LARSONIAN DP RECURSION AND NP-*ING* CONSTRUCTIONS

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0. Introduction*

I will argue here that Larsonian category recursion holds the key to understanding the peculiar properties of NP-*ing* constructions By NP-*ing* constructions I mean, following Reuland (1983), those sentential gerundive constructions which have overt subjects excluding Possessive subjects Those with Possessive subjects will be called Poss-*ing* constructions

Our central claim is that NP-*ing* constructions are DPs, just like Poss-*ing* constructions, and involve DP recursion as is proposed in Authier (1992), Watanabe (1992), and Browning (1996) for CPs I would suggest that the differences between NP-*ing*'s and Poss-*ing*'s come from just one thing, the Case feature which the *-ing* has

The goal of this paper is to treat NP-*ing* constructions in the same way as other sentential gerundives as much as possible, and to try to explain the peculiarities of NP-*ing*'s, which are left unaccounted for in the Minimalist framework (Chomsky 1991, 1993, 1995, and Chomsky and Lasnik 1993)

The organization of this article is as follows in section 1 we will make a brief survey of the peculiarities of NP-*ing*'s, then our analysis will be given in section 2. Section 3 explores the implications of our analysis, paying special attention to enlightened self-interest suggested by Lasnik (1995) Section 4 is a conclusion

1. Peculiarities of NP-*ing* Constructions

In Section 1, we will see the peculiarities of NP-*ing* constructions

1 1 Similarities with Poss-*ing* Constructions

First, as for the distribution of NP-*ing*'s, they behave just like Poss-*ing*'s, and unlike infinitives or tensed clauses They appear as a complement to a verb or a preposition, and as a subject of a tensed clause, as can be seen in (1)

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(1) a John liked [Mary having read *The Minimalist Program* carefully]
b John counted on [Mary having read *The Minimalist Program* carefully]
c [Mary having read *The Minimalist Program* carefully] is an impossible dream

The comparable examples of Poss-*ing*'s are given in (2)

(2) a John liked [Mary's having read *The Minimalist Program* carefully]
b John counted on [Mary's having read *The Minimalist Program* carefully]
c [Mary's having read *The Minimalist Program* carefully] was a true surprise

Furthermore, NP-*ing*'s can be located in the subject position of ECM complement, like Poss-*ing*'s, as can be seen in (3a)

(3) a John believes [Mary reading *The Minimalist Program* carefully] to be impossible
b John believes [Mary's reading *The Minimalist Program* carefully] to be impossible
c *John believes [(for) Mary to read *The Minimalist Program* carefully] to be impossible
d *John believes [(that) Mary read *The Minimalist Program* carefully] to be impossible

(3c, d) show that infinitives and tensed clauses are excluded from this position.

1 2 Differences from Poss-*ing* Constructions

Next, although NP-*ing*'s and Poss-*ing*'s have a similar distribution, there is a striking difference in the possibility of extraction from within The sentences in (4) show that the verb *like* can take both Poss-*ing* and NP-*ing* as its complement.

(4) a John liked [Mary's having read *The Minimalist Program* carefully]
b John liked [Mary having read *The Minimalist Program* carefully]

However, Poss-*ing* complements allow an argument to be extracted only marginally, while NP-*ing* complements do so without reducing acceptability

(5) a ??What did John like [Mary's having read *t* carefully]?
b What did John like [Mary having read *t* carefully]?

Furthermore, although adjuncts can never go out of Poss-*ing* constructions, they can move out from NP-*ing* even though marginally

(6) a *How did John like [Mary's having read *The Minimalist Program t*]?
b ?How did John like [Mary having read *The Minimalist Program t*]? [1]

1 3 Difference from ECM Complements

Third, the subject of NP-*ing* cannot be passivized, as shown in (7b)

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[1] Some speakers judge (6b) to be almost unaccepatble This will be caused by the difficutly of parsing What is crucial for us, however, is that even such speakers admit that (6a) is much worse than (6b)

(7) a John understands [Mary having departed yesterday]
b *Mary is understood [*t* having departed yesterday] (Reuland 1983 119)

This is a clear contrast with ECM complement in (8)

(8) a John understands [Mary to have departed yesterday]
b Mary is understood [*t* to have departed yesterday]

2. Unified Analysis of Sentential Gerundives

In section 2, I would like to present a unified analysis of sentential gerundives, and show that the peculiarities of NP-*ing*'s we have just seen can be accounted for in the framework of the Minimalist Program.

