Squibs

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The Diehard Extended Projection Principle

Ever since it was originally proposed by Chomsky (1981, 1982), the Extended Projection Principle (EPP) has puzzled at least one full generation of linguists.[1] Originally the principle stipulated that finite clauses (in English at least) must have a grammatical subject. The stipulation may furthermore be satisfied in a number of ways – for instance, by inserting an expletive, raising a thematic object DP, having the thematic subject occupy that position, inserting a locative phrase, or even by head movement. An even more mysterious generalization emerged later, which required that the specifier positions of functional heads of *any type* may be in need of filling, optionally or obligatorily (Chomsky 2000).[2]

Faced with this sort of descriptive hodgepodge, many linguists have tried to explain it away either by means of reducing it to something that makes more sense (Brattico & Huhmarniemi 2006; Martin 1999; Holmberg 2000; Moro 2000; Rosengren 2002) or by pulverizing the EPP from the theory of grammar (Grohmann, Drury & Castillo 2000; Bošković 2002; see Landau 2007 for a recent summary). At any rate, while a substantial volume of controversy has evolved around this matter, the Principle itself has proven resistant. Thus, the "mysterious property EPP (...) has been an annoying problem ever since it was originally formulated" (Chomsky 2008: 156).

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[1] I will use the following abbreviations in this article: EPP = Extended Projection Principle; GEN = genitive case; phi = phi-features like number, gender and person; PRT = partitive case; SG = singular number.

[2] A reviewer of this article points out, correctly, that this generalization follows if the EPP is reinterpreted as a feature, not as a principle of grammar.

In this squib, I would like to argue that the reductionist approaches are futile; instead, as suggested by Chomsky (2000), functional heads arrive to the derivation as irreducibly marked for the EPP diacritic that requires their Spec to be filled. But beyond that, there is no further logic. In other words, we have to learn to live with the EPP as an irreducible quirk of the human ways of speaking.

As a preliminary to our argument, we need an uncontroversial grammatical prism to recognize the presence/absence of the EPP itself. The following two conditions below (1a–b) will achieve this for us. Note, however, that we will not be giving the necessary and sufficient conditions for EPP itself, only certain overt characteristics which will allow us to detect the EPP.

We begin from the fact that when a functional head H has the EPP property, it triggers movement to Spec-H. In one incarnation, that element is a full DP. It may well be something other than a DP (Holmberg 2000; Alexiadou & Anagnostopoulou 1998), but certainly if it is a DP we have minimized the risk of misdiagnosis.

Second, in several cases the EPP is correlated with Agree in the sense of Chomsky (2000, 2004), such that the Case feature of the moved element and the phi-set on the target head H change as a function of the EPP. EPP/Agree may not need to be constitutively tied to each other, but it nevertheless adds credibility to the claim that H has the EPP property if filling of Spec-H comes with full Agree.[3] Note that it is for this reason that many of the reductionist approaches to the EPP rely on Case and/or phi-Agree. Let us therefore stipulate that in addition to DP-movement to Spec-H, we would like to see Agree(H,DP) as well (Condition 1b below). In summary, I propose looking for the following two properties:

(1)   Conditions on EPP
       A functional head H can be suspected of having the EPP property if
       a. H triggers DP-movement to Spec-H,
       b. Agree(H,DP) takes place (Case valuation for DP and phi-valuation for H).

Note once more that I do not wish to imply that (1a–b) constitute a definition for the EPP; rather, they deliver a conservative method for recognizing it, whatever its underlying implementation. Some instances of

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[3] Landau (2007) proposes a generalization according to which Case- and phi-features constitute only one type of "anchor features" on which the EPP may dwell, like a parasite.

EPP may violate these conditions, as they sometimes do,[4] but clearly if we have something that satisfies (1a–b) we have at least minimized the risk of false positives. I will also hold that if some functional head H fails all these tests, then the chances are that it does not have the EPP feature.

