Noun Incorporation, Instability, and Labelling

Nutshell: Noun incorporation (NI) is analyzed by Baker (1988, 1996, inter alia) as head movement driven by the Morphological Visibility Condition. I present problems with this analysis and propose that NI is driven by instability caused by the inability to label the nominal object to undergo NI (in the sense of Chomsky 2008; 2013; Cecchetto and Donati, 2015). In short, the incorporated noun undergoes movement into the verbal complex to allow the object to have a label. A result of this proposal is that the incorporated noun is a phrase rather than a head (Barrie & Mathieu, 2015). The data discussed here are from Onondaga, a Northern Iroquoian language closely related to Mohawk.

NI: Head Movement or XP Movement? Baker is perhaps the foremost proponent of NI as head movement (Baker, 1988, 2009). The impetus for this approach is (i) the notion that word formation is restricted to head movement, (ii) that the verbal complex with NI is typically considered to be a single word, and (iii) that the incorporated noun (IN) typically consists of just a root (or root + nominalizer). Here is an example showing NI in which the IN appears to be a bare root.

(1) a.

waʔ-	ha-	hninu	-ʔ	**neʔ**	**o-**	**yɛkw**	**-aʔ**
FACT-	3.SG.M.AG	buy	-PUNC	**DET**	**NPREF-**	**tobacco**	**-NFS**

'He bought tobacco.' [Onondaga, (Woodbury, 1975)]

b.

waʔ-	ha-	**yɛkw-**	a-	hninu	-ʔ
FACT-	3.SG.M.AG-	**tobacco-**	EPEN-	buy	-PUNC

'He bought tobacco.'

There is, however, significant evidence that NI proceeds by XP movement (Barrie and Mathieu, 2016), requiring some or all of the ideas above to be rethought. We begin with a discussion on labelling and NI.

Labelling These Days: In the operation Merge (a,b) → {c, {a,b}} how do we determine the label c? There has been much discussion on this topic lately (Cecchetto and Donati, 2015, Chomsky, 2008, 2013, Moro, 2000, Ott, 2015). The gist of the proposals referenced here is the following:

Merge (H, XP) → H is label
Merge (YP, XP) → unstable, cannot determine label

Thus, if two phrases, XP and YP, are merged, either YP or XP moves. The element that remains determines the label. Ott (2015) assumes that Merge (XP, YP) always creates a point of local instability since there is no label. Following Chomsky (2008), Ott assumes that unlabelled objects cannot receive a theta-role, thus requiring movement for interpretation. Thus, movement is especially necessary for DP arguments which have not yet received a theta-role. We move on to NI and doubling, linking this phenomenon with the above discussion on labelling.

NI and Doubling: Doubling is problematic for syntactic accounts of NI (Baker, 1988, 1996, Rosen, 1989).

(2) waʔgnasgwahní:nǫʔ neʔ gwíhsgwihs [Onondaga]

waʔ-	k-	naskw-	a-	hninǫ-	ʔ	neʔ	kwihskwihs
FACT-	1.SG.AG -	animal-	EPEN-	buy-	PUNC	DET	pig

'I bought a pig.'

In brief, the IN and the double cannot occupy the same spot upon Merge. Baker's response to this problem was to posit that the double is in a clause peripheral position à la Jelinek (1984). This solution is not tenable in light of the fact that the double can undergo wh-movement (Barrie et al., 2014, Barrie and Deer, 2012).

(3) a. gaęnigáeʔ gwíhsgwihs waʔsnasgwahní:nǫʔ [Onondaga]

kaęnikáeʔ	kwihskwihs	waʔ-	s-	naskw-	a-	hninǫ-	ʔ
which	pig	FACT-	2.SG-	animal-	JOIN-	buy-	PUNC

'Which pig did you buy?'

Barrie (2015) suggested the following solution to this problem. He proposed that the IN (*n*P) and the double (DP) merge to form a large ZP; however, the relationship between *n*P, DP, and ZP was left vague.

(4) [$_{ZP}$ [$_{nP}$ Incorporated N][$_{DP}$ double]] ZP – unidentified category

Evidence for assuming an *n*P (rather than a bare nominal root) comes from the fact that overt nominalizers and other functional material can appear in the IN (Barrie and Mathieu, 2016). In the following example the IN contains a semi-reflexive marker (SRFL), a kind of middle voice marker. This highlights the claim that the IN is a morphologically complex XP.

(5) a. hodaʔditshó:daʔ [Onondaga]
ho- [at- aʔti -tshR]- ot -aʔ
3.SG.M.PAT- [SRFL- lean -NZRL]- stand.upright/have -STAT
'He is using a cane.'

