New Definition of Edge and its consequences for PBC

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I argue that only the highest edge is available for Move/Agree (henceforth, HEMA) (Rackowski & Richards 2005 (RR), Bošković 2014 (B), Wurmbrand 2014). I give an additional evidence for this from Korean, providing a uniform account of a number of previously unrelated facts in these terms. This will also lead us to eliminate Proper Binding Condition (PBC) in the particular domain. I also provide a way of teasing apart RR's intervention effect approach to HEMA from B's PIC approach to HEMA.

The first evidence for HEMA involves Exceptional Case Marking Constructions (ECM). I assume the base-generation approach to the Korean ECM construction (Bruening 2001, Taguchi 2009, a.o.). When the ECM subject is base-generated in the embedded SpecCP, matrix *v* Case-marks it via Agree (Hiraiwa 2005) as in (1).

(1) [$_{vP}$ ***v*** [$_{VP}$ think [$_{CP}$ **Subj-ACC$_i$** C [$_{TP}$ T [$_{VP}$ … *pro*$_i$]]]]] (Taguchi 2009:(20))

Korean allows Long-distance scrambling (2a). However, it is disallowed in the ECM construction (2c) (Note that Korean does not have the Japanese double-o constraint)

(2) a. **kong-ul$_i$** J-ka [$_{CP}$ M-i **t$_1$** cal chanta-ko] sayngkakhanta.
ball-ACC J-NOM M-NOM well kick-C think
b. J-ka [$_{CP}$ **M**(-i/-ul) kong-ul cal chanta-ko] sayngkakhanta.
J-NOM M-NOM/-ACC ball-ACC well kick-C think
c. ***Kong-ul$_i$** J-ka [$_{CP}$ **M-ul** **t$_i$** cal chanta-ko] sayngkakhanta.
ball-ACC J-NOM M-ACC well kick-C think
'J thinks that M kicks a ball well.'

The ungrammaticality of (2c) follows from HEMA. The ECMed subject is base-generated in SpecCP. Movement of embedded object *kong-ul* 'ball-ACC' proceeds successive-cyclically via the embedded CP, tucking-in the lower SpecCP, in Richards' 2001 fashion. The object thus cannot move out of the CP given HEMA. The derivation is shown in (3). If the SUBJ moves to Spec*vP*, which is an option (see below), the object tucks in the lower Spec*vP*, hence again cannot move out given HEMA (4). (Note the traces are ignored under both RR's intervention and B's PIC approach to HEMA)

(3) *[$_{vP(phase)}$ [$_{vP}$ *v* [$_{VP}$ … [$_{CP(high\ edge)}$ SUBJ-ACC **[$_{CP(low\ edge)}$ OBJ$_i$** [$_{CP(phase)}$ C […**t$_i$**…]]]]…]]]

(4)*[$_{CP}$ [$_{CP(Phase)}$ C ..[$_{vP(}$high *edge)* SUBJ-ACC$_1$ **[$_{vP(low\ edge)}$ OBJ$_2$** [$_{vP}$ *v* [$_{VP}$[$_{CP}$ **t$_1$**[$_{CP}$**t$_2$**[$_{CP}$C …]]]]]]]]]

Hiraiwa (2010) observes that Raising to Object (RTO) constructions do not allow the remnant CP movement whereas Raising to Subject (RTS) constructions do. PBC can explain (5a), but it cannot explain the (5b).

(5) a. *[$_{CP}$ t$_1$ yepputa-ko] J-ka **M-ul$_i$** sayngkakhanta.
Pretty-C J-NOM M-ACC think
'J thinks that M is stupid.' **RTO / *Remnant CP movement**
b. **[$_{CP}$ t$_1$ yepputa-ko] J$_1$-ka** motu-ekey sayngkaktoyecita.
Pretty-C J-NOM everyone-DAT think.pass '
'J is thought to be pretty by everyone.' **RTS / ✓Remnant CP movement**

HEMA can explain the asymmetry in (5), hence it eliminates PBC. I assume the distinction between *strong* and *weak* phase (Chomsky 2001); transitive *v* is a strong phase, whereas passive *v* is a weak phase. In (5a), the matrix *v* is a strong phase, thus the movement targeting matrix CP must undergo successive-cyclic movement, as shown below.

