

# On the Syntax of Surface-Adjacency: The Case of Pseudo Noun

## Incorporation\*

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**Abstract:** Pseudo noun incorporation constructions in Sakha and Tamil obey a strict linear adjacency condition, such that not only the NP but its head noun must be adjacent to the verb at PF. I argue that this adjacency condition can be explained if the head of the NP adjoins to the verb to create a unit that is interpreted as a complex predicate at LF. The resulting structure can be linearized at PF if and only if no syntactic expression comes between the two copies of the noun; this forces adjacency on the construction. The adjacency condition is canceled in Hindi, however, where verb-to-Tense movement breaks up the V-NP cluster.

**Keywords:** adjacency, linear order, pseudo noun incorporation, head movement, linearization

## 1. Introduction

One might well think that hierarchy and linear order are the two most basic of syntactic relations: the grouping of words into phrases, and the ordering of words relative to each other inside those phrases. But it has been commonplace in the recent generative literature to consider hierarchical relations to be the more fundamental of the two. This is evident in, for example, Kayne 1994, where the hierarchical relationship of asymmetrical c-command projects systematically onto the relationship of linear precedence at or before

the level of PF. Thus, the most common way to explain that a unit X is left- or right-adjacent to a linguistic unit Y is by saying that X is the complement of Y, or the specifier of Y, or perhaps the specifier of the complement of Y.

There are typically, however, potential gaps in such accounts, opening up the possibility that adjacency between X and Y may be disrupted. For example, adjunct-modifiers may adjoin to a given constituent as far as the theory of phrase structure is concerned, thereby intruding between it and another constituent. Movement is another possible source of exceptions: even if X is the specifier or complement of Y at some point, X and Y will not necessarily be adjacent on the surface if either X or Y moves to a higher position. Accounts of this type, then, might explain why certain elements need to be adjacent at some point in a syntactic derivation, but they do not necessarily explain why they must be adjacent at the *last* point of the derivation, why there must be surface adjacency at PF.

In this paper, I consider one case where standard accounts of adjacency of this sort seem not to be strong enough, name the adjacency between a bare noun phrase and the verb that selects it within Pseudo-Noun Incorporation (PNI) constructions, in the sense of Massam 2001. I show that the relevant condition in several languages is a strong form of surface adjacency, which cannot be disrupted by the addition of an adjoined modifier or by movement of the NP. I then propose a new way of thinking about this sort of surface string-adjacency. I claim that it is induced by a movement that has to be string-vacuous because neither member of the movement chain can be deleted. As a result, the structure can only be consistently linearized at PF if nothing else is linearized between the two links to create contradictory linearization statements. In addition, then, to familiar

ways of resolving movement chains at PF, another is having adjacency between the head and the tail of the chain so that one pronunciation can count as a realization of both.

This study of the adjacency conditions on PNI is based primarily on data from my own work on Sakha and Tamil, although all my major points could be made just as well with published data from Turkish (Öztürk 2005). I also draw on some data from Niuean, Chamorro, and Spanish, so as to show how the core idea interacts with the Head-Directionality Parameter. In the last two sections, I compare Tamil and Sakha with Hindi (and Amharic) where the adjacency condition is notably less strict (Dayal 2011). I close with the conjecture that this idea about the causes of linear adjacency will also work for some other phenomena thought of as complex predicate formation, and perhaps beyond.

## 2. Basics of Pseudo Noun Incorporation

Massam (2001) has argued that certain bare nominal constructions that were analyzed as noun incorporation (NI) in “classic” literature on the topic (Mithun 1984, Baker 1988) are better analyzed as simple NP complements of the verb. Her focus was on the Niuean language, but her observations seem to carry over to many other languages. Consider, for example, Sakha (also called Yakut, a Turkic language spoken in Siberia) and Tamil (a Dravidian language, spoken in Southern India)—unrelated but typologically similar languages spoken in different corners of Asia. (1) shows that direct objects in these languages are often marked with overt accusative case: *-(n)I* in Sakha, *-e* in Tamil.

(1) a. Erel kinige-ni atylas-ta. (Sakha)

Erel book-ACC buy-PAST.3sS

‘Erel bought the book/a certain book.’

b. Maala veegamaa anda pustagatt-e paḍi-cc-aa. (Tamil)

Mala quickly the book-ACC read-PAST-3fS

‘Mala read the book quickly.’

Direct objects of this sort need not be next to the verb, since these languages allow some variation in word order, presumably due to scrambling. For example, the object can easily be separated from the verb by an adverb or by a PP/dative NP, as shown in (2). It can also scramble to before the subject in both languages, deriving OSV orders.

(2) a. Masha salamaat-y tūrgennik sie-te. (Sakha)

Masha porridge-ACC quickly eat-PAST.3sS

‘Masha ate the porridge quickly.’

b. Min kinige-ni Masha-qa bier-di-m. (Sakha)

I book-ACC Masha-DAT give-PAST-1sS

‘I gave the book to Masha.’

c. Maala anda pustagatt-e veegamaa paḍi-cc-aa. (Tamil)

Mala the book quickly read-PAST-3fS

‘Mala read the book quickly.’

d. Naan oru pustagatt-e anda pombale-kittē kuḍu-tt-een. (Tamil)

I a book-ACC the woman-LOC give-PAST-1sS

‘I gave a book to the woman.’

However, objects that are interpreted as nonspecific indefinites can omit the accusative case marker, showing up as caseless nominals (not distinct from nominative case in these languages), as shown in (3). (See Öztürk 2005:27, 32 for Turkish.)

(3) a. Erel kinige atylas-ta. (Sakha)

Erel book buy-3sS

‘Erel bought a book/books.’

- b. Masha türgennik salamaat sie-te. (Sakha)

Masha quickly porridge eat-PAST.3sS

‘Masha ate porridge quickly.’

- c. Min Masha-qa kinige bier-di-m. (Sakha)

I Masha-DAT book give-PAST-1sS

‘I gave Masha books/a book.’

- d. Maala veegamaa pustagam paḍi-cc-aa. (Tamil)

Mala quickly book read-PAST-3fS

‘Mala read a book/books quickly.’

- e. Naan anda pombale-kitte pustagam kuḍu-tt-een. (Tamil)

I the woman-LOC book give-PAST-1sS

‘I gave a book to the woman.’

Unlike their accusative cousins, these caseless indefinite objects cannot be separated from the verb by any clausal constituent: they must be left-adjacent to the verb (see Kornfilt 1997:400-401, Öztürk 2005: 35-36, 50-51 for Turkish). (4) thus contrasts with (2).

- (4) a. \*Masha salamaat türgennik sie-te. (Sakha)

Masha porridge quickly eat-PAST.3sS

‘Masha ate porridge quickly.’

- b. \*Min kinige Masha-qa bier-di-m. (Sakha)

I book Masha-DAT give-PAST-1sS

‘I gave (a) book(s) to Masha.’

- c. \*Maala pustagam vegamaa paḍi-cc-aa. (Tamil)

Mala book quickly read-PAST-3fS

‘Mala read a book quickly.’

- d. \*Naan pustagam anda pombale-kittē kuḍu-tt-een. (Tamil)

I book the woman-LOC give-PAST-1sS

‘I gave a book to the woman.’

It is this linear adjacency effect that I seek to explicate in this paper.

The adjacency of the noun to the verb is (along with its caselessness) part of what led some researchers before Massam (2001) to analyze this as true noun incorporation: in addition to Mithun 1984 and Baker 1988, see Dixon (1988) on Fijian, Mohanan (1995) on Hindi, etc. If the noun and the verb in fact form a kind of complex word, then we expect no syntactic constituent to come between them. This then seems like a possible explanation of the facts in (1)-(4). But there are good reasons to say that this is not true. For example, the PNied nominal can have a phrasal structure, including modifiers and complements (although not determiners or other functional categories), as Massam (2001:158-161) emphasizes for Niuean. (5) gives examples for Sakha and Tamil.

- (5) a. Min saharxaj sibekki ürgee-ti-m. (Sakha)

I yellow flower pick-PAST-1sS

‘I picked (a) yellow flower(s).’

- b. Masha saṅa oqo kinige-te atyylas-ta. (Sakha)

Masha new child book-3sP buy-PAST.3sS

‘Masha bought (a) new children’s book(s).’

- c. Naan nalla pazam tee-r-een. (Tamil)

I good fruit seek-PRES-1sS

‘I am looking for (some/a) good fruit(s).’

d. Baala pazeya pustaga-nga vi-tt-aan.

Bala old book-PL sell-PAST-3mS

‘Bala sold old books.’

See also Öztürk 2005:39-40 for Turkish, Chung and Ladusaw 2004:85-87, 138-140 for Chamorro and Maori, Dobrovie-Sorin et al. 2006:61 for Spanish and Romanian, and Dayal 2011:136 for Hindi.<sup>1</sup> In contrast, the noun in a noun+verb compound cannot generally be modified or take a complement. Apparently, then, PNI is a relationship between an NP and a verb, not between a noun and a V, and hence is not a standard form of compounding.

It can also be shown that, at least in Tamil, PNI does not have the phonology of a compound (see Lidz 2006:19-20 for a similar argument in Kannada). A feature of colloquial Tamil is that nasals are deleted word finally, surfacing only as nasalization on the preceding vowel ((6a)). But this rule does not apply inside a compound: rather the nasal assimilates in place to a following stop, the stop becoming voiced ((6b)). Given this, we can ask for a suitable PNI example like (6c) whether the nasal at the end of the noun is treated like a word-final nasal (deleting and affecting the vowel quality) or like a compound-internal one. The answer is clearly that it deletes.

(6) a. Tamil words: nasal deletion word finally:

maram ‘tree’ → marõ; maram-aa → maramaa ‘is it a tree’

b. Tamil compounds: nasal assimilation, voicing

maan ‘mango’ + pazam ‘fruit’ → maambazõ ‘mango fruit’

maan ‘mango’ + kaa ‘unripe fruit’ → maangaa ‘unripe mango’

c. A PNI that ends in a nasal behaves like it is word final, not word medial:

Maala veegamaa pustagam paḍi-cc-aa. =[…gõpa..]

Mala quickly book read-PAST-3fS Not: […gamba…]

‘Mala read a book quickly.’

This makes sense if the PNied nominal and the verb are indeed separate words, with a boundary between them. So we seem to have syntactic juxtaposition of an NP and a V, not union of an N and V into a single word on the surface (see also Öztürk 2005:85n.17 on Turkish.) That is, essentially, what Massam means by *Pseudo* Noun Incorporation (and Mithun 1984 by her “composition by juxtaposition” type of NI).<sup>2</sup> But if there is a full phrase here, then it is not clear why that phrase cannot move in the syntax, or why some other constituent cannot move between it and the verb, resulting in a lack of surface-adjacency. We need a syntactic solution to this, not a quasi-morphological one.