First, I will make the following assumption.

(9) *-ing* in a sentential gerundive is D (null hypothesis)

Reuland (1983) proposes that NP-*ing*'s are clauses, but his proposal is conceptually undesirable in that he has to assume a completely different structure for NP-*ing*'s from a structure of Poss-*ing*'s Furthermore, it cannot explain the distributional properties of this construction in the current framework

Notice here that (9) is a null hypothesis, since this is independently necessary for the structure of Poss-*ing*'s However, there will arise a question. if NP-*ing*'s are DPs, then how can their Cases be assigned or checked? This is not a so serious question if we think of *there* and bare NP-adverbs and know that D can be Caseless, as in (10)

(10) D can be Caseless (e g *there*, bare NP adverbs)

Then, let us simply make an assumption in (11)

(11) *-ing* in NP-*ing* has no Case feature

We need one more assumption such as (12) here

(12) Poss-*ing*'s are definite expressions, while NP-*ing*'s are not

This will be a natural assumption since Possessive Case usually makes the whole DP definite expression Melvold (1991) suggests that the general unacceptability of extraction from within definite DPs can be accounted for by assuming the following·

(13) . the spec of a DP whose head is [+definite] is filled by an iota operator at all levels of representation. (Melvold 1991 111)

Adopting and modifying this idea, let us say as follows

(14) The Spec of indefinite DP must be empty

We here have the general picture of sentential gerundives in (15)

(15) a Poss-*ing* — Possessive Case (to the subject) — Case (to be checked) — definite
b NP-*ing* — no Case (to the subject) — no Case (to be checked) — indefinite

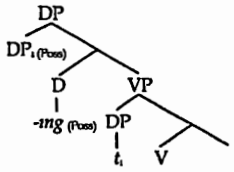
Thus I assume that there is some kind of inferential relation among these properties if we know some *-ing* has Possessive Case, we infer that it has some Case to be checked and that it will make the whole DP a definite expression.

2.1 Poss-*ing* Constructions

Let us now consider the derivation of Poss-*ing* constructions If we assume that *-ing* in this structure has such a feature specification as in (16), we will have a derivation such as shown in (17) [2]

(16) *-ing* in Poss-*ing*'s {categorial feature D, possessive Case}

(17)



We assume here that Case features of DPs are strong in English following Koizumi (1995), then the VP-internal subject is raised overtly to the Spec of DP and checks off the Case feature Notice that the Spec is filled in this structure

2.2 NP-*ing* Constructions

Next, we will take up NP-*ing* constructions We assume here that *-ing* in this structure has such a feature specification as in (18)

(18) *-ing* {categorial feature D}

The *-ing* in this construction has only a categorial feature D Remember that we assumed (11) above, repeated here as (19)

(19) *-ing* in NP-*ing* has no Case feature (=(11))

Although the feature specification in (18) is simpler than (16), the derivation is not so simple as might be expected, because the Case of the subject DP in NP-*ing* has to be checked somehow

The *-ing* itself never assigns Case, so the subject has to be raised to a higher position In fact, we have some evidence showing that at some point of derivation the subject of NP-*ing*'s c-commands adverbials in the matrix VP, as can be seen in (20)

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[2] Alternatively, in this case, we might adopt a DP recursion structure as we will see it in (25) below Then we can make room for [+definite] operator in accordance with Meldold's (1991) suggestion

(20) a *I understand [that they$_i$ are liars] during each other's$_i$ attacks
b ?I defended them$_i$ during each other's$_i$ attacks
c ?I understand [them$_i$ to be liars] during each other's$_i$ attacks
d ?I understand [them$_i$ being liars] during each other's$_i$ attacks

(20a) shows that the subject of the embedded tensed clause cannot c-commands *each other* in the prepositional phrase (20b) indicates that the DP object can bind *each other* ECM complement in (20c) patterns like the DP object in this respect. Crucially for our analysis, (20d) shows that NP-*ing* complement behaves like the DP object and ECM complement, and its subject is raised at some point of derivation and can bind *each other* in the adverbial phrase [3]

