

p.87 "We suggest that Japanese in fact has N'-deletion, and discuss the properties of N'-deletion in both Japanese and English. In the following section, we present some data indicating that Japanese has N'-deletion. Then, in Section 3, we argue that the N'-deletion phenomenon provides support for the DP hypothesis, proposed by Fukui and Speas (1987), Abney (1986), and Kuroda (1986), among others. We propose, accordingly, that N'-deletion should be reanalyzed as NP-deletion."

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A typical English example of N'-deletion is shown in (2).

(2) Lincoln's portrait didn't please me as much as [<sub>NP</sub>Wilson's [<sub>N'e</sub>]]

The N'-deletion phenomenon in English is studied extensively in Jackendoff (1971). He shows that N'-deletion in NPs has the same basic properties as VP-deletion in Ss. First, in both cases, the "predicate" is deleted as shown in (3).

(3)a. [<sub>S</sub>NP [<sub>VP</sub>e]]

b. [<sub>NP</sub>NP [<sub>N'e</sub>]]

Secondly, N'-deletion, like VP-deletion, requires a linguistic antecedent. The following examples from Hankamer and Sag (1976) show that VP-deletion is subject to this condition:<sup>3</sup>

(4)a. Context: [Sag produces an uncooked egg and goes into a wind up motion as if in preparation for throwing the egg into the audience.]

b. Hankamer: #Don't be alarmed, ladies and gentleman.  
He never actually does.

(5)a. Audience member: I'm afraid Sag will throw an egg.

b. Hankamer: He never actually does.

The following examples from Lasnik and Saito (in prep.) confirm that N'-deletion is also subject to this condition:

(6)a. Context: [Lasnik and Saito are in a yard with several barking dogs belonging to various people.]

b. Lasnik: #Harry's is particularly noisy.

(7)a. Saito: These dogs keep me awake with all their barking.

b. Lasnik: Harry's is particularly noisy.

Another well known property of N'-deletion is that the "deleted N'" must be preceded by a genitive phrase. That is, for N'-deletion to apply within an NP, the NP must have a genitive phrase in its specifier position. The following examples, together with the well-formed (2) and (7b), illustrate this generalization:

(8)a. \*I wanted to read a book, so I bought [NP(a) [N'e]]

b. \*I read about that person, and now, I want to see [NP(the) [N'e]]

Thus, an example of N'-deletion always has a stranded genitive NP, i.e., a genitive NP not followed by an overt head N.

<<<There are apparent exceptions:

I read 3 books and you read 4~~books~~

Adjectives, though, won't do it:

\*You read a good book and I read a bad ~~book~~

The usual generalization is the one S&M put forth, with some stipulation about the numeral ones.

Later, we'll look at Lobeck's discussion of this.

And it's not just numerals. Other quantity modifiers work too:

I read few books but you read many ~~books~~ >>>

p.89 · It seems then that if a genitive NP can appear without an overt head N in Japanese, we have good evidence that the language has N'-deletion. And in fact, we find examples such as the following:

(9) Kono hon -wa John-no da  
this book-top -gen is

(This book is John's)

However, it is much too hasty to conclude on the basis of (9) that Japanese has N'-deletion. The situation is complicated by the fact that *no* is ambiguous between the genitive Case Marker and a pronoun. The following is a typical example of the pronoun *no*, which corresponds roughly in meaning to *one* in English:

(10) Akai no -o mittu kudasai  
red one-acc three give-me

(Please give me three red ones)

In fact, according to the standard analysis, due to Okutsu (1974), (9) would be derived from (11) by a minor rule which reduces two successive *no*'s to one.<sup>4</sup>

(11) Kono hon -wa John-no no da  
this book-top -gen one is

If this analysis is correct, then (9) does not have anything to do with N'-deletion.

We can test this, S&M note, because 'no' is a pro-form only for concrete nouns. But we can get ex's parallel to (9) even with abstract noun antecedents:

pp.90-91 (15)a. [<sub>NP</sub>Gakubusei -no sensei -e -no izon] -wa yuruseru  
 undergraduate-gen teacher-on-gen reliance-top can-tolerate

ga, [<sub>NP</sub>insei -no]-wa yurusenai  
 though grad. student-gen-top cannot-tolerate

(I can tolerate the undergraduates' reliance on the faculty,  
 but not the graduate students')

We conclude, then, that Japanese has N'-deletion, and that the structures of (15a-b) are more precisely as in (17a-b).