This paper does not offer a complete analysis of the PNI construction. Some aspects of its syntax and semantics have already been well-treated, in particular by Massam (2001) and Dayal (2011), and I adopt their views as far as they go. Other issues remain to be given a better treatment. For example, I make only a passing remark (in note 12) about why there is no accusative case marking on the objects in (3)—a topic that needn’t be difficult, but deserves a fuller treatment. (See Baker In preparation for a proposal that builds on the one developed here.) And I have nothing to say about why there are lexical restrictions on which verbs allow PNI in some languages (see note 5), whereas the construction seems to be quite free and productive in Sakha and Tamil. But about the linear adjacency shown in (4) versus (2) and (3), I do have something to add.

### **3. The need for a surface adjacency condition**

In fact, Massam (2001) already proposed a simple, plausible, and influential account for why the verb needs to be next to the PNied NP in Niuean. She claimed that PNied nominals are NPs which are generated as the complement of the verb. Since they are NPs, not DPs, they are interpreted as predicates rather than as terms or generalized quantifiers, accounting for their indefiniteness. Since they are NPs, not DPs, they are not marked for case, or case is not realized on them. And, most importantly for current purposes, since they are NPs, not DPs, they do not undergo the same syntactic movement processes as DPs commonly do. In particular, they do not move to case licensing positions. The adjacency effect in PNI constructions is then taken to follow simply from this: the NP is generated as the immediate complement of the verb (hence is adjacent to it) and cannot leave that position. This is a simple and elegant view. It falls on me, then, to show why something needs to be added to this account. I present three reasons, two of which help point toward what the missing factor might be.

### 3.1 Other NP complements

The first consideration is somewhat theory-internal, but not insignificant. This is the fact that, on some analyses, the NP-DP distinction does not match up exactly with the PNI/no PNI distinction. Tamil and Sakha do not have article systems. As such, NPs without overt determiners are common on the surface, even apart from PNI. Of course, many linguists invoke a null determiner in such cases (Longobardi 1994) among many others), but a nontrivial minority does not, including Chierchia (1998), Dayal (2001), and Baker (2003). According to the latter view, determinerless bare plurals, for example, are analyzed as denoting kinds, which count as roughly equivalent in some contexts to narrow scope existentials because of what Chierchia calls “derived kind predication”.

Examples of this type exist in Tamil, as shown in (7). However, unlike PNied nominals, these NPs are marked for accusative case and do not need to be next to the verb:

- (7) a. Naan town-le pombale-nga[-e] paa-kka-lle. (Tamil)  
 I town-LOC woman-PL-ACC see-INF-NEG  
 ‘I didn’t see (any) women in town.’ (Neg > ∃ only)
- b. Naan pustaga-nga[-e] tirumba tirumba vaang-in-een.  
 I book-PL-ACC again again buy-PAST-1sS  
 ‘I bought books again and again.’

So if, following the Chierchia-Dayal view, there are NPs that denote kinds in natural language, then NPs can undergo movement and can receive accusative case after all. This implies that the rigidly fixed position of PNied nominals cannot be derived *solely* from their being NPs, although that may be part of the answer. Something more is needed.

### 3.2 PNI and resultative complements

My second argument is more central to the current project. I claim that simply saying that the PNied NP does not undergo case-driven object shift or scrambling is insufficient to explain the PNied NP’s adjacency to the verb in full generality. The missing piece can be seen by considering resultative constructions. Sakha and Tamil both have sentences that contain PP or AP resultative phrases as well as a direct object, as shown in (8).

- (8) a. Misha kumaaqy-ny xoruopka-qa uk-ta. (Sakha)  
 Misha paper-ACC case-DAT put-PAST.3sS  
 ‘Misha put the paper in the case.’
- b. Bu oqo-lor-u djolloox oŋor-but-a. (Sakha)  
 this child-PL-ACC happy make-PTPL-3sS

‘This made (the) children happy.’

c. Baala pustagatt-e meese kii|e va-kkir-aan. (Tamil)

Bala book-ACC table under put-PRES-3mS

‘Bala puts the book under the table.’

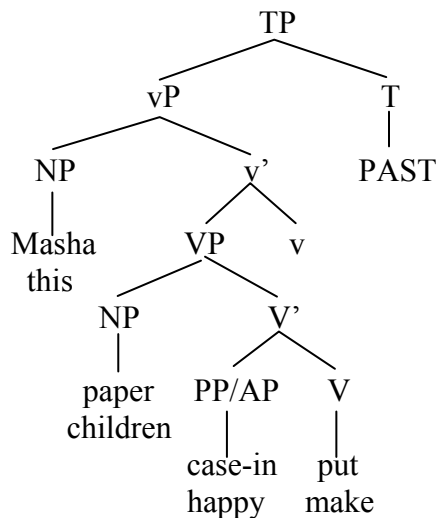
d. Adu pazatt-e peris-aa aakkar-idu. (Tamil)

it fruit-ACC big-ADV make.PRES-3nS

‘It makes (the) fruit big.’

In Chomskian theory since Larson 1988, these resultative phrases are usually analyzed as being the complements of the verb, with the theme generated higher, as the inner specifier of some sort of VP shell. The structure of (8a,b) is thus roughly as in (9).

(9)



Evidence that the AP, not the NP, is the complement of V in (8b,d) comes from the fact that the AP cannot move, but must itself surface next to the verb, as shown in (10).

(10) a. \*Bu djolloox Masha-ny o|or-or. (Sakha)

this happy Masha-ACC make-AOR.3sS

‘This made Masha happy/an invalid.’

b. \*Adu peris-aa pazatt-e aakkar-idu. (Tamil)

it big-ADV fruit-ACC make.PRES-3nS

‘It makes (a) fruit big.’

For resultative PPs, the issue is a bit more subtle, since they can undergo movement; hence one might wonder whether (8a) or (11) is the more basic structure.

(11) Misha serenen xoruopka-qa kumaaqy-ny uk-ta.

Misha carefully case-DAT paper-ACC put-PAST.3sS

‘Misha carefully put THE PAPER in the case.’ (focus on ‘the paper’)

However, the order in (11) seems to be the more marked one, requiring focus, and this impression can be confirmed by certain syntactic tests involving c-command. For example, Baker and Vinokurova (2010:628) argue that (8a) has the structure in (9) based on properties of agreement in reduced relative clauses, given the contrast in (12).<sup>3</sup>

(12) a. Suruk ostuol-ga uur-ulun-na. → suruk uur-ullu-but ostuol-a

letter table-DAT put-PASS-PAST letter put-PASS-PTPL table-3sP

‘The letter was put on the table.’ ‘the table that the letter was put on’

b. Misha-qa suruk yyt-ylyn-na → ?\*suruk yyt-yly-byt kihi-te

Misha-DAT letter send-PASS-PAST letter send-PASS-PTPL person-3sP

‘The letter was sent to Misha.’ ‘the person that the letter was sent to’

Baker and Vinokurova ask why agreement is possible on the head noun of the relative clause with the theme argument inside the passivized relative clause in (12a) but not in (12b). Their answer is that the trace of the dative argument intervenes structurally between the agreeing head and the theme argument creating a kind of intervention effect

in (12a) but not in (12b). This then suggests that the animate goal of a verb like ‘send’ is higher than the theme (in Spec VP or Spec, ApplP), but the inanimate goal of a verb like ‘put’ is lower than the theme, generated as the verb’s complement, as shown in (9). This structural distinction is also familiar from other languages: see, for example, McFadden 2004 on German and Icelandic.

Given the structures in (9), then, what is predicted if we assume that PNied nominals are simply NPs that cannot move from their base positions, as Massam suggests? Then there should be analogs of (8) in which the theme argument is indefinite and caseless but not adjacent to the verb; rather, it would be separated from the verb by the resultative phrase. However, such examples are clearly bad, as shown in (13).

- (13) a. \*Misha (serenen) kumaaqy xoruopka-qa uk-ta. (Sakha)  
Misha carefully paper case-DAT put-PAST.3sS  
‘Misha put a paper/papers in the case (carefully).’
- b. \*Bu oqo djolloox oŋor-or. (Sakha)  
this child happy make-AOR.3sS  
‘This makes a child/children happy.’
- c. \*Baala pustagam meese kii|e va-kkir-aan. (Tamil)  
Bala book table under put-PRES-3mS  
‘Bala puts book(s) under the table.’
- d. \*Adu pazam perisaa aakkar-itu. (Tamil)  
It fruit big make.PRES-3nS  
‘It makes fruit big.’

This cannot easily be attributed to a semantic condition on PNI, because if the PP moves away from the verb, as in (11), then the theme argument can appear in bare NPied form:

(14) a. Misha serenen xoruopka-qa kumaaqy uk-ta. (Sakha)

Misha carefully case-DAT paper put-PAST.3sS

‘Misha carefully put a paper/papers in the case.’

b. Baala petti u||e pazam va-kkir-avan. (Tamil)

Bala box in fruit put-PRES.PTPL-he

‘Bala is the one who puts fruit(s) in (the) box(es).’

I conclude that there is a condition of strict *surface* adjacency that holds between the bare NP and the verb in these languages. This cannot be not reduced to a condition on the base position of the NP, such as saying that only the lowest argument of V can undergo PNI. Movement of a theme away from the verb can lead to a violation of this condition, as in (4), and movement of the goal away from the verb can lead to its satisfaction, as in (14). These details do not follow from saying that the bare NP is the verb’s complement.<sup>4</sup>

### 2.3 PNI and NP-internal word order

There may be another adjacency condition to consider as well. At the heart of Massam’s view is the insight that PNI is a relationship between a noun phrase and a verb, not between a noun and a verb. Given only this, we would expect the condition to be that the NP as a whole must be adjacent to the verb. But there is some reason to think that a stronger condition holds, such that the N inside NP must itself be adjacent to the verb.

This is true in standard examples in the literature, as well as mine from Tamil and Sakha:

(15) a. Min saharxaj sibekki ürgee-ti-m. (Sakha, (=5a))

I yellow flower pick-PAST-1sS

‘I picked (a) yellow flower(s).’

b. Naan nalla pazam tee-r-een. (Tamil (=5c))

I good fruit seek-PRES-1sS

‘I am looking for (some/a) good fruit(s).’