If it is correct to assume that the subject DP is raised at some point, then we have to determine at what point the raising is carried out Consider the sentences in (21)

(21) a ?I would like John$_i$ greatly [t_i to read books carefully]
b ?I would like John$_i$ greatly [t_i reading books carefully]

The relative acceptability of these sentences is an indication that the raising is overt, that is, before Spell-out, since matrix adverbials, *greatly* in this case, never occur within embedded clauses, *John* must be raised overtly to the surface position. Let us here compare the sentences in (22) with those in (21)

(22) a *I would like greatly [John to read books carefully]
b *I would like greatly [John reading books carefully]

The unacceptability of the sentences in (22) shows that the raising must be to a higher position than the matrix VP If the raising is to a lower position than the matrix VP, *greatly* can appear immediately after the matrix verb even after the raising of *John*

These considerations lead us to give a derivation as illustrated in (23)

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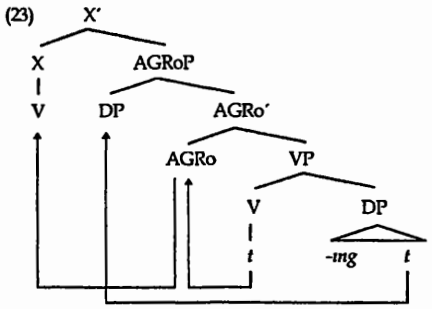
[3] One of the audience at MALC suggested that the sentence in (i) is acceptable

(i) I understand [their$_i$ being liars] during each other's$_i$ attacks

If (i) is generally acceptable, then it shows that *their* is raised out of the whole Poss-*ing* by LF and c-commands *each other* I have no explanation for this fact at present.

(23)

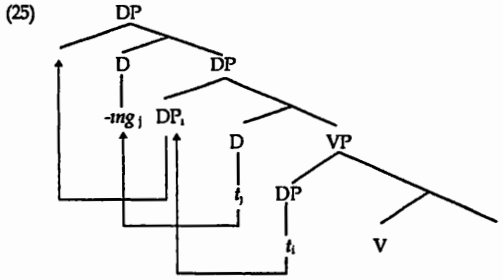


Though in (23) the subject DP of NP-*ing* seems to be raised directly to the Spec of AGRoP, this is in fact impossible, as the movement must satisfy the shortest move requirement. At the same time, the NP-*ing* has to meet the condition (14), repeated here as (24)

(24) The Spec of indefinite DP must be empty (=(14))

So the derivation within DP will be something like (25)

(25)



The DP subject of VP first moves to the Spec of lower DP, then, in order to satisfy (24), *-ing* moves to create another level of DP structure without a specifier This DP recursion will have a derivation similar to that of the case of CP recursion proposed by Browning (1996), as shown in (26) [4]

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[4] Category recursion has at least one problem since in the Minimalist Program it is generally assumed that the target projects rather than the moved item itself We may be able to overcome this problem if we think of category recursion not as movement but as substitution, as Youngjun Jang (personal communication) suggests That is, there is a null D in the upper DP, and the *-ing* in the lower DP will be raised and it will be substituted with the null element

Most likely, category recursion will be restricted to functional categories As for IP recursion, infinitives will be one of the possible candidates cf Fukuda (1996)

(26) If a non-*wh* clause has, at some point in the derivation, a filled specifier, then the complementizer must move to create another level of CP structure without a specifier (Browning 1996 242)

2 3. Explanation of the Peculiarities of NP-*ing* Constructions

We have argued that Poss-*ing* constructions have a DP structure like (17), while NP-*ing* constructions have a structure in (25) Then it is no wonder that both constructions have the distribution of DP as we have seen in section 1 1

(27) NP-*ing*'s have the distribution of DPs just like Poss-*ing*'s, and appear as the object of a verb and a preposition and as the subject of a tensed clause

Furthermore, remember here that NP-*ing* has an empty DP Spec as shown in (25), while Poss-*ing* has a filled Spec Thus will account for why NP-*ing* complements allow arguments to be extracted, while Poss-*ing*'s do so only marginally as in (28)

(28) a ??What did John like [Mary's having read *t* carefully]? (=(5))
b What did John like [Mary having read *t* carefully]?