Proposal: Following Ott (2015), who proposed a similar analysis for split topics in German, the IN+double complex is merged as [[*n*P][DP]] and is unlabelable, hence unstable. Specifically, I propose that [[*n*P][DP]] forms a small clause in the sense of Moro (1997), where the *n*P is the predicate. Thus, I propose the following base structure for NI, where Ø represent the lack of a label.

(6) $[_{VP}$ hninǫ ('buy)' $[_{Ø}$ $[_{nP}$ naskw ('animal')][$_{DP}$ neʔ kwihskwihs ('DET pig')]]]

Recall from above that an unlabelled argument cannot receive a theta-role. To remedy this, the *n*P raises to a higher position, and the DP can now receive a theta role and, hence, Case. In her extensive discussion on NI, Mithun (1984, 1986) has argued that one of the primary functions of NI is to background a previously mentioned topic. As such, I propose that the *n*P raises to a low topic position below IP (Belletti, 2004, Jayaseelan, 2001). To recapitulate the line of reasoning from above, we have the following:

i) The IN is a full XP, not a head. (evidence: large structure of IN)
ii) Both the IN and the DP double originate in argument position. (evidence: *wh*-movement)
iii) The IN and the DP merge, forming a point of instability.
iv) The IN raises to a low TopP, leaving the DP to label the unlabelled structure.

Following the labelling algorithm, we see that the IN ***must*** be an XP. If the IN were a simple head, as Baker claims, then it would relabel the DP upon Merge, giving rise to a curious result: $[_{VP}$ V $[_{nP}$ *n* [DP]]], where *n* is a complex head root+NZLR. It is not clear how such a structure would be interpreted at the interfaces or if it is even convergent.

Building the Tree: So far, we have the following structure. The IN has raised to a low Topic position in light of its semantics as given information.

(7) $[_{CP}$ C $[_{TP}$ T …$[_{TopP}$ [IN]$_i$ Top $[_{AspP}$ Asp $[_{vP}$ *v* $[_{VP}$ V $[_{DP}$ [t_i][DP]]

In addition, the verb undergoes head movement to Asp, giving rise to the observed order V-CAUS-ASP. (Causatives, assumedly a kind of *v*, not shown because of space constraints.)

(8) $[_{CP}$ C $[_{TP}$ T …$[_{TopP}$ [IN]$_i$ Top $[_{AspP}$ [V$_k$ *v*]$_j$ Asp $[_{vP}$ t_j $[_{VP}$ t_k $[_{DP}$ [t_i][DP]]

We now have the correct order for the morphemes in the verbal complex:

(9) C-T-IN-V-*v*-Asp = MOOD-AGR-IN-V-CAUS-ASP

Conclusion: The core proposal here is that NI ***must*** proceed by XP movement, otherwise a point of instability is not formed. Once the IN has raised to alleviate the point of instability (and head movement takes place) the correct order of morphemes in the verbal complex arises. This study provides further theoretical underpinning to the empirical work of Barrie & Mathieu (2016) and builds on the proposal of Barrie (2015). It also provides an analysis for the *wh*-movement facts, which were unaccounted for under Baker's head movement theory of NI.

Selected References: Baker, M. C. 2009. Is head movement still needed for noun incorporation? *Lingua* 119:148-65. **Barrie, M.** 2015. Two kinds of structural noun incorporation. *Studia Linguistica* 69:237-71. **Barrie, M., and Mathieu, É.** 2016. Noun Incorporation and Phrasal Movement. *NLLT* 34:1-51. **Belletti, A.** 2004. Aspects of the Low IP Area. In *The Structure of CP and IP*, ed. L. Rizzi, 16-51. Oxford: OUP. **Cecchetto, C., and Donati, C.** 2015. *(Re)labeling*. Cambridge, MA: MIT Press. **Jayaseelan, K. A.** 2001. IP-Internal Topic and Focus Phrases. *Studia Linguistica* 55:39-75. **Jelinek, E.** 1984. Empty categories, case, and configurationality. *NLLT* 2:39-76. **Mithun, M.** 1984. The Evolution of Noun Incorporation. *Language* 60:847-94. **Ott, D.** 2015. Symmetric Merge and local instability: Evidence from split topics. *Syntax* 18:157-200. **Rosen, S. T.** 1989. Two Types of Noun Incorporation. *Language* 65:294-317. **Woodbury, H.** 1975. Noun Incorporation in Onondaga, Dept. of Linguistics, Yale U.: Ph. D. Diss.