For these two languages, there is nothing particularly striking about these examples. Modifier-noun (and complement-noun) is the standard order inside NPs in Sakha and Tamil. So if the noun is final in NP, and the PNied NP as a whole is left-adjacent to the verb, it follows that the noun itself is left-adjacent to the verb. Niuean is the mirror image of this: the noun is before the modifier in NP (Massam 2001:156), and NP follows the verb, so the noun is expected to be right-adjacent to the verb (C&L 136-141 for Maori).

(16) Ne holoholo kapiniu kiva fakaeneene a Sione.

Pst wash dish dirty carefully ABS Sione

‘Sione washed dirty dishes carefully.’ (Niuean: Massam 2001)

But Chung and Ladusaw’s (2004) description of Chamorro, another Austronesian language, suggests that a stronger condition holds. Like Niuean, Chamorro is a verb-initial language. But Chamorro happens to allow certain NP-internal modifiers to come either before or after the head noun, as shown in (17) (C&L:80, 143).

(17) a. ädyu i [yä-hu] na lepblu.

that the wh.obj.like-AGR LK book

‘that book which I like’

b. ädyu i lepblu [ni yä-hu].

that the book C wh.obj.like-AGR

‘that book which I like’

Interestingly, this freedom of word order inside NP does not extend to examples in which the NP undergoes PNI with a possessive verb.<sup>5</sup> In that case, only the noun-initial order is possible (C&L:143-144), such that the N appears right-adjacent to the verb.

(18) a. Si Juan gäi-[kareta agäga].

Unm Juan have-car red

‘Juan owns a red car.’

b. Tăi-[amiga ni yă-hu] si Carmen.

Agr.not.have-friend C WH.obj.like-AGR Unm Carmen

‘Carmen has no women friends who I like.’

(19) a. \*Găi-[agäga na kareta] yu’.

have-red LK car I

‘I own a red car.’

b. \*Găi-[yă-hu na kareta] si Juan.

Agr.have-Wh.obj-like-AGR LK car Unm Juan

‘Juan owns a car that I like.’

This shows that it is not enough for the PNied NP as a whole to be adjacent to the verb; in addition, the N itself must be adjacent.<sup>6</sup> Similar contrasts can be observed in Catalan (Teresa Espinal, personal communication).

More generally, there are SOV languages with noun-adjective order inside NP (like Choctaw), and SVO languages with adjective-noun order inside NP (like English). Nevertheless, there are no reported cases of PNI in such languages, so that we see [N-A]-V order or V-[A-N] order. I take this to be significant, and it does not follow from Massam’s baseline theory. (17)-(19) cause Chung and Ladusaw to be rather ambivalent

as to whether Chamorro has Massam-style PNI<sup>7</sup> or Baker-style true NI, noting that these examples point toward the latter. But it seems that both are in some sense true simultaneously. I turn then to a new proposal that can capture this seeming paradox.

#### 4. Head Movement as the vehicle of Complex Predicate Formation

##### 4.1 What might be gained

This brings me to my positive account of what can be added to Massam’s syntax to derive the strong surface adjacency conditions we have seen. The core idea is to use head movement. Here is what might be gained in regard to explaining the word order.

What is attractive about saying that the noun moves to adjoin to the verb is that it captures the fact the noun needs to be next to the verb, as Chung and Landusaw recognize. What is attractive about saying that the noun does not move, but stays inside NP, is the fact that the noun is adjacent to its modifier and still seems to form an NP-like constituent with it, as Massam recognizes. Both observations seem true and important. Now movement in general is currently understood as a copying process in the syntax, with subsequent PF resolution of the linearization problems associated with pronouncing the same element twice (Chomsky 1995, Bobaljik 2002). So using head movement in the analysis of PNI is literally saying that the noun is in both positions at the same time. Done correctly, this might give us the right resources to capture the full network of adjacency relations, both modifier with noun and noun with verb. My proposal, then, is that (20) is the representation of a PNI example like (5a) in the syntax and at LF. Then at PF only one instance of ‘flower’ is pronounced rather than two, for reasons to be made more explicit in section 5. This results in the observed form ‘I yellow flower pick.’

(20) I [VP [NP yellow flower ] [V flower-pick]]  
   |           |           |

#### 4.2 Semantic motivation

Why does the noun move to adjoin to the verb in these constructions? It is clearly not for the same reason that true noun incorporation happens in Inuit and Mohawk, where it takes place for morphological reasons, such as the verb being specified as an affix. But another natural reason is that this is what is required to have the noun and the verb interpreted as forming a complex predicate at LF, as in Dayal's (2011) semantics.

I mentioned above that PNied NPs are interpreted semantically as nonspecific indefinites. More precisely, they have a rather distinctive interpretation that has received significant attention in the semantics literature. Not only are they existentially quantified, but the existential takes narrow scope with respect to all other operators (Bittner (1994), van Geenhoven (1998), Massam 2001:168-169, Dayal 2011, Farkas and de Swart 2003:103-105, C&L:137, Dobrovie-Sorin et al. 2006:68-69). For example, (21a-c) in Tamil show that the PNied nominal takes only narrow scope with respect to negation, with respect to a repetitive adverb, and with respect to imperfective aspect.

- (21) a. Naan pustagam vaanga-ile. (#Adu meese meelee iru-kk-idu.)  
 I book buy-NEG it table on be-PRES-3nS  
 'I didn't buy (any) book.' (#It is on the table.) (Neg > ∃ only)
- b. Naan tirumba tirumba pustagam vaang-in-een. (Tamil)  
 I again again book buy-PAST-1sS  
 'I bought book(s) again and again.' (a different book each time)
- c. Pala varuṣam-aa avanga poṇṇu paa-tt-aanga.  
 a.lot year-ADV they girl see-PAST-3pS

‘For many years they have been seeing girl(s).’ (different ones different times)

In contrast, an indefinite NP that is marked with the quasi-indefinite article *oru* ‘a, one’ and accusative case can and sometimes must take wider scope than these operators. For example, (22) contrasts with (21b) in that it has only the less likely meaning in which there is a book that the speaker bought over and over again.

(22) Naan tirumba tirumba oru pustagatt-e vaang-in-een.

I again again a book-ACC buy-PAST-1sS

‘I bought a (particular) book again and again.’ (the same book, over and over)

Dayal (2011) shows that this property of PNI is also what gives the impression of number neutrality for the PNied NP, where a formally singular NP can be translated into English as singular or plural, as seen in (21b) and (21c). If the event expressed by the verb is repeated, and the existential takes narrow scope with respect to imperfective aspect and pluractional operators, then one can have different entities involved in the different events, implying a plurality of entities overall. For number neutrality of the PNied NP, see also Farkas and de Swart 2003:101-102 and Öztürk 2005:45 on Turkish.

At the heart of Dayal’s (2011) analysis of the semantics of PNI is the idea that the PNI nominal is interpreted as a *predicate*, not as a term or a generalized quantifier, as most other nominals are. The nominal then combines with the verb via predicate modification to create something that is a predicate of events—subtypes of the events that the verb root itself is a predicate of. This is shown for a simple Hindi example in (23).

(23) a. main-ne kitaab paRhii. (Hindi: Dayal 2011)

I-ERG book.FEM.SG read.FEM.SG

‘I book-read.’

b. book =  $\lambda x$  [book(x)]  
 read =  $\lambda P \lambda x \lambda e$  [P-read (e) & Agent(e, x)]  
 [<sub>VP</sub> book read ] =  $\lambda x \lambda e$  [book-read (e) & Agent(e, x)]  
 ...where  $\exists e$  [ book-read (e) & Agent(e, x)]

implies  $\exists e$  [ read (e) & Agent(e, x) &  $\exists y$  [book(y) & Theme(e, y)]]

For Dayal, an event counts as a book-reading event only if there is a book that is involved in the event as its theme, but this is a kind of semantic equivalence, not part of the official representation of the clause. Since existential quantification over the theme argument is built into the meaning of the verb in this way, syntax and semantics cannot manipulate its scope, giving it wider scope than other operators in the representation. Rather, anything that takes scope over the verb automatically takes scope over the PNied nominal that forms a complex predicate with it as well. This is Dayal's account of the special scope properties of PNied NPs, including the appearance of number-neutrality in some contexts

Now nouns and their projections are generally the quintessential arguments, according to Baker (2003), among others. One might think, then, that they need to be marked in some way in order to show that they are receiving a nontypical interpretation as predicates. Many say that the interpretation of a nominal is determined by whether it is embedded in a DP or not, but we have seen that this may be inadequately general (see (7)), and, given the limited number of syntactic options are available, there is a restricted range of alternatives. It seems plausible, then, within Minimalism, to say that head movement is the vehicle for this kind of complex predicate formation. In other words, we might assume a principle like (24).<sup>8</sup>

(24) Interpret X and Y as a complex predicate at LF if [and only if] X and Y form a complex head.

For example, [<sub>v</sub> flower-pick] in (20) would be interpreted as  $\lambda x \lambda e$  [flower-pick (e) & Agent(e, x)] (cf. (23b)). I claim that this is the driving force for having a kind of syntactic incorporation in PNI constructions. (See also Baker 2003:149-151 on the need to use head movement to interpret AP and VP complements in various languages, given that these categories cannot be true arguments, so they can only be interpreted by forming complex predicates via (24)).<sup>9</sup>

#### 4.3 Consequences for what can be pseudo-incorporated

Additional support for the idea that head movement is involved in PNI constructions comes from the fact that it can help explain which nominals can be involved in PNI. In particular, it can explain the fact that PNI is only possible with NPs that are direct internal arguments of the verb. This does not go without saying, and does not obviously follow from the semantics of PNI as complex predicate formation. I can imagine that, among the various reading events, a natural subtype are reading-to-children events, and that, among the various staying events, a natural subtype are staying-in-hotel events. Nevertheless, goal and location arguments cannot undergo PNI in Sakha or Tamil. In other words, they cannot have their case marker omitted when they are adjacent to the verb, thereby achieving a number-neutral, narrowest scope existential reading, as shown in (25) and (26). (See also Kornfilt 1997:401-402 for Turkish.)

(25) a. Misha at-y            oqo-\*(lor-go) bier-de            (Sakha)

Misha horse-ACC child-PL-DAT give-PAST.3sS

‘Misha gave (the) children the horse.’