Remember that NP-*ing* complements allow adjunct extraction, while Poss-*ing* complements never allow it. Thus asymmetry of adjunct extraction will be explained in the same way

(29) a. *How did John like [Mary's having read *The Minimalist Program t*]? (=(6))
b ?How did John like [Mary having read *The Minimalist Program t*]?

Finally, we can account for the fact that passivization of the subject in NP-*ing*'s is impossible, as shown in (30)

(30) *Mary is understood [*t* having departed yesterday] (=(7b))

Mary in this structure is not the closest DP that can enter into a checking relation with the matrix strong D, but rather the whole NP-*ing* is the closest one

3. Implications

If we are on the right track, our analysis will make some predictions concerning Lasnik's (1995) enlightened self-interest and the NP-*ing*'s in the subject position.

3.1. Enlightened Self-interest —— Lasnik (1995)

Lasnik (1995) proposes replacing Greed with his enlightened self-interest, which, informally, will be stated as follows

(31) items move either to satisfy their own requirements or those of the position they move to (Lasnik 1995 615)

Our analysis may be considered to support this proposal. As we have seen in (30), the subject of

NP-*ing* resists passivization, but the whole structure can be passivized, as can be seen in (32a)

(32) a [$_{DP}$ Them trying$_{(no\ Case)}$ to sing a song]$_i$ T$_{[STRONG\ D]}$ seems to have been remembered t_i by everyone (Reuland 1983 109, note 5)
b [$_{DP}$ Their trying$_{(Case)}$ to sing a song]$_i$ T$_{[STRONG\ D]}$ seems to have been remembered t_i by everyone

This movement is not motivated by the morphological features of *-ing* itself, since it has no Case feature So the driving force of this movement must be the strong D in the matrix T In this case, movement occurs in order to satisfy the requirements of the target.

3 2 Speculations about the NP-*ing*'s in the Subject Position

Next, we will be concerned with the NP-*ing* constructions in the subject position We have considered about the extraction within the NP-*ing* constructions in the complement position If we are correct in assuming the DP recursion for NP-*ing*'s and there is an empty Spec in these structures, then it can be predicted that extraction from NP-*ing*'s in the subject position will somehow be permitted, however, this prediction is not borne out, as can be seen from the sentences in (33) and (34)

(33) a *What do you think that [Mary's having read *t* carefully] was a true surprise?
b *What do you think that [Mary having read *t* carefully] is an impossible dream?

(34) a *How do you think that [Mary's having read *The Minimalist Program t*] was a true surprise?
b *How do you think that [Mary having read *The Minimalist Program t*] is an impossible dream?

As is clear from these examples, no extraction is possible from sentential gerundives (both NP-*ing* and Poss-*ing*) in the subject position It is no wonder that Poss-*ing*'s in the subject position does not allow extraction, but we have to explain why the extraction is impossible for NP-*ing*'s, as they have an escape hatch in the upper DP Spec

We can account for this fact by resorting to the barrierhood of the subject DP NP-*ing*'s have a structure like (25) In the case of NP-*ing*'s in the object position, the subject DP in the Spec of a lower DP can go up to a higher AGRoP Spec position directly, while this is not possible in the case of the subject position, since DP will be a barrier, no matter how this concept may be defined in the Minimalist framework Thus, the subject itself must use the empty Spec in the upper DP as an escape hatch for Case checking at the Spec of TP Then, there will be no escape hatch for other elements in VP, hence, no extraction of wh-element will be possible in this case Notice here that if this is the correct derivation for the NP-*ing*'s in the subject position, the resulting structure does not satisfy the condition (14), then NP-*ing*'s in the subject position may not be definite expressions [5]

[5] This may be confirmed by the following contrast:

4. Conclusion

I have shown here that if we assume Larsonian category recursion for DP, we can give a unified account for sentential gerundives Poss-*ing*'s and NP-*ing*'s can both be analyzed as DPs Further, if we are on the right track, our analysis can be considered to lend a support for Koizumi's (1995) string vacuous overt object shift, and Lasnik's (1995) enlightened self-interest

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(i) a *John regretted [Mary reading such foolish books]
b John regretted [Mary's reading such foolish books]

(ii) a [Bill owning a mansion] was a true surprise
b [Bill's owning a mansion] was a true surprise

Although NP-*ing* is not allowed in the complement position of factive predicates, it can appear as the subject of such predicates with ease