(17)a. [<sub>NP</sub>Gakubusei -no [<sub>N'</sub>sensei-e-no izon]] -wa yuruseru  
 undergraduate-gen teacher-on-gen reliance-top can-tolerate

ga, [<sub>NP</sub>insei -no [<sub>N'</sub>e]]-wa yurusenai  
 though grad. student -gen -top cannot-tolerate

b. [<sub>NP</sub>Taroo-no [<sub>N'</sub>kenkyuu -ni taisuru taido]] -wa ii ga,  
 -gen research-toward attitude-top is-good though

[<sub>NP</sub>Hanako-no [<sub>N'</sub>e]]-wa yokunai  
 -gen -top is-not-good

In both of these examples, the "deleted N'" has an antecedent in the same sentence; '[<sub>N'</sub>sensei-e-no izon]' in (17a), and '[<sub>N'</sub>kenkyuu-ni taisuru taido]' in (17b).

Potential problem: While (13) can't involve the pronoun 'no', why can't they be derived via  $\bar{N}$ -deletion?

(13)a. \* [<sub>NP</sub>Sono toki-no Yamada sensei-e -no izon] -wa Taroo-no datta  
 that time-gen prof. -on-gen reliance-top was

(\*The reliance on Prof. Yamada at that time was Taro's)

b. \* [<sub>NP</sub>Sono yokunai kenkyuu -ni taisuru taido] -wa Hanako-no da  
 that good-not research-toward attitude-top is

(\*That bad attitude toward research is Hanako's)

Now note that the same problem arises in English. The English translations of (13) are also bad. Anderson (1983) had already noted this problem, giving the following paradigm:

(20)a. This book is John's

b. \*That reliance on friends is Mary's

c. \*That destruction of the city is the barbarians'

S&M will argue that the DP hypothesis provides a solution, and explains other properties of “N̄-deletion” as well.

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As noted above, Jackendoff (1971) points out that N'-deletion in NPs has the same basic properties as VP-deletion in Ss. However, the parallelism is not quite complete in two major respects. First, VP is a maximal projection, while N' is not. Secondly, VP-deletion requires a stranded auxiliary verb, as shown in (1), and as confirmed further by the examples in (23)-(24) from Lasnik (1984).

- (23)a. I left because John did  
 b. \*I left because John
- (24)a. I can do it because John can  
 b. \*I can do it because John

However, there does not seem to be any parallel requirement in the case of N'-deletion.<sup>7</sup>

The second difference noted above, in particular, provides an interesting problem for the analysis of N'-deletion. Zagana (1982) argues that the contrast in (23)-(24) follows from the ECP, if we assume that empty VPs, like any other non-pronominal empty categories, are subject to this licensing condition. According to her analysis, the empty VPs in (23)-(24), in particular, must be licensed (properly governed) by INFL, as illustrated in (25).

- (25) [IP(=s)NP [I I [VPE]]  
 |     ↑

<While this is stated in terms of the licensing of a base-generated null category, it could be restated as triggering of deletion. This is what Merchant does for ellipsis in general.>

<In (23)a and (24)a, Infl, carrying tense and agreement, licenses VP ellipsis, while in (23)b and (24)b, there is no Infl node carrying tense and agreement, so ellipsis is not licensed.>

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If Zagana's account for (23)-(24) is correct, the very existence of the N'-deletion phenomenon is quite puzzling. If "deleted VPs" are subject to the ECP, and must be licensed, we expect "deleted N's" to be subject to the same requirement. However, there is no licensing element like INFL in the case of "deleted N's", as shown in (26), and yet, N'-deletion is possible.

- (26) [NP NP [N' e]]

Here, the DP hypothesis proposed, for example, in Fukui and Speas (1987) and Kuroda (1986), enables us to make the parallelism between N'-deletion and VP-deletion complete. According to this hypothesis, the structures of *the book* and *John's reliance on Mary*, for example, are as in (27a-b) respectively.