- b. Baala anda pustagatt-e kozande-nga-\*(lukku) paḍi-kka virumb-an-aan.  
 Bala that book-ACC child-PL-\*(DAT) read-INF like-PAST-3mS  
 ‘Bala likes to read that book to children/a child.’ (Tamil)
- (26) Baala hotel-\*(le) tangu virumb-an-aan. (Tamil)  
 Bala hotel-LOC stay-INF like-PAST-3mS  
 ‘Bala likes to stay in hotels/a hotel.’

Nor can agentive subjects undergo PNI in these languages. Given that subjects are not marked overtly for case anyway in Sakha or Tamil, we cannot look for the omission of an otherwise-expected case marker. However, (27) shows that a bare singular subject cannot have a narrowest scope, number-neutral interpretation in Tamil, even if it is adjacent to the verb.<sup>10</sup>

- (27) #Baala-ve tirumba tirumba naayi keḍi-cc-iccu. (Tamil)  
 Bala-ACC again again dog bite-PAST-3nS  
 ‘A dog bit Bala again and again.’ (only the same dog bit him over and over)

In contrast, PNI is possible with the theme subjects of (at least some) unaccusative verbs in these languages, as shown by the number-neutral interpretation of ‘rock’ in (28). (See also Baker and Vinokurova 2010:631-632 for Sakha, Kornfilt 1997:399 and Öztürk 2005:32 for Turkish.)

- (28) Male-le-rundu tirumba tirumba pare urun-nd-icci.  
 hill-LOC-from again again rock roll-PAST-3nS  
 ‘Again and again rock(s) rolled down from the hill.’  
 (different rocks different times; this reading is lost if *pare* is sentence-initial)

This matches very closely the distribution of morphological incorporation in (e.g.) Mohawk, where direct objects and the subjects of unaccusatives can incorporate, but goals, locations that are otherwise realized in PPs, and agentive subjects cannot (Baker 1996:sec. 7.3). In Baker (1988, 1996) I derived this pattern in morphological NI from independently motivated principles of movement, particularly the Head Movement Constraint.<sup>11</sup> If PNI also involves head movement, then that explanation automatically carries over to restrict which NPs can be involved in PNI and which cannot, a positive result given the strong parallels. And if this assumption can also provide the basis for an account of the surface adjacency condition, so much the better.<sup>12</sup>

## **5. Adjacency and the mapping to PF**

### 5.1 Guiding principles

It remains, then, to fill in the details of how a representation like (20) avoids crashing at PF, but rather manifests itself as ‘I yellow flower pick’, with ‘flower’ adjacent to both ‘yellow’ and ‘pick’.

In most cases, a moved expression is only pronounced once. Nunes (2004:24-25) and many others suggest that this follows from constraints on linearization, imposed by the need to pronounce words in a well-defined order at PF. A moved element X has (by definition) more than one syntactic position. Hence, there will usually be other elements Y in the structure such that one copy of X c-commands Y but Y c-commands the other copy of X. Hence, in standard frameworks for linearization (e.g. Kayne 1994), we end up with statements like  $X_1 < Y$ , and  $Y < X_2$ , but  $X_1 = X_2$ —which is a contradiction (here  $a < b$  indicates ‘a precedes b’). The usual solution is to delete one of the copies, often the lower one, but not always (Bobaljik 2002).

However, it is plausible to think that the standard ways of deciding which copy to delete do not apply to the case at hand. Nunes's (2004) proposal was that the copy whose features have been checked is retained, for economy reasons. But this kind of head movement does not happen for reasons of feature checking, but rather to create a complex predicate. One might say that, other things being equal, the copy that asymmetrically c-commands all other copies is retained (cf. Bobaljik 2002:223n.24). But it is not clear that that works here either: the moved head and the original copy might c-command each other (or neither c-commands the other, depending on how c-command is defined). For overt NI in Mohawk or Greenlandic, one might say that head movement happens for morphological reasons: the verb is a morphologically dependent form (an affix) and needs a noun root to sustain it. If so, then it must be the moved copy that is retained at PF, where these morphological conditions hold. But that does not apply to PNI constructions either, where head movement happens only to form a complex predicate.<sup>13</sup>

Suppose, then, that PF finds itself with *no* principled way of choosing one copy of the noun chain to pronounce, and yet it needs a consistent linear ordering. I suggest that this leads to a contradiction except in one special case: when the movement is so short that in fact nothing comes between the two copies in the relevant sense. Short, string vacuous movement does not lead inevitably to the usual ordering paradoxes, so that is what head movement in order to form a complex predicate must be.

A technical innovation that can make this work is to assume that the ordering rules, whatever their exact details, map syntactic relations between *x* and *y* (such as “*x* asymmetrically c-commands *y*”) onto the relation “*x* does not follow *y*” ( $\leq$ ) rather than “*x* precedes *y*” ( $<$ ). In most contexts, this makes no difference: *X* precedes *Y* and *X* does not

follow Y amount to the same thing if X is distinct from Y, given that spoken language does not permit distinct elements to be uttered simultaneously. But it makes all the difference when X is not distinct from Y: a statement like  $X < X$  would still be a contradiction, but  $X \leq X$  is not. On the contrary, it is satisfied whenever X is uttered. That is how PNI constructions can survive at PF, and it forces string adjacency on them.

## 5.2 Sample derivations

Let us consider, then, some sample derivations. For explicitness, I also assume (29), based on Fox and Pesetsky (2004:9) (see also Marantz 1988).<sup>14</sup>

(29) A complex expression X does not follow a complex expression Y means that the last element dominated by X does not follow the first element dominated by Y.

How then does simple PNI take place on this view? The syntax is given in (30a).

(30) a. I [<sub>VP</sub> [<sub>NP</sub> yellow flower ] pick ] → (=5a)  
           I [<sub>VP</sub> [<sub>NP</sub> yellow flower ] flower+pick ]           Noun incorporation

b. Ordering at PF:

flower ≤ pick in V	(left-adjunction, a free choice)
yellow ≤ flower in NP	(NP order in Turkic, Dravidian)
NP ≤ V in VP	(head final VP)
→ flower ≤ flower, by (29)	OK since flower=flower!

*Consistent ordering: yellow - flower - pick*

Then this structure is ordered at PF as in (30b). Working cyclically from bottom up, normal ordering principles give us ‘flower’ ≤ ‘pick’ in V, assuming that the noun adjoins to the left of the verb, and ‘yellow’ ≤ ‘flower’ in NP, which is the normal NP-internal order in Turkic and Dravidian. Moving up to the VP level, we get NP ≤ V in VP, because

Sakha and Tamil are head final languages, however exactly this is derived. Applying (29) to this last statement gives us ‘flower’  $\leq$  ‘flower’, because one copy of ‘flower’ is the last thing in NP and the other copy is the first thing in V. Putting it all together, we get the conditions: ‘yellow’  $\leq$  ‘flower’  $\leq$  ‘flower’  $\leq$  ‘pick’. These ordering conditions are complete and consistent. They are satisfied by uttering ‘yellow flower pick’—and that is what Sakha and Tamil speakers utter.

Now suppose there is a resultative PP between the object and the verb, as in (13a). The syntactic derivation will be (31a).

(31) a. Masha [<sub>VP</sub> [<sub>NP</sub> yellow flower ] [<sub>V'</sub> [<sub>PP</sub> box-in ] put ]]  $\rightarrow$   
 Masha [<sub>VP</sub> [<sub>NP</sub> yellow flower] [<sub>V'</sub> [<sub>PP</sub> box-in ] flower+put ]] Noun incorporation

b. Ordering at PF:

flower $\leq$ put in V	(left adjunction)
yellow $\leq$ flower in NP	(NP internal order)
box $\leq$ in in PP	(head final)
PP $\leq$ V in V' $\rightarrow$ in $\leq$ flower	(head final, plus (29))
NP $\leq$ V' in VP	(spec initial)
$\rightarrow$ flower $\leq$ PP $\rightarrow$ flower $\leq$ box	(by (29))

*Contradiction: flower  $\leq$  box  $\leq$  in  $\leq$  flower, crashes at PF*

Ordering this at PF, we get ‘flower’  $\leq$  ‘put’ in V and ‘yellow’  $\leq$  ‘flower’ in NP, as before. Inside PP, we get ‘box’  $\leq$  ‘in’, since these languages are head final. Moving upward, we get PP  $\leq$  V in V’; this then gives us ‘in’  $\leq$  ‘flower’ by (29). Next to consider is the full VP: here we get NP  $\leq$  V’, since these languages have initial specifiers. This unpacks as ‘flower’  $\leq$  ‘box’, again by (29). Collecting these statements together, we get ‘yellow’  $\leq$

‘flower’ ≤ ‘box’ ≤ in’ ≤ ‘flower’ ≤ ‘put’. This is a contradiction, since ‘flower’ is ordered both before and after ‘box’ and ‘in’. Hence, (13a) is bad.

Next consider how leftward movement of the PP saves the structure, as in (14). Here there are two copies of the PP at spell-out, as well as two copies of the noun:

- (32) a. Masha [<sub>VP</sub> [<sub>NP</sub> yellow flower ] [<sub>V'</sub> box-in put ]] → Noun incorporation  
 Masha [<sub>VP</sub> [<sub>NP</sub> yellow flower] [<sub>V'</sub> box-in flower+put ]] → Scrambling  
 Masha [<sub>VP</sub> box-in [<sub>VP</sub> [<sub>NP</sub> yellow flower] [<sub>V'</sub> box-in flower+put ]]]
- b. Ordering at PF:

As before, plus leftward moved copy of [box –in]

PP ≤ VP in VP → in ≤ NP → in ≤ yellow

**But** remove lower copy of scrambling chain:

= remove statements with ‘box’ and ‘in’: flower ≤ box ≤ in ≤ flower

*Consistent order: box- in - yellow - flower - put*

The last part of this syntactic structure is identical to the one in (31), so there is risk of it leading to an ordering contradiction. But this time the copies of ‘box’ and ‘in’ that are between the two copies of ‘flower’ are themselves the lower members of a two-member chain. As such, they are deleted at PF by the normal principles that resolve XP chains derived by scrambling. If this deletion happens before other aspects of linearization, then there is clearly no problem: (32) becomes in all relevant respects like (30). Even if copy deletion happens after linearization, there is presumably no problem. Statements like ‘flower’ ≤ ‘box’ and ‘in’ ≤ ‘flower’ are generated, but they collapse harmlessly once these copies of ‘box’ and ‘in’ are removed from the representation.<sup>15</sup> So (14) comes out as being possible.

In contrast, consider examples like (4a), where the theme scrambles leftward over an adverb or PP. Even though one deletes the lower copy of the NP, a contradiction arises since the copy of N adjoined to V survives. Whatever the NP scrambled over comes after the copy of the noun in the scrambled phrase, but before the copy of the noun adjoined to the verb. Thus (4a) might look like (33a) at Spell out, giving the bad ordering in (33b).

