Due to page restrictions, we will only focus on the cases where two non-minimal projections merge. For a syntactic object {XP,YP}, a syntactic labeling can be implemented by prominent feature sharing or traces, with an assumption that traces are ignored for LA. Under this theory, there are two instances of apparent unlabeled projections that need to be resolved at the interface. The first case is the syntactic objects (SO) created by successive cyclic movement. The second case is SO created by adjunction. The distinction cannot be made in the original version of LA unless we assume that adjunction is an instance of pair-merge, which has been argued against in a number of papers (Hunter 2015; Oseki 2015). Here, we will simply ignore the option of pair-merge, however it will be discussed in details in the presentation.

Let us begin with the syntactic behaviors of SO created by the successive cyclic movement. Bošković (2018) argues that LA paired with the generalization (1) can deduce a number of syntactic phenomena. Consider (2) where the wh-element is moved out of subjects. Without invoking the subject condition, he argues that (2) is the case of (1).

(2) ?* I wonder who_i [friends of t_1] hired Mary.

Given the phase theory of movement and the subjects are phases (DPs), whatever moves out of the subject first moves to its edge. This happens before the subject moves from its base-position *v*P given the cycle. As illustrated in (3), the merger of *who* and DP is unlabeled; the ungrammaticality is predicted. The merger is inept for movement.

(3) $[_{IP}$ I … $[_{?}$ *who*$_i$ ***[$_{DP}$ subject(friends of t$_1$)]]***$[_{vP}$ v $[_{VP}$ …]]] (Bošković 2018: (18))

The generalization in (1), however, faces challenges when it comes to adjuncts. In LA, labeling is not provided for the syntactic objects created by adjunction, given that there is no feature-sharing option. It is then predicted that SO created by adjunction cannot undergo movement. However, there are number of cases where they can undergo movement. Consider (4) which contains VP-movement. In the traditional adjunction, the SO created by adjunction will be labeled as VP. However, under LA, only multiple unlabeled SOs are created, as illustrated in (5).

(4) a. eat the cake he did in the yard.
b. eat the cake in the yard he did.
c. *eat he did the cake in the yard (Hornstein and Nunes 2008:(21))

(5) $[_{?}$ $[_{VP}$ eat the cake] in the yard]]

As discussed in Hornstein and Nunes (2008), VP plus any number of adjuncts can undergo movement; *eat the cake* is VP and so is *eat the cake* plus any of the adjuncts. The ungrammaticality of (4c) simply means that *kick* is not VP. The pattern in (4) poses a number of issues for LA. The

addition of adjuncts simply puts unlabeled projections on top of VP, yet they are mobile (4b) as well as they can be parted (4a). The mobility of the unlabeled projection in (4) thus raises an issue for the generalization in (1). The distinction here between in (2) and (4) is the Spec/Adjunct distinction. However, LA cannot distinguish SOs created by successive cyclic movement and adjunct because they are all unlabeled projections.

One of the alternative accounts to this matter is to argue that adjuncts are pair-merged. However, this view has been challenged by a number of authors (Oseki 2015; Bošković 2018). They provide evidence where adjunct itself undergoes syntactic movement. One of the apparent examples of adjunct movement is given in the Serbo Croatian (6). Here, the adjunct that modifies the adjunct undergoes the so-called deep Left-branch extraction (Talić 2013; Bošković 2018). The grammaticality of (6) thus shows that we cannot simply argue that they are pair-merged.

(6) Izuzetno$_i$ se on [t_1 loše] ponašao?
exteremely is he badly behaved
'He behaved extremely badly.'

Yoo and Park (2020) also show that Korean sentences like (7) (cf. Adjunct free ride effect (Sohn 1994; Boeckx and Sugisaki 1999)) proves the mobility of an unlabeled SO. While Korean generally does not allow adjunct scrambling (7a), this is allowed if it is accompanied with an argument (7b). Sohn (1994) convincingly argues that the moving elements *iywuepsi ku ilonul* form a constituent via adjunction prior to scrambling. Assuming that he is correct, the syntactic object *iwyuepsi ku ilnul* cannot be labeled by any means given that they are an adverb and an object. Thus, the adjunct free ride cases are an instance of the unlabeled SO movement, showing that the generalization in (1) is not correct.

(7) a. *iywuepsi$_1$ Chelswu-ka Yenghuy-ka t_1 ku ilon-ul
without.reason Chelswu-NOM Yenghuy-NOM the theory-ACC
mit-nuntako sayngkakha-nta.
believe-COMP think-DCL
'Chelswu thinks that Yenghuy believes the theory without any reasons.'
b. **iywuepsi$_1$ kuilon-ul$_2$** [Chelswu-ka [Yenghuy-ka t_1 t_2 mit-nuntako] sayngkakha]-nta.

Based on the examples discussed above, we argue that LA needs to be modified in that it distinguishes SO created by adjunction from SO created by successive cyclic movement. It is untenable to discard the generalization (1), given that the theory of LA still assumes the phase theory of movement. Chomsky (2000, 2001) argues that only phases can undergo movement (see also Matushansky 2005; Rackowski and Richards 2005; Cheng 2012; Legate 2014; Harwood 2015). As noted in Bošković 2018, being a phase is closely linked to the generalization in (1), since being a phase means that it need to be labeled. Alternatively, we propose that specifier/adjunct distinction is motivated in the unlabeled projections. The unlabeled SO with non-agreeing specifier will be treated differently from the unlabeled SO with adjuncts. The minimal pair to this matter will be found in the puzzling immobility of V-2 clauses in German (see Webelhuth 1992, Wurmbrand 2014, Homberg 2015). The gist of the analysis is as follows. V-2 clauses in German can choose any element for their SpecCP position, which means that there is no feature-sharing option of labeling, However, in contrast to (7), V-2 clauses cannot undergo movement. The clear cut here is the adjunction/specifier distinction. Therefore, the unlabeled projections need to be distinguished by whether they are created by having specifiers or adjunction.