With an EPP gauge now at hand, let us look at the behavior of Finnish adpositions. Here we look at three varieties of Finnish adpositions that can be described as follows (Manninen 2003; Vainikka 1989).[5] In the first group, there are adpositions which behave similarly to the English equivalents. They involve a particle-like adposition (or preposition) followed by a DP-complement that takes the object Case, the partitive (Vainikka 2003). Example (2) illustrates this.

(2)   *kohti   taloa*
       towards house.PRT
       'towards a house'

In the second group, we have adpositions, which take an overt DP-argument in (what looks like) the Spec-P position. The DP-argument takes the genitive Case, and it bestows full phi-features to the adposition (3). In Finnish a prehead DP argument of an adposition can therefore agree with the adposition in full phi-features. The DP-argument cannot normally occur in a postadpositional position (4a) and it can never take the object partitive Case (4b).

(3)   *minun   kanssa-ni*
       I.GEN   with-1SG
       'with me'

(4)   a. *kanssa-ni   minun*
         with-1SG   I.GEN

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[4] For one, there are many ways in which EPP can presumably be implemented without accompanying Agree (Collins 1997; Holmberg 2000; Miyagawa 2001), successive-cyclic movement being the prime example. This violates condition (1b). Second, some authors have argued that the EPP can be satisfied via head movement (Alexiadou & Anagnostopoulou 1998). This violates condition (1a) in the sense that then there is no DP that is moved to Spec-H.

[5] A reviewer points out that similar facts are attested in many other languages, e.g. Dutch, German or Afrikaans.

b. *kanssa-ni*   *minua*
      with-1SG   I.PRT

The third category contains expressions which allow both strategies.

(5)   a. *lähellä*   *minu-a*
          near   I-PRT
          'near me'

b. *minun*   *lähellä-ni*
      I.GEN   near-1SG
      'near me'

Notice, in particular, that (5a–b) are synonymous. In addition, these PPs have virtually the same syntactic distribution: whenever one can occur, so does the other.

There is a logical connection between the third group and the first two groups. The third group appears to be a disjunction of the other two groups. This leaves us with a binary choice of (2) or (3). That binary choice is between two types of behaviors: one, in which the argument of the functional head remains stationed in its complement and there is no Agree; and another, in which the argument occurs at Spec-H and is accompanied by Agree. According to conditions (1a–b), the first characteristic satisfies -EPP behavior while the second characteristic satisfies +EPP behavior.

As far as descriptive adequacy is concerned, the hypothesis that adpositions fall into three groups – +EPP, -EPP and ±EPP – leaves very little room for complaint. Since this behavior profile is not restricted to adpositions (Chomsky 2000), it gains independent support that is hard to resist. Yet, the descriptive victory comes with a difficulty in the explanatory agenda.

At the heart of the problem lies the observation that the pair (5a–b) in particular shows that the ±EPP constitutes a primitive choice that the grammar must make for its functional head(s), such that the choice affects necessarily neither the distribution nor the semantics of the PP. It is a primitive and phrase-internal affair with no function, no purpose, and nothing to offer to, or gain from, its grammatical surroundings. It may be lexicalized, as is the case with the first two groups, or it may be just grammaticalized but not lexicalized, as is the case with the third group. Either way, it represents lexical entropy.

Suppose, for instance, that we propose to reduce this behavior to the theory of Case by positing that DPs move to the Spec-P in order to "check" the genitive Case. Still each adposition needs an irreducible mark that determines whether it allows a genitive DP in its complement; this is just the same EPP again, cloaked in different terminology.

Could we navigate out of this problem by proposing reduction to something extra-linguistic? There may exist a neurobiological or general supramodal cognitive rationalization for these facts, but since a binary decision has to be made for each adposition, either in the lexicon or freely during the derivation, we are always left with the to-EPP-or-not-to-EPP decision.