- (33) a. Masha [<sub>NP</sub> porridge ] [<sub>VP</sub> quickly [<sub>VP</sub> porridge [<sub>V</sub> porridge+eat ]]]  
 b. porridge ≤ quickly ≤ ~~porridge~~ ≤ porridge ≤ eat

We thus see how XP movement can cause problems for PNI as well as solving them. In other words, this account explains why we observe a *surface* adjacency condition, not one that applies earlier in the syntax, prior to scrambling.

### 5.3 PNI in head initial languages

Next, let us consider PNI derivations in head initial languages like Niuean, Chamorro and Spanish. The derivation for (16) from Niuean will be as in (34).

- (34) a. [<sub>VP</sub> [<sub>VP</sub> wash [<sub>NP</sub> dish dirty ] ] carefully ] → Noun incorporation  
 [<sub>VP</sub> [<sub>VP</sub> wash+dish [<sub>NP</sub> dish dirty ] ] carefully ]  
 b. Ordering at PF:

wash ≤ dish in V (right-adjunction, a free choice)

dish ≤ dirty in NP (NP order in Oceanic)

V ≤ NP in VP (head initial VP)

→ dish ≤ dish, by (29) OK since dish=dish

*Consistent ordering: wash - dish - dirty*

By definition, the fundamental difference here is that inside the VP we get the ordering statement V ≤ NP rather than NP ≤ V. But PNI can still happen and yield a consistent

ordering as long as we also apply  $N \leq A$  in NP, and  $V \leq N$  in the complex V. Then we get V-N-A order, the opposite of Sakha and Tamil's A-N-V order, but equally consistent, with one utterance of N correctly placed with respect to both V and A. As for  $V \leq N$ , I simply assume that the noun can adjoin freely to either side of the verb if there are no morphological properties that say otherwise; each language automatically selects the option that fits best with its other word order properties. As for  $N \leq A$  in NP, that is the normal order in Niuean, and nothing special needs to be said about it.

Chamorro, however, also allows  $A \leq N$  in NP (probably with some other differences in structure, including the use of a linker particle; the details are not unpacked here). However, Chamorro cannot take advantage of this second option in this particular context, because then it would derive the equivalent of 'wash'  $\leq$  'dish', 'dirty'  $\leq$  'dish', and 'dish'  $\leq$  'dirty', a contradictory set of ordering requirements. This derives the facts seen in section 3.3. In particular, we see that an adjective in the wrong place inside NP can make PNI fail in very much the same way that an adverb or PP inside VP can.

A language may have other phrasal movements, of course, but those typically will not disrupt the account. For example, Massam (2001) argues that Niuean sentences like (16) involve a process of predicate fronting, which moves the VP to Spec, TP, thereby deriving VOS order. We may follow her in this, while still assuming that covert head movement applies inside the moved VP. This fuller syntactic derivation is in (35a).

- (35) a. [TP TENSE [Sione [VP wash [NP dish dirty ] carefully ]]]  $\rightarrow$  NI  
       [TP TENSE [Sione [VP wash+dish [NP dish dirty ] carefully ]]]  $\rightarrow$  Pred fronts  
       [TP [VP wash+dish [NP dish dirty ] carefully ] TENSE [Sione [VP wash... ]]]
- b. At PF:

[<sub>TP</sub> [<sub>VP</sub> wash+dish [<sub>NP</sub> dish dirty ] carefully ] T Sione [<sub>VP</sub> -- ]] (copy deletion)

Otherwise, ordering inside VP as in (34).

The crucial assumption is that in VP fronting, as in other instances of overt phrasal movement, the lower copy simply deletes at PF. Given this, the ordering principles interpret the higher copy of the VP at PF the same way that they would apply to an unmoved VP, as sketched in (34), giving the desired result. In general, phrasal movement will not affect the possibility of PNI or its results.

#### 5.4 PNI and complex predicate formation

Finally, we can ask whether PNI can happen with a predicate that is already complex. According to my analysis, this should depend on the details of the complexity.

Some kinds of complex predicates are apparently incompatible with PNI: for example, PNI is blocked for the object of a verb-plus-resultative-AP complex predicate (see (13b,d)). This follows from my assumptions, given the structure in (9). We may assume that the adjective must adjoin to the verb to form a complex predicate with it (as in Baker 2003). This accounts for the fact that the AP must be adjacent to the verb, just as a PNied NP must be, as shown in (10). Suppose then that the head of the NP also adjoins to the verb and we try to interpret the result at PF, as in (36).

(36) a. This [<sub>VP</sub> [<sub>NP</sub> fruit ] [<sub>V'</sub> [<sub>AP</sub> big ] make ]] → Adjective Incorporation

This [<sub>VP</sub> [<sub>NP</sub> fruit ] [<sub>V'</sub> [<sub>AP</sub> big ] big+make ]] → noun incorporation

This [<sub>VP</sub> [<sub>NP</sub> fruit ] [<sub>V'</sub> [<sub>AP</sub> big ] fruit+big+make ]]

b. Ordering at PF:

big ≤ make in V

fruit ≤ V in V → fruit ≤ big by (29)

$AP \leq V$  in  $V'$   $\rightarrow$   $big \leq fruit$  by (29)

$NP \leq V'$  in  $VP$   $\rightarrow$   $fruit \leq AP \rightarrow fruit \leq big$  by (29)

*Contradiction:  $fruit \leq big, big \leq fruit$*

Assuming that ‘big’ adjoins to the verb before ‘fruit’ does, we get the orders ‘big’  $\leq$  ‘make’ in  $V$  and ‘fruit’  $\leq V$  in  $V$ , implying ‘fruit’  $\leq$  ‘big’ by (29). Then we get  $AP \leq V$  in  $V'$ , implying ‘big’  $\leq$  ‘fruit’, ‘fruit’ being the first thing in the largest  $V$ . Finally, we get  $NP \leq V'$  in  $VP$ , which implies ‘fruit’  $\leq AP$ , which implies ‘fruit’  $\leq$  ‘big’. This is a contradictory set of ordering statements, because it includes both ‘fruit’  $\leq$  ‘big’ and ‘big’  $\leq$  ‘fruit’. Note also that we would do no better if we assumed that the noun adjoined to the verb before the adjective did. Then the ordering inside the complex verb would be ‘fruit’  $\leq$  ‘make’ and ‘big’  $\leq V$  implying ‘big’  $\leq$  ‘fruit’. The last of these statements contradicts ‘fruit’  $\leq$  ‘big’, derived from ordering the  $VP$  node. Therefore, we derive the fact that complex predicate formation of this sort cannot iterate. The pseudo-incorporation of one phrase does not make it possible to pseudo-incorporate another one.

However, if there were no copy of the nonverbal part of the complex predicate between the object and the verb, then PNI of the object could succeed. There are two ways in which this could arise. First, we could have the same structure and syntactic derivation as in (36), but with the head movement of the adjective triggered not only by the desire to form a complex predicate, but also by the  $V$  being an affix. If  $V$  is an affix, this privileges the copy of  $A$  that is adjoined to  $V$  for PF pronunciation, allowing the other copy to delete. When the copy of  $A$  in the  $AP$  deletes, so do all of the ordering statements that mention it, including the problematic ‘fruit’  $\leq$  ‘big’ derived from ordering the  $VP$  node. Then there is no contradiction, and we expect the order ‘fruit -

big+verb’. Hence, we predict that PNI could be possible with deadjectival verbs, deriving sentences like *This fruit big+CAUS* ‘This enlarges fruit.’<sup>16</sup> Unfortunately the prediction is unconfirmed at this point, since Tamil does not have deadjectival verbs (Asher 1982:202), and Sakha does, but the small amount of data I have concerning PNI with them is inconsistent.

The other way that PNI might be possible with a complex predicate would be if the nonverb is base-generated in a position adjoined to the verb, rather than arriving there by head movement from the complement position. I tentatively assume that this is the case in a Light Verb Construction (LVC) in Turkish, as discussed by Öztürk (2005:57). The LVC consists of an event-denoting nominal element together with the dummy verb ‘do’. The theme object of such as a complex predicate can be pseudo-incorporated:

(37) Doctor hasta-(y1) muayene et-ti.

Doctor patient-(ACC) examination do-PAST.3sS

‘The doctor examined the patient/did some patient-examining.’

The crucial difference between this case and the one in (36) is, I assume, that there is no relationship of thematic role assignment or syntactic selection between ‘do’ and ‘examination’ (cf. Öztürk 2005:56), as there is between ‘make’ and ‘big’. Therefore, ‘examination’ does not need to be projected as a complement of ‘do’ in the syntax; it can simply be adjoined to ‘do’ from the start (Öztürk 2005:87-88n.31). Then, ‘patient’ can adjoin to the verb in the syntax, and the structure can be consistently ordered at PF:

(38) a. Doctor [<sub>VP</sub> [<sub>NP</sub> patient ] examination+do ]] → noun incorporation

Doctor [<sub>VP</sub> [<sub>NP</sub> patient ] patient+examination+do ]

b. Ordering at PF:

examination  $\leq$  do in V

patient  $\leq$  V in V  $\rightarrow$  patient  $\leq$  examination

NP  $\leq$  V in VP  $\rightarrow$  patient  $\leq$  V  $\rightarrow$  patient  $\leq$  patient

*Consistent: patient – examination – do*

I conclude that this approach makes some rather detailed correct predictions about when PNI is possible and when it is not, with respect to issues of word order and linear adjacency. The basic consequences are correct, and those involving complex predicates of different types look promising and worthy of further investigation.

## 6. Verb movement in PNI constructions

In the last two sections of this paper, I turn to a point of crosslinguistic variation in the syntax of PNI. Although the adjacency requirement is quite strict in Tamil, Turkic, and Oceanic languages, it is not so strict in Hindi (despite Mohanan's (1995) original description). For example, the negative particle *nahiiN* can come between the PNied NP and the verb in negative clauses. Indeed this is the only possible order:

(39) Anu bacca nahiiN sambhaalegii. (Dayal 2011:137)

Anu child not look.after-FUT-3fS

‘Anu will not look after children.’