- (27)a. [DP [D [D the]] [NP [N' [N book]]]]  
 b. [DP [DP John]<sub>i</sub>] [D [D 's]] [NPT<sub>i</sub> [N' [N reliance]] [P<sub>P</sub> on Mary]]]]

to the VP-internal subject hypothesis, proposed in Koopman and Sportiche (1986), Kuroda (1986), and Fukui and Speas (1987), among others, the subject of a tensed clause receives a  $\theta$ -role VP-internally, and moves to the IP SPEC position to receive Case from INFL, as shown in (28).

(28)  $[_{IP}[_{DP}John]_i[_{I'}[_{I+AGR}][_{VPT}_i[_{V'}[_{V}relies][_{PP}on Mary]]]]]$

Thus, given the DP hypothesis, "sentences" such as *John relies on Mary* and noun phrases such as *John's reliance on Mary* can be assigned completely parallel structures.

Now, if the DP hypothesis is correct, the structure of (2), repeated below as (29), is as in (30).

(29) Lincoln's portrait didn't please me as much as  $[_{NP}Wilson's [_{N'}e]]$

(30) Lincoln's portrait didn't please me as much as  $[_{DP}Wilson's [_{NP}e]]$

Hence, N'-deletion can be straightforwardly reanalyzed as NP-deletion, as illustrated in (31).

(31)  $[_{DP}[_{DP}Wilson] [_{D'}[_{D}'s] [_{NP}e]]]$

And given this reanalysis of N'-deletion as NP-deletion, the two differences between VP-deletion and "N'-deletion" noted above disappear. First, both VP-deletion and NP-deletion involve maximal projections. Secondly, NP is a complement of D, exactly as VP is a complement of I. Thus, extending Zagana's (1982) analysis of VP-deletion, we can hypothesize that empty NPs, such as the one in (31), are licensed (properly governed) by D, in the same way that empty VPs are licensed by I.<sup>9</sup>

Problem:

First, Ds such as *the*, *a* do not license NP-deletion, as illustrated in (8), and this fact must be explained. One difference between *'s* and *the/a* is that only the former agrees with and licenses an item in the DP SPEC position, as shown in (i).

(i)a.  $*[_{DP}[_{DP}John] [_{D'}[_{D}the/a] NP]]]$

b.  $[_{DP}[_{DP}John] [_{D'}[_{D}'s] NP]]]$

Phenomenally, then, only  $[+AGR]$  D licenses NP-deletion. We tentatively assume here that the item in the DP SPEC position gives the head D, through SPEC/Head agreement, "enough lexical content" so that the D can license (properly govern) the empty NP.

<S&M then observe that Sluicing behaves similarly:

(ii)a. I know that Mary bought something, but I don't know  $[_{CP}[_{what} [_{C'}C [_{IP}e]]]]]$

b. I know that Mary left early, but I don't know  $[_{CP}[_{why} [_{C'}C [_{IP}e]]]]]$

(iii)  $*Mary$  said that she was going to Boston, but I don't know  $[_{CP}[_{C'}[_{C}whether] [_{IP}e]]]]]$

The examples above show that an empty IP is possible only when the SPEC position of the CP is filled. Hence, it seems that functional heads such as D and C in general can license an empty complement only when they agree with an item in the SPEC position. Given this hypothesis, we are naturally led to the assumption that in examples like (iv), the PRO subject 'agrees with' and allows the embedded I (*to*) to license the empty VP.

(iv) Mary wants me to go to college, but I<sub>i</sub> don't want [CP [IP PRO<sub>i</sub> [I' [I<sub>to</sub>] [VP $\epsilon$ ]]]]

<<This last point is developed in detail by Roger Martin in his 1996 UConn thesis. He argues for the Chomsky-Lasnik proposal that PRO is, in fact, Case-Marked (a special Case Chomsky and Lasnik call 'null case'). The reasoning is that Case and agreement go together, so if PRO agrees with the non-finite Infl here, it is reasonable to think that it is Case-licensed by it. This would also explain the impossibility of A-movement of the subject of this kind of infinitive, since A-movement from a Case position is generally impossible. Now consider the following pair:

