The EPP and Subject Extraction

Recently, it has been claimed by Holmberg (2000) and Landau (2007), among others, that the EPP is in fact a condition imposed by the PF interface. This paper aims to support this position by examining the interaction between the version of the EPP so conceived and subject extraction by A’-movement. In particular, I will demonstrate that given this conception of the EPP, so-called that-trace effects, illustrated in (1), receive a natural explanation under the probe-goal system invented by Chomsky (2008). In so doing, I follow Hasegawa (2005) in characterizing the EPP as something like the following:

(i) The EPP feature of T must be morpho-phonologically materialized. There are at least two ways for T to be materialized: either it manifests itself with rich agreement morphology or its specifier is occupied by an overt phrase. The former way of materialization allows a null subject to appear in Spec-TP in so-called pro-drop languages. In those languages that do not have such a rich agreement manifestation, on the other hand, the latter way of materialization is mandatory. Thus, in English, overt material must appear in Spec-TP to satisfy the EPP in question.

Given this characterization, a question arises as to how the EPP is satisfied in those cases that involve extraction of subject, since superficially there is no overt element occupying the Spec-TP which was passed by the moved subject. I first argue, following Abe (1997) and Bošković (2002), that the EPP is not effective in infinitival clauses in English and that successive-cyclic A-movement is not forced by the EPP but rather by an economy condition such as Minimize Chain Links, so that the fact that intermediate Spec-TP positions passed by a raising subject are empty has nothing to do with the EPP given in (i). As for A’-movement of subject, on the other hand, those cases involving that-trace effects, illustrated in (1), are relevant for the EPP. I propose that (i) can be satisfied derivationally, just as is the ECP invented by Lasnik and Saito (1984) by way of the mechanism of γ-marking. Suppose, following Holmberg (2000) and Abe (2002), that when movement of an element α takes place, only relevant features of α are moved. Thus, according to this theory, overt and covert movements are distinguished by whether the PF feature of a chain is located at its head or tail. With these assumptions as well as the probe-goal mechanism of Chomsky (2008), the embedded CP phase of (1a) has the following derivation:

(ii) a. C[T, e T [vp who[PF] [vp leave]]]
b. [cp, who C[T, e T [vp who[PF] [vp leave]]]]

In this step, who is moved into the Spec-TP and Spec-CP simultaneously, due to the parallel operations of Agree and Move triggered by the C head as well as the T head that inherits relevant features from it, as assumed by Chomsky (2008). Given the EPP characterized in (i), the PF feature of this element must reside in its occurrence in the Spec-TP, as indicated in (iib), but this makes it impossible to undergo further “overt” movement from this stage, since the TP is invisible from the next higher phase level due to the Phase Impenetrability Condition (PIC), which disallows any element inside the complement of a phase head to undergo any operation at the next higher phase level, and hence cannot move the who-occurrence carrying its PF feature. This explains why (1a) cannot be derived legitimately.

The present theory gives at least three significant consequences. First, it explains the fact that pro-drop languages do not exhibit that-trace effects, as exemplified by such a Spanish sentences as (2), since T is materialized by way of rich agreement morphology, so that in such a derivation as in (ii), the PF feature of who can be carried by the one in the Spec-CP, and hence it can undergo further “overt” movement without violating the PIC. Secondly, the present theory explains the grammaticality of such a sentence as (3), as noted by Culicover (1993), since the adverbia! for all intents and purposes can satisfy the EPP by substituting for the occurrence of who in the Spec-TP, so that again the PF feature of who does not need to be carried by the one in the Spec-CP at the embedded CP phase level, which then allows who to undergo further “overt” movement. Thirdly, if the present theory of EPP and movement is correct, it gives support to the so-called non-vacuous movement hypothesis, according to which in such a wh-question as (4), who does not move to Spec-CP but rather stays in Spec-TP. This is because in such a case, who must be spelled-out in Spec-TP according to the EPP characterized in (i), even though it moves “covertly” to the above Spec-CP.

I finally suggest that the grammaticality of sentence (1b) follows from a relativized version of the PIC according to which an edge relevant for this condition is defined in terms of the geometrical arrangement of elements relative to the overt phase head, so that even an element occupying Spec-TP counts as an edge if there is no overt head in the above CP. Given this new definition of the PIC, the who-occurrence in the Spec-TP in (iib) can be regarded as an edge of the C-T phase level in the case of (1b), since the phase head C is realized as empty, and hence it is accessible to the operations applying at the next higher phase level. As a consequence of this characterization, I argue that in such a case as (1b), a wh-subject does not need to stop by the immediately above Spec-CP.
Examples:
(1) a. *Who do you think that left?
   b. Who do you think left?
(2) Quién creiste que vio a Juan?
   *Who do you think saw Juan?*
(3) Robin met the man who, Leslie said that for all intents and purposes \( t_i \) was the mayor of the city.
(4) Who left?

References