The key to understanding this apparent anomaly is, I believe, verb movement and how it interacts with PNI. The placement of the negative particle with respect to the verb in (40) suggests that V-to-T movement has moved the verb past negation, as in the classic Emonds (1978)/Pollock (1989) analysis of French (see Dwivedi 1991, Kunar 2003). In cases of constituent negation, *nahiiN* follows the negated phrase, as one might expect in a largely head-final language given that negation is a head (see (43a) below). When it is a

clause that is being negated, then, we might expect clause-negation order, and we almost get it: *nahiiN* follows everything *except* the finite verb. This makes sense if the underlying structure is [[[Subject Object Verb] Neg ] Tense] and V moves to T to give [[[Subject Object -- ] Neg ] Verb+Tense]. Furthermore, in some auxiliary constructions, negation can appear between the main verb and the auxiliary (NP verb-*nahiiN*-aux+T order), as expected if only the auxiliary verb moves past Negation to T, as in French.<sup>17</sup>

So V-raising is motivated apart from PNI in Hindi. The question then is how does this verb raising interact with PNI. The syntactic derivation would be as in (40).

- (40) [TP Anu [XP [VP child watch ] NEG ] Tense+AGR ] → (NI)  
 [TP Anu [XP [VP child child+watch ] NEG ] Tense+AGR ] → (V-to-T)  
 [TP Anu [XP [VP child child+watch ] NEG ] watch+Tense+AGR ]

At PF we are allowed to delete the lower copy of the verb, given that the higher one satisfies the affixation requirements of T. (Since this deletion is at PF only, ‘child+watch’ survives at LF to be interpreted as a complex predicate at that interface.) This gives (41).

- (41) [TP Anu [XP [VP child child+---- ] NEG ] watch+Tense+AGR ]

And this can easily be linearized to give (39), by normal linearization principles for a head final language, with ‘child’ uttered only once, before negation.

Generalizing on this result, we expect that head movement of the verb can have the effect of breaking up a PNI N+V cluster, although XP movement of the NP cannot, as we saw in section 5. Dobrovie-Sorin et al. (2006:62) note this in Spanish and Romanian, writing that “in Romance languages, the verb itself undergoes head movement, breaking the adjacency between the verb and the object, even if the object is a bare NP.” As a result, bare singulars can be separated from the verb by an adverb on the edge of the VP:

(42) Juan tiene todavía casa en su ciudad natal. (Spanish)

Juan has still house in his village home

‘Juan still has [a] house in his home village.’

So this innovation is valid for Spanish and Romanian as well as for Hindi.

### 7. Variation in scrambling in PNI constructions

Dayal (2011:137) also observes a more radical problem for the adjacency condition on PNI. She shows that PNied NPs in Hindi can be scrambled, given the right pragmatics:

(43) a. kitaab anu becegi, akhbaar nahiiN (Dayal 2011)

book Anu sell-FUT.3fS newspaper not

‘Anu will sell books, not newspapers.’

b. kitaab anu bhii becegi.

book Anu also sell-FUT.3fS

‘Anu will also sell books.’

c. kitaab anu zaroor becegi.

book Anu definitely sell-FUT.3fS

‘Anu will definitely sell books.’

The result is the NP being separated from the verb. Hindi seems to contrast with Tamil in

this respect. (45b-d) are analogs of Dayal’s examples, but are not considered acceptable:

(44) a. Maala kaṇḍippaa pustagam vi-tt-aa. (Tamil)

Mala definitely book sell-PAST-3fS

‘Mala definitely sold books.’

b. ?? Pustagam Maala kaṇḍippaa vi-tt-aa.

book Mala definitely sell-PAST-3fS

‘Mala definitely sold books.’

- c. \*PustagamMaala vi-tt-aa, pazam ille.

book Mala sell-PAST-3fS fruit NEG

‘Mala sold BOOKS, not fruit.’

- d. \*PustagamMaala-um vi-tt-aa.

book Mala-also sell-PAST-3fS

‘Mala also sold books.’

One might worry, then, that I have done too good a job of deriving the adjacency condition. If it follows from fundamentals of how complex predicates are represented at LF plus how chains can be realized at PF, how can languages differ in this respect?

I claim that the freer word order in Hindi is a further consequence of the fact that V-to-T raising has broken up the NP-V cluster. Once this happens, the PNied NP can be freed up to scramble leftward. The syntactic steps of the derivation would be as in (45), with scrambling added to incorporation and verb raising.

- (45) [TP Anu [VP definitely [VP book sell ]] Tense+AGR ] → (NI)  
[TP Anu [XP definitely [VP book book+sell ]] Tense+AGR ] → (V-to-T)  
[TP Anu [XP definitely [VP book book+sell ]] sell+Tense+AGR ] → (scrambling)  
[TP book Anu [XP definitely [VP book book+sell ]] sell+Tense+AGR ]

The lower copy of the NP ‘book’ is deleted at PF, as in normal XP chains. That was not enough to allow the scrambling before, because the copy of ‘book’ adjoined to the verb survived to create a linearization contradiction. But now let us consider more carefully what counts as the lower member of the verb-movement chain for purposes of deletion. Is it the minimal verb, consisting only of the verb stem, as I assumed without comment in

the previous section, or is it the maximal verb, consisting of the verb stem plus anything that is adjoined to it to form a complex  $X^0$ ? Suppose we assume that either option is possible. This kind of indeterminacy is familiar in the syntax literature, where there is often some ambiguity as to whether something adjoined to a phrase counts as inside that phrase or outside it (see, for example, Chomsky 1986). If then it is possible to delete the larger V in this structure, then (45) can be represented at PF as (46) prior to linearization.

(46) [TP book Anu [XP definitely [VP -- -- ]] sell+Tense+AGR ]

This can be linearized to give (43c), by normal linearization principles. In particular, there are no longer two copies of the PNied NP to worry about, since one was deleted along with the lower copy of the verb and another as the lower trace of an XP chain.<sup>18</sup>

Given this account of Hindi, I had better hope that V-to-T raising does not happen in Tamil and other languages in which the adjacency restriction is visibly in force. These languages should be more like English than like French in this respect. There is evidence that this is true. In Tamil, the usual form of negation is a particle that can stand alone ((47)) and that is at the right edge of a nonverbal constituent that it negates ((48)).

(47) *Ille, naan viitt-ukku poo-r-een.* (Asher and Annamalai 2002:25)

NEG I home-DAT go-PRES-1sS

‘No, I am going home.’

(48) *Idu en viidu ille.* (see also (44c))

This my house NEG

‘This is not my house.’

Tamil is like Hindi in these respects. *Ille* is thus the sort of particle that one can imagine a verb raising over on its way to T. But Tamil never has [... NP *ille* V+tense+AGR] order,

the way Hindi does. Rather, *ille* must follow the verb, and it blocks any overt realization of tense and subject agreement, the verb showing up in infinitival form:

(49) Baala poo-ga-lle. (Schiffman 1999:143)

Baala go-INF-NEG

‘Bala didn’t go, isn’t going.’

So we have no evidence of verb raising here. On the contrary, we could say that Tamil normally has “affix-lowering” (however this is analyzed theoretically), and negation blocks this in Tamil, just as it does in English (Pollock 1989). In English, the stranded Tense and agreement are rescued by *do*-insertion; in Tamil, the stranded affixes are simply left unpronounced. Given that verb raising does not happen in Tamil, there is no motivation for deleting the (noun+)verb in its base position, and adjacency is needed for linearization of the noun root, as before. This explains the Tamil-Hindi difference in scrambling in terms of an independently observable difference between the languages.

This account can carry over to other languages as well. For example, negation in Sakha shows up (as a suffix) after the verb root and before T, consistent with saying that the verb does not raise past it (Vinokurova 2005:207). Sakha also has a particle (*daqany* ‘so much’) that appears between a verb and auxiliary, but after the inflected verb (e.g., ‘Masha soup like-PTPL so.much AUX-past-3sS’ and ‘Masha soup like-past-3sS so.much’, but not ‘Masha soup so.much like-past-3sS’). These orders also suggest “affix lowering” rather than verb raising. Moreover, Massam’s (2001) account of predicate initial order in Niuean in terms of VP moving to Spec, TP implies that V does not move to T in this language. So the assumption that V-to-T movement does not happen in languages where the PNied NP cannot scramble checks out well.

In contrast, another language that seems to pattern with Hindi in these respects is Amharic. Amharic is known to allow bare nouns as objects with number neutral interpretations (Kapeliuk 1994:10-13, Leslau 1995:179, Kramer 2009:169).

- (50) Lidz-u məs'haf wəssəd-ə.  
 child-DEF book take.PF-3mS  
 'The child took a book/some books.'

Such objects take narrow scope with respect to repetitive adverbs, a sign of PNI in the semantic sense, the noun being interpreted as a complex predicate with the verb.<sup>19</sup>

- (51) Ləmma əndəgəna əndəgəna məs'haf gəzz-a.  
 Lemma again again book buy.PF-3mS  
 'Lemma repeatedly bought book(s).' (different books in different events)

This number-neutral, lowest scope meaning is lost if there is an indefinite determiner with the object, or if the bare NP is a subject not adjacent to the verb:

- (52) Ləmma əndəgəna əndəgəna and məs'haf gəzz-a.  
 Lemma again again a book buy.PF-3mS  
 'Lemma repeatedly bought a book.' (the same book over and over again)

- (53) a. Wiɣɣa Almaz-in əndəgəna əndəgəna nəkkəs-at.  
 Dog Almaz-ACC again again bit.PF(3mS)-3fO  
 'A dog bit Almaz again and again.' (the same dog over and over)

Hence the number-neutral interpretation is a sign of PNI, not mere indefiniteness or being a bare singular NP per se. Amharic therefore seems to have PNI comparable to the other languages discussed.

With respect to verb movement, Amharic seems to pattern with Hindi. Negation in Amharic is a particle (written as a prefix) that comes before the main verb, consistent with V raising past it to T.

- (54) *kä-hullu yä-mmiyans-ä-w ləḡ mən-əmm al-agäññ-ä-m.*  
 from-all REL-little-3mS-DEF child anything.ACC-FOC NEG-get-3mS-FOC  
 ‘The littlest child did not get anything.’ (Leslau 1995:293)

Indeed, there is even evidence of  $V \rightarrow T \rightarrow C$  movement in Amharic, in that complementizers show up before the finite verb but after all of its complements and modifiers, exactly where negation does in Hindi:

- (55) *māk<sup>w</sup>ännən-u wättaddär-u-n bet-u ənd-i-hed fäqqäd-ä-ll-ät.*  
 officer-DEF soldier-DEF-ACC house-DEF that-3mS-go.IMPF permit-to-3mO  
 ‘The officer permitted the soldier that he go home.’ (Leslau 1995:690)

And if there is an auxiliary, then one can get Verb-C+Aux order, as expected. (See also Baker and Kramer 2010, in prep for a fancier reason to say that verbs raise in Amharic.)