(6)*[$_{CP}$ [$_{TP}$ J-ka [$_{vP(high)}$ *M-lul*$_1$ [$_{\mathbf{vP(low)}}$ CP$_{remnant}$ [$_{vP(strong)}$ *v* [$_{VP}$ V [$_{CP}$ t$_1$ [$_{\mathbf{CPremnant}}$]]]]]]]

The embedded subject *M* first undergoes movement out of the embedded CP, which creates the remnant CP. The subsequent movement of the CP tucks-in the lower Spec*v*P. The lower edge cannot move given HEMA, hence (5a) cannot be derived. For (5b), the matrix *v* is a weak phase, thus the matrix T can attract the embedded subject. The remnant CP can undergo scrambling to matrix CP, as shown in (7)

(7) [$_{CP}$ CP$_{remnant}$ … [$_{TP}$ *J-ka*$_1$ [$_{vP}$ *by everyone* [$_{vP(weak)}$ *v* [$_{VP}$ V[$_{CP}$ t$_1$ [$_{\mathbf{CPremnant\ldots}}$]]]]]

Korean Possessor Raising (PR) / ECM constructions can tease apart the intervention and the PIC analysis of HEMA. Consider (8). I assume *way* is base-generated in the embedded CP (Ko 2005), hence the embedded subject, which precedes it, is located at the CP edge.

(8) a. J-ka [$_{CP}$ [$_{NP}$ Mary-uy [$_{NP}$ ippal]]-i [$_{CP}$ way ppacyessta-ko]] sayngakhatni?
J-NOM M.-GEN tooth-NOM why fell.out-C think.Q

b. J-ka [$_{CP}$ **Mary-lul** [$_{CP}$ ippal-**i** [$_{CP}$ way ppacyessta-ko]]] sayngakahatni?
J-NOM M.-ACC tooth-NOM why fell.out-C think.Q

c.***?** J-ka [$_{CP}$ **Mary-lul** [$_{CP}$ ippal-**ul** [$_{CP}$ way ppacyessta-ko]]] sayngakahatni?
J-NOM M.-ACC tooth-ACC why fell.out-C think.Q

'What is the reason x such that J think that Mary's tooth fell out for x?'

For *Mary* to get ACC, it must Agree with the matrix *v*. Since the ECMed subject is base-generated in SpecCP, *Mary* is positioned in the edge of the edge of the CP phase. Hiraiwa 2005 shows that generally the edge of the edge of a phase is not accessible outside of the phase (9). This means POSS cannot get ACC in its base position, hence it must raise outside the NP to receive ACC (10).

(9) *[$_{vP}$ *v* [$_{VP}$ V [$_{CP(edge)}$ [$_{\mathbf{NP(edge\ of\ the\ edge)}}$ *Mary* [$_{NP}$ *ippal*]] [$_{CP}$*(phase)* C …]]]]

(10) [$_{vP}$ *v* [$_{VP}$ V [$_{CP(high\ edge)}$ *Mary*$_i$ [$_{CP(low\ edge)}$ [$_{NP}$ t$_i$ [$_{NP}$ *ippal*]] [$_{CP}$*(phase)* C …]]]]]

Now, RR and B provide different deductions of HEMA. RR reduce it to an intervention effect, where the high edge intervenes between the probe and the lower edge. B reduces it to a PIC effect, arguing that in a phase with multiple edges, only the outmost edge is accessible from the outside due to the PIC. Since multiple Agree voids intervention effects, RR predict the lower edge can be targeted by Agree, if the high edge is agreed with. However, this is not the case under B, since multiple Agree does not void PIC effects.

RR's intervention approach to HEMA wrongly predicts (8c) to be grammatical; the lower SpecCP, *pal-ul*, should be accessible to *v* because *v* agreed with the high SpecCP, *Mary-lul*. Under B, only the highest SpecCP, which is the POSS in (10), can get ACC since PIC cannot be voided by Multiple Agree.

Note that example like (11) can be accounted for given Chomsky's 2001 claim that the PIC effects kick in only with the next phasal head, which means that T, a non-phasal head, can access the edge of the edge of vP, in spite of Hiraiwa's claim. Hence, both NPs can get NOM from T, as shown in (12).

(11) J-ka son-i khuta
J-NOM hand-NOM be.big
'J's hand is big.'

(12)✓ [$_{TP}$ T [$_{vP(edge)}$ [$_{NP(edge\ of\ the\ edge)}$ *Whole-NP*-NOM [$_{NP}$ *Part-NP*]]-NOM [$_{vP(phase)}$ *v* …]]]