I want Mary to be a good linguist, and you want Susan to ~~[be a good linguist]~~

\*I believe Mary to be a good linguist, and you believe Susan to ~~[be a good linguist]~~

And now notice that the embedded Infl in the latter instance does not license null Case:

\*I believe PRO to be a good linguist

Further, this time movement from complement subject position is possible, unlike the previous situation:

Mary is believed *t* to be a good linguist

\*Mary is wanted *t* to be a good linguist

On this approach, the properties correlate nicely.>>

S&M go on to show how the DP hypothesis can explain this paradigm (alluded to earlier):

(32)a. [NP John's [N' reliance on the faculty]] is more problematic than  
[NP Mary's [N'  $\epsilon$ ]]

b. [NP Mary's [N' attitude toward research ]] is more impressive  
than [NP John's [N'  $\epsilon$ ]]

(33)a. [NP This [N' book]] is [NP John's [N'  $\epsilon$ ]]

b. \*[NP That [N' reliance on friends]] is [NP Mary's [N'  $\epsilon$ ]]

c. \*[NP That [N' destruction of the city]] is [NP the barbarians'  
[N'  $\epsilon$ ]]

As noted above, given the N'-deletion analysis, it is not at all clear why (33b-c) are not grammatical, since the empty N' has an antecedent in these examples, exactly as in the grammatical (32a-b) and (33a).

However, if we assume the NP-deletion analysis, which is based on the DP hypothesis, the contrast in (32)-(33) is straightforwardly accounted for. Let us first consider the examples in (32). Given the DP hypothesis, their structures are as in (34).

(34)a. [DPJohn's<sub>i</sub> [NPt<sub>i</sub> reliance on the faculty]] is more problematic  
than [DPMary's<sub>j</sub> [NPe]]

b. [DPMary's<sub>i</sub> [NPt<sub>i</sub> attitude toward research is more impressive  
than [DPJohn's<sub>j</sub> [NPe]]]

If NP-deletion did not apply, the second DPs in (34a-b) would be as in (35a-b) respectively.

(35)a. [DPMary's<sub>j</sub> [NPt<sub>j</sub> reliance on the faculty]]

b. [DPJohn's<sub>j</sub> [NPt<sub>j</sub> attitude toward research]]

Thus, in both (34a-b), the empty NP in the second DP has an antecedent in the first DP. That is, in both of these examples, the first DP contains an NP which has exactly the same form as the "deleted NP".

Let us next consider (33a), whose structure is shown in (36).

(36) [DPThis [NPbook]] is [DPJohn's [NPe]]

If we assume, as seems reasonable, that possessors are base-generated in the SPEC of DP position, then the "deleted NP" in (36) does not contain a trace, and is as in (37).

(37) [NPbook]

Then, the empty NP in (36) also has an antecedent, and it is not surprising at all that (36) is a well-formed example of NP-deletion.

Let us now consider the ungrammatical (33b-c). According to our hypothesis, their structures are as in (38a-b).

(38)a. [DPThat [NPreliance on friends]] is [DPMary's<sub>i</sub> [NPe]]

b. [DPThat [NPdestruction of the city]] is [DPthe barbarians'<sub>i</sub>  
[NPe]]

Here, since *Mary* in (38a) and *the barbarians* in (38b) bear the subject  $\theta$ -role, the "deleted NPs" in (38a-b) must contain their traces, and be as in (39a-b) respectively.

(39)a. [NP t<sub>i</sub> reliance on friends]

b. [NP t<sub>i</sub> destruction of the city]

But if this is the case, there are no antecedents for the empty NPs in (38a-b), since the first NPs in those examples do not contain a trace. Thus, given that NP-deletion, like VP-deletion, requires a linguistic antecedent, we predict correctly that (38a-b) are ungrammatical. Thus, once we reanalyze N'-deletion as NP-deletion, the problem posed by (32)-(33) disappears. Since the NP-deletion analysis is made possible by the DP hypothesis, the examples in (32)-(33) constitute evidence not only for the NP-deletion analysis, but also for the DP hypothesis itself.