Given this, we expect the scrambling of PNied NPs to be possible in Amharic, as in Hindi. And that is confirmed: (56) shows caseless bare NP objects separated from the verb by an adverb and/or the subject; these NPs still have the distinctive number neutral, lowest scope interpretation that is characteristic of PNI.

- (56) a. *Ləmma mäs’əhaf əndəgəna əndəgəna gəzza.*  
 Lemma book again again buy.PF-3mS  
 ‘Lemma repeatedly bought book(s).’ (different books in different events)
- b. *Məs’əhaf Ləmma əndəgəna əndəgəna gəzz-a, magazine gən mənnəm.*  
 book Lemma again again buy.PF-3mS magazine not-any

‘Its books that Lemma bought repeatedly, not magazines.’ (different books)

I conclude that the expected correlation between verb raising and the possibility of scrambling the PNied NP holds over this nontrivial set of languages (five, each from a different family). Proving that it is truly universal must be left to future research.<sup>20</sup>

## 8. Concluding Remarks

In this paper, I have argued that there is more to pseudo-noun incorporation than simply generating an NP as the complement of a verb and never moving it from that position, as proposed by Massam (2001) and others. I showed that PNI is subject to additional adjacency constraints, such that the head noun inside the NP must be string-adjacent to the verb in the derived structure. This can be explained if the head of the NP moves “covertly” to adjoin to the verb to create a complex  $X^0$  that is interpreted as a complex predicate at LF. In addition to indicating which nouns are to be interpreted as predicate modifiers rather than arguments in a transparent way, this can be used to derive the syntactic distinctives of the construction. In particular, the surface adjacency conditions follow from constraints on linearization, such that a single pronunciation of the noun satisfies both the ordering conditions fixed inside NP and the ordering conditions fixed inside the complex verb. If, however, the language has V-raising to T, this can loosen the connection between the PNI and the verb, allowing the NP to scramble way from the verb in Hindi and Amharic, but not in Tamil, Sakha, or Niuean. Taken together, this cluster of ideas advances, I hope, our understanding of both the syntax of pseudo-noun incorporation and the factors that influence how syntactic structures are realized at PF.

How general might this account prove? Can the idea of movement needing to be string vacuous to avoid linearization contradictions explain other adjacency phenomena

in natural language? Answering this will require further research, of course. But a good guess is that it will account for some other adjacency phenomena, but not all. More specifically, it should be fairly easy to extend it to other instances in which adjacency is related to the formation of a complex predicate. I have already taken one step in this direction by saying that string-adjacency between a predicate adjective and a governing verb like ‘be’, ‘become’, or ‘make’ can be explained in the same way as PNI, assuming that the predicate A (or N) adjoins covertly to the linking verb (see (8), (10), (36)). Other plausible uses of the idea might be to explain adjacency between the verb and an adposition in pseudopassive constructions (e.g., *George Washington slept (often) in this bed* vs. *This bed was slept (\*often) in*) (Hornstein and Weinberg 1981) and any adjacency effects that hold between the two verbs in a restructuring construction (Rizzi 1982) (pace V-to-T movement). If these pan out, my account could have significant generality.

However, it is not likely that all linear adjacency constraints in natural language are to be explained in this way. For example, it is well known that the direct object in English must be strictly adjacent to the verb, with no adverb or PP intervening (Stowell 1981).<sup>21</sup> However, this is unlikely to have anything to do with head movement or complex predicate formation, given that it holds for all nominals in English—definite DPs, pronouns, proper names, quantified expressions, etc.—not just those interpreted as predicates. One could only account this pattern along the lines discussed here if one assumes that all English nominals have some covert head (Kase??) that incorporates into the verb and needs to be linearized consistently—an assumption for which I know of no compelling evidence. Unless that sort of extension turns out to be warranted, it is likely that other, less strict adjacency phenomena should still be explained in the usual ways—

like X and Y being adjacent because X is the complement or specifier of Y and neither moves away. Different kinds of adjacency then will have different formal explanations.

## Notes

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Abbreviations used in the glosses include: ABS, absolutive case; ACC, accusative case; ADV, adverbial; AGR, Agreement; AOR, aorist; C, complementizer; DAT, dative case; DEF, definite; ERG, ergative; FEM, feminine; FOC, focus; FUT, future tense; IMPF, imperfective aspect; INF, infinitive; LK, linker; LOC, locative case; NEG,

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negative; PASS, passive; PAST, past tense; PF, perfective aspect; PL, plural; PRES, present tense; PTPL, participle; REL, relative complementizer; SG, singular; Unm, unmarked case; Wh.OBJ, wh-agreement with object. Agreement affixes are often expressed by a number that indicates person (1, 2, 3), a lower case letter that indicates gender or number (m, f, n, s, p), and an upper case letter that indicates the grammatical function (S, O, or P (possessor)) of the agreed-with nominal. C&L stands for Chung and Ladusaw 2004. For Tamil, I use the spelling conventions of Asher and Annamalai 2002, and, as much as possible, I have “normalized” the words in my examples with their vocabulary list rather than trusting my own phonological transcriptions.

<sup>1</sup> Öztürk 2005:67-68 also shows that a nominal containing *bir* ‘one, a’ can undergo PNI in Turkish, showing that it can behave more like an adjective than like a true determiner. This is also possible with *oru* ‘one, a’ in Tamil.

<sup>2</sup> Other considerations taken to point toward PNI rather than NI are the possibility of conjoining caseless NPs (see Öztürk 2005:39 for Turkish, Massam 2001 for Niuean, C&L:87 for Chamorro, Dobrovie-Sorin et al. 2006:61 for Spanish and Romanian, Dayal 2011:136-137; it is also possible in Tamil) and the possibility of having a focus particle between the N and the V (see Öztürk 2005:39 for Turkish, also true in Sakha). These possibilities are not fully analyzed here. I tentatively take conjunction to be a multi-dimensional structure, such that [Subj NP1 and NP2 V] is well-formed if and only if [Subj NP1 V] and [Subj NP2 V] are both well-formed. Focus particles may not be a problem if they cliticize to the noun at PF prior to linearization, and hence do not count as distinct elements for the linearization algorithm. I leave it to future research to work out these ideas, or better ones.

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<sup>3</sup> Öztürk 2005:154-156 claims that similar structures exist in Turkish. She does not say how they interact with PNI, however.

<sup>4</sup> In a head initial language, the base order (pace V-raising in Larsonian shells) is verb-object-PP/AP. Since the resultative phrase does not come between the theme and the verb, we do not expect it to inhibit PNI in such a language. Massam (2001) does not give any relevant examples in Niuean, and her claim that PP arguments adjoin to VP so that they are not carried along by VP-fronting would complicate the issue. But (i) shows that the expectation is true in Spanish (Dobrovie-Sorin et al. 2006:54).

- (i) Van a poner-le ascensor al edificio.  
go.3pS to put-it.DAT elevator to.the building  
'They are going to put (an) elevator in the building.'

<sup>5</sup> PNI in Chamorro is limited to the two verbs *gäi*- 'have' and *täi*- 'not have' (C&L:82), and is thus more restricted than in the other languages discussed. Spanish allows more options than Chamorro, but not as many as Sakha and Tamil, PNI being limited to a fairly broad class of transitive possession verbs (Dobrovie-Sorin et al. 2006:55-56). Niuean does not limit PNI to existential/possessive verbs, but PNI with these verbs has slightly different properties, in terms of being able to antecede personal and relative pronouns (Massam 2011). Dayal (2011) discusses some less systematic lexical restrictions in Hindi. I have nothing to offer in terms of understanding these lexical restrictions in languages that have them, and assume they are orthogonal to the adjacency issue.

<sup>6</sup> In fact, C&L:145 show that the adjacency between verb and noun is stronger in Chamorro than the adjacency of noun and modifier, since a lowered subject can appear

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between the incorporated N and its modifier, although that is not its most typical position. This may be due to a kind of relative clause extraposition of the modifier.

<sup>7</sup> Specifically, the Massam-like alternative that they consider for Chamorro, and adopt for Maori, is one in which the verb and NP form a kind of compound verb—not a VP, as in Massam’s account. This difference is not crucial for my purposes, however.

<sup>8</sup> I leave open exactly what the scope of (24) might be beyond the domain considered here. In Tamil and Sakha, one seems to get a narrowest scope interpretation for the object if and only if it has the syntactic properties of PNI (caselessness and adjacency to the verb). However, it is conceivable that particular languages make available other ways of marking a nominal as being interpreted as a predicate at LF. For example, one might say that occupying the special “predicate operator” position before the verb complex is an indication that an NP is to be interpreted as a predicate in Hungarian (Farkas and de Swart 2003), and being marked with the determiner *he* is a sign of this in Maori (Chung and Ladusaw 2004:ch.2). But both these languages have other complexities that might point to a closer relationship to PNI as analyzed here: the predicate operator in Hungarian is typically adjacent to the verb, and Maori DPs headed by *he* are only possible as direct objects and as subjects of passive and unaccusative verbs (C&L:56-60), making it conceivable that they undergo some sort of covert NI. The exact relationship between these constructions and those focused on here must thus remain open for now.

<sup>9</sup> The literature on true NI (especially Baker 1996) shows that sometimes an NI structure in a language like Mohawk is interpreted as a complex predicate, but sometimes it is not: an incorporated noun can also be interpreted as a normal argument of the verb, definite or kind-like. This suggests that, when NI is triggered for morphological reasons enforced at

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PF, then the copy of the noun that is adjoined to the verb can be deleted at LF. When that happens, the structure is not interpreted as a complex predicate, according to (24). Since the framework allows different copies in a chain to be interpreted at PF and at LF (Bobaljik 2002), mismatches between morphological (PF) incorporation and “semantic incorporation” are possible.

Left open here is whether the copy of N inside the NP is also interpreted at LF, and, if not, how the adjective inside the NP is included in the interpretation. There are several possibilities that could work. One is interpreting the noun adjoined to the verb not as not saturating the verb’s internal argument, but as combining with it by Chung and Ladusaw’s (2004) Restrict. Then the interpretation of (20) would be either ‘I flower-picked a yellow flower’ or ‘I flower-picked a yellow one’, depending on whether the noun is also interpreted inside the NP or not. Alternatively, one could say that when there is a stranded adjective, the interpretation of the complex verb is type-shifted so that it can absorb the adjective into the complex predicate as well, as van Geenhoven (1996) does for modifiers stranded by NI in Greenlandic. Then the interpretation of (20) would be something like ‘I yellow-flower-picked.’ This is a topic for future research. (I thank Veneeta Dayal, personal communication, for discussion of these possibilities.)