Could it be that something in the grammatical context of the PP causes the EPP behavior, as argued for Finnish by Brattico & Huhmarniemi (2006) and Brattico & Saikkonen (2010)? It would be hard to demonstrate any effect of this type, it seems, as the distribution of the two PPs – one with EPP and another without – is identical. (On the other hand, bear in mind that this is not to say that EPP is never correlated with a change in grammatical context; the present data shows that such correlations cannot constitute the EPP.)

One possibility is to accept the conclusion that the EPP behavior must be specified lexically, but deny the claim that it is irreducible or unexplainable. This might be a viable alternative, because one could still maintain that the EPP behavior is an instance of some mechanism or requirement that has a broader application in grammar. Suppose, for instance, that it is speculated to be part of linearization. We could then conclude that while functional heads must be marked idiosyncratically by a feature determining whether their specifier must be filled, such marking has a much broader application. We would be claiming that the "EPP features" are not just a privilege of functional heads, but found from many other places and in many guises. On the other hand, even under this proposal the original EPP property – namely, that the specifiers of certain functional heads must be filled, optionally or obligatorily – would remain an irreducible and annoying quirk. Whether some functional head has this property cannot be derived, and hence justified, from any independent property or principle, and it is this difficulty that linguists have been trying to solve by invoking various reductive strategies.

There is much literature and speculation that the EPP effects can be reduced to independently motivated semantic properties. Some EPP operations do have clear semantic effects, mostly certain surface effects

that have to do with definiteness, scope, or information structure. The adposition data speaks against the view that EPP *reduces* to a semantic mechanism. As the adpositions in the third category exhibit mixed behavior, we can examine whether ±EPP indeed has an effect on semantic interpretation. It does not have any effect, as the expressions in (5a–b) are synonymous (see the translations). In other words, it does not necessarily matter in terms of semantic interpretation if the argument of the adposition is in Comp-H or in Spec-H(+Agree).[6] I suspect that much of the same could be true of many other functional heads, such as Spec-T. This vindicates the intuition that has surfaced in so many guises over the years in connection with the EPP theorizing – namely, that the EPP constitutes a grammatical quirk that lacks direct participation in semantics.

What else is there to try? Perhaps nothing. The EPP is not disappearing from linguistic theorizing. Where does that lead us?

Of course, it is important to know that we have reached the bottom of things. We learn that EPP may be optional or lexically specified. I think this too was always suspected to be the case. The finite tense node in English, for instance, behaves like the adpositions in the second group, both being lexically specified as +EPP. But this is not a predetermined outcome; a functional head may have a negative specification for its EPP, or it may be freely associated with either choice during lexical insertion and/or derivation. This leaves considerable room for description and explanation of word order facts and agreement patterns, both cross-linguistically as well as within a given language. It may be a liberation that leads to insights regarding other parts of grammar (Landau 2007; Holmberg 2000).

And the prospects for genuine explanation are not as gloomy as they first seem. What these facts suggest is that the EPP is irreducible; to begin with it does not force us to make the same conclusion for Agree. The correct direction of a putative reduction between EPP, Case and phi-features, if we suspect that such a reduction is desirable in the first place, must consider taking the EPP diacritic as a primitive property and deduce the rest from a theory which includes EPP in its axiom block. This may help to disambiguate the explanatory labyrinth leading towards the correct

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[6] There is evidence that, particularly regarding A-bar movement, fronted constituents are associated with topic/focus interpretation (Huhmarniemi 2009, 2010). This may well be true of Finnish adpositions as well, but it appears not to be true of the examples discussed here. Therefore, it may be that such operations sometimes have *semantic consequences*, but not *semantic causes*.

theory of such matters. And, as pointed out by a reviewer, we can pose further questions concerning the EPP, even if it were irreducible: why does it trigger overt, and not covert, movement; why does it involve case alternations and phi-agreement; how is it implemented; and how is the mechanism constrained?

Acknowledgements

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