<sup>10</sup> Some languages apparently do allow the PNI of transitive subjects, notably Turkish (Kornfilt 1997:396-397, Öztürk 2005:42), although Kornfilt says it is rather rare. Typical examples involve less agentive subjects (e.g. ‘Bee(s) stung Ali’), which is probably significant. There are also a small number of languages that are said to allow the morphological incorporation of similar subjects, e.g. Athapaskan languages. But I have no direct experience with such languages, and thus leave this point of variation aside.

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Massam 2001 shows that instrumental and means nominals sometimes undergo PNI in Niuean, but she does not go into much detail about this construction, and neither do I. Hungarian allows not only transitive subjects but also various obliques to “incorporate”. This is some reason for doubting that Hungarian has PNI in the same sense as discussed here; see note 8 for a tentative suggestion.

<sup>11</sup> One clear difference between PNI and true NI, however, is that plural nouns can be PNied in Hindi, Tamil, and Turkish (Kornfilt 1997:279), although not in Sakha, Niuean (Massam 2001) or Kannada (Lidz 2006:25). In contrast, plural nouns cannot be morphologically incorporated in any known language. This might imply that the constraint against the latter is morphological, rather than syntactic in nature (e.g., it should not be derived from “Li’s Generalization”, as I suggested in Baker 2008:36.)

<sup>12</sup> Although I do not pursue the matter here, analyzing PNI as involving covert noun incorporation might also play a role in explaining why the PNied NP is not marked for accusative case in Sakha and Tamil. For purposes of this paper, any plausible account of so-called “differential object marking” will do, such as saying that nominals that remain in VP are not assigned accusative case, or saying that accusative case is only assigned to (or only realized at PF on) DPs, not NPs. However, the existence of accusative case on an NP that stays in VP in (7a) suggests that these familiar accounts may not be fully adequate. In Baker (in progress), I explore the idea that the caselessness of the PNied NP in these languages stems from the fact that phi-features can be deleted on the trace of noun incorporation, as shown for overt NI in Baker, Aranovich, and Golluscio 2005.

<sup>13</sup> Another way of realizing NI chains at PF that has been proposed in the literature is inserting two different roots in the two positions. This is Haugen’s (2009) proposal for

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generating certain kinds of “classifier incorporation”, including a certain possessive construction in some Uto-Aztecan languages. I assume here that lexical roots are inserted earlier, before movement, so this option is not available. I would be inclined to analyze the Uto-Aztecan possessive constructions as having verbs that take three arguments underlyingly (“x has y as a z”), so that the incorporated nominal and the surface object express distinct arguments of the verb, not two members of the same chain.

<sup>14</sup> Note however that I do not adopt Fox and Pesetsky’s revised version of (29), which is designed to get the fact that the highest copy in a chain is the one that is pronounced directly out of the linearization principle. Rather, I assume that nontrivial chains do pose a serious potential problem for linearization at PF, one that must be resolved somehow — by deletion of the lower copy in many cases of phrasal movement, by string vacuous movement in the case of PNI, and so on.

<sup>15</sup> Compare Fox and Pesetsky (2004:13) who, in considering an element deleted by ellipsis, write: “On such a scenario, any ordering statement that makes reference to X ... has no impact on pronunciation. For ease of exposition, we can assume that these ordering statements are generated, but are deleted as a by-product of ellipsis.” I am making the same assumption about elements removed by the deletion of lower copies.

<sup>16</sup> Of course, if the verb is derived from the adjective in the lexicon, we make the same prediction. No clear argument for or against lexical word formation is expected here.

<sup>17</sup> However, Object-Neg-Verb-Aux-T order is also possible (Kunar 2003:ch.2), suggesting that either the main verb and auxiliary can optionally move as a unit in Hindi, or that Negation can be generated lower, above VP but below a participle head and Aux.

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<sup>18</sup> One might entertain two different views about the “option” of deleting the N adjoined to V along with the trace of verb raising: either all languages freely allow deletion of the larger or smaller verb, or languages specify one or the other parametrically. If the latter possibility is correct, we might expect to find a language in which the PNied NP is held close to the base position of the verb, but not to its surface position. Such a language could be like Hindi with respect to negation as in (39), but like Tamil in not allowing PNied NPs to scramble ((44)). I do not know if there are such languages or not. (Spanish as shown in (42) is a possibility, but it is not clear that Spanish has scrambling anyway.)

<sup>19</sup> I thank Mengistu Amberber (personal communication) for insightful discussion of the Amharic facts. The sentences below that are not otherwise attributed come from him.

<sup>20</sup> It is not crucial to the analysis that the verb raise all the way to T (or C): verb movement only to a lower functional head, such as Aspect, should be enough to permit scrambling of the PNied NP as well. (I leave open whether raising from one V position to another within Larsonian shells would have this effect or not.)

<sup>21</sup> I thank Guglielmo Cinque (personal communication) for raising the question of whether my account would extend to this adjacency effect in English.

## References

- Asher, R.E. 1982. *Tamil*. Amsterdam: North Holland Publishing Company.
- Asher, R.E., and Annamalai, E. 2002. *Colloquial Tamil*. London: Routledge.
- Baker, Mark. 1988. *Incorporation: a theory of grammatical function changing*. Chicago: University of Chicago Press.
- Baker, Mark. 1996. *The polysynthesis parameter*. New York: Oxford University Press.
- Baker, Mark. 2003. *Lexical categories: Verbs, Nouns, and Adjectives*. Cambridge: Cambridge University Press.
- Baker, Mark, Aranovich, Roberto, and Golluscio, Lucia. 2005. Two types of syntactic noun incorporation: noun incorporation in Mapudungun and its typological implications. *Language* 81:138-176.
- Baker, Mark. 2008. *The syntax of agreement and concord*. Cambridge: Cambridge University Press.
- Baker, Mark, and Vinokurova, Nadezhda. 2010. Two modalities of case assignment in Sakha. *Natural Language and Linguistic Theory* 28:593-642.
- Bittner, Maria. 1994. *Case, scope, and binding*. Dordrecht: Kluwer.
- Bobaljik, Jonathan. 2002. A-Chains at the PF-Interface: Copies and "Covert" Movement. *Natural Language and Linguistic Theory* 20:197-267.
- Chierchia, Gennaro. 1998. Reference to kinds across languages. *Natural language semantics* 6:339-405.
- Chomsky, Noam. 1986. *Barriers*. Cambridge, Mass.: MIT Press.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, Mass.: MIT Press.
- Chung, Sandra, and Ladusaw, William. 2004. *Restriction and Saturation*. Cambridge, Mass.: MIT Press.
- Dayal, Veneeta. 2001. Number marking and (in)definiteness in kind terms. *Linguistics and Philosophy* 27:393-450.
- Dayal, Veneeta. 2011. Hindi pseudo-incorporation. *Natural Language and Linguistic Theory* 29:123-167.
- Dixon, R.M.W. 1988. *A grammar of Boumaa Fijian*. Chicago: University of Chicago Press.
- Dobrovie-Sorin, Carmen, Bleam, Tonia, and Espinal, M. Teresa. 2006. Bare nouns, number, and types of incorporation. In *Non-definiteness and plurality*, eds. S. Vogeeler and Liliane Tasmovski, 51-81. Amsterdam: John Benjamins.
- Emonds, Joseph. 1978. The verbal complex V'-V in French. *Linguistic Inquiry* 9:151-175.
- Fox, Danny, and Pesetsky, David. 2004. Cyclic linearization of syntactic structure. *Theoretical Linguistics* 31:1-46.
- Haugen, Jason. 2009. Hyponymous objects and late insertion. *Lingua* 119:242-262.
- Kapeliuk, Olga. 1994. *Syntax of the noun in Amharic*. Wiesbaden: Harrassowitz Verlag.
- Kayne, Richard. 1994. *The antisymmetry of syntax*. Cambridge, Mass.: MIT Press.
- Kornfilt, Jaklin. 1997. *Turkish*. New York: Routledge.
- Kramer, Ruth. 2009. Definite markers, phi-features, and agreement: a morphosyntactic investigation of the Amharic DP, UCSC: Ph.D. dissertation.
- Larson, Richard. 1988. On the double object construction. *Linguistic Inquiry* 19:335-392.
- Leslau, Wolf. 1995. *Reference grammar of Amharic*. Wiesbaden: Harrassowitz.

- Lidz, Jeffery. 2006. The grammar of accusative case in Kannada. *Language* 82:10-32.
- Longobardi, Giuseppe. 1994. Reference and proper nouns. *Linguistic Inquiry* 25:609-666.
- Marantz, Alec. 1988. Clitics, morphological merger, and the mapping to phonological structure. In *Theoretical morphology*, eds. Michael Hammond and Michael Noonan, 253-270. New York: Academic Press.
- Massam, Diane. 2001. Pseudo noun incorporation in Niuean. *Natural Language and Linguistic Theory* 19:153-197.
- McFadden, Thomas. 2004. The position of morphological case in the derivation, University of Pennsylvania: Ph.D. dissertation.
- Mithun, Marianne. 1984. The evolution of noun incorporation. *Language* 60:847-893.
- Mohanan, Tara. 1995. Woodhood and lexicality: noun incorporation in Hindi. *Natural Language and Linguistic Theory* 13:75-134.
- Nunes, Jairo. 2004. *Linearization of chains and sideward movement*. Cambridge, Mass.: MIT Press.
- Öztürk, Balkiz. 2005. *Case, referentiality and phrase structure*. Amsterdam: John Benjamins.
- Pollock, Jean-Yves. 1989. Verb movement, Universal Grammar, and the structure of IP. *Linguistic Inquiry* 20:365-424.
- Rizzi, Luigi. 1982. *Issues in Italian syntax*. Dordrecht: Foris.
- Schiffman, Harold. 1999. *A reference grammar of spoken Tamil*. Cambridge: Cambridge University Press.
- Stowell, Timothy. 1981. Origins of phrase structure, MIT: Ph.D. dissertation.
- Van Geenhoven, Veerle. 1998. *Semantic incorporation and indefinite descriptions: semantic and syntactic aspects of noun incorporation in West Greenlandic*. Stanford, CA: CSLI Publications.
- Vinokurova, Nadezhda. 2005. Lexical categories and argument structure: a study with reference to Sakha, University of Utrecht: Ph.D dissertation.