Remarks on Negation

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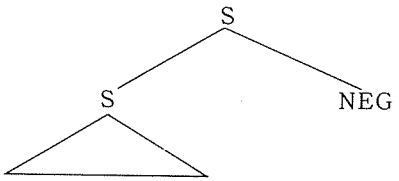
Introduction.

There are two points about this paper that may undermine the reader's morale, namely 1) that what is discussed below mostly has to do with Japanese, and 2) that the issues raised pertain only to non-major clauses where we have no occurrence of non-case particles like *wa*, *mo*, and the like. This paper should hence be regarded as a contrastive analysis of Japanese at the most, with particular emphasis on Japanese non-major clauses. The omission of any discussion of English (save some trivial points) is due partly to space limitation but mostly to the existence of abundant literature easily accessible to the reader. To indicate that a sentence is a non-major clause, I will adopt the practice of adding the complementizer *koto* to each sentence, particularly when the sentence sounds odd in isolation. [This is to ward off in advance any kind of discourse-oriented objection to syntactic arguments. Thus, for instance, while a topic-less sentence sounds very odd in isolation, such a sentence becomes natural once embedded as a non-major clause, topic being a major clause phenomenon.]

In what follows I would like to argue that negation (henceforth NEG), morphologically realized as *nai* in nonperfective sense, must syntactically originate within a verbal element and

that it can never take a sentential complement. That is, I am saying that Japanese has no underlying structure like the following (in contradistinction to, for instance, McGloin (1976) and others and also to languages like English, for which one often finds arguments to the contrary:

a.



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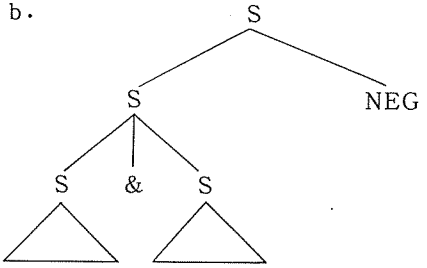

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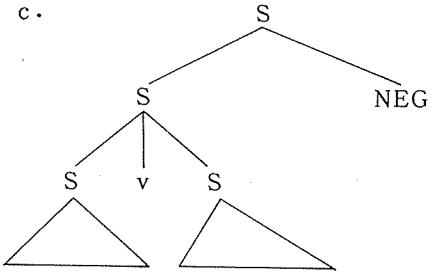


etc.

A similar point has been raised from different angles and points

of view in Kuno (1980, 82, 83) and Takubo (1983). In this paper I would like to discuss the problem within the general framework of transformational Montague Grammar. [For this framework, see Sugimoto (1982).] After the discussion on NEG, I would like to touch on the problem of bare common nouns (CNs) in Japanese and present a view that is diametrically opposed to that expressed in Sugimoto (1984).

1. The position of NEG.

Consider first the position NEG occupies in Japanese sentences. Note particularly the fact that in Japanese there is no other place that *nai* appears in than in the predicate position, which is in sharp contrast with a language like English, whose negative particle *not* enjoys more freedom of occurrence. Actually *not* can occur virtually before any constituent:

1] a. Me, not you!
b. Not "and" but "or"
c. No, not many.
etc.

In Japanese, on the other hand, the negative *nai* must always be supported by a verb and can never be separated from it. That is to say, the negative *nai* without an accompanying verb is a sheer impossibility in Japanese, strongly suggesting that it is always part of a verb:

2] a. boku de-naku-te kimi da
"It's not me, but you."
b. ooku-nai
"Not many." (*ooku* is an adjective.)
c. "and" de-naku-te "or" da
"It's not *and* but *or*"
etc.

That even in the case of constituent negation a verb is a must is at the very least indicative of the verb-dependent status of NEG in the underlying structure of Japanese.

2. NEG and sentential operators.

Assume that Conjuntion Reduction (CR) is a syntactic transformation in Japanese [Assumption to the contrary would lead to the same conclusion. So I will only take up this case. CR in fact may not be necessary in syntactic description of any language, given the semantic framework of Montague Grammar. See Gazdar (1980) on this point.] that relates, for instance, the following pairs: [I will use &' and v' to denote the sentential con-/dis-junction particles in Japanese.]

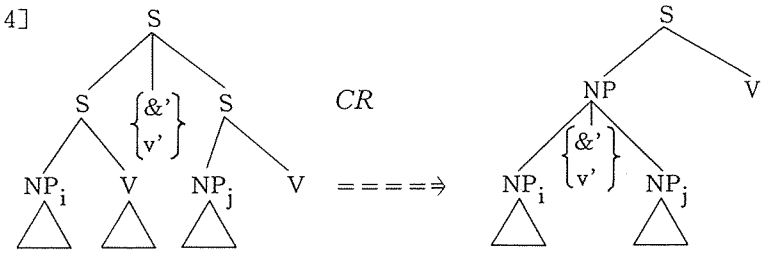
3] i. a. [Hanako-ga kita] &' [Yosiko-ga kita]
"Hanako came." "Yosiko came."
b. Hanako to Yosiko ga kita
"Hanako and Yosiko came."

ii. a. [Hanako-ga kita] v' [Yosiko-ga kita]
"Hanako came." "Yosiko came."

b. Hanako ka Yosiko ga kita
"Hanako or Yosiko came."

Schematically it takes n conjuncts (anchored here at 2) of sentences and derive a single sentence with the effect of right-node-raising the identical verb, deleting the original verbs, with, of course, the subsequent spelling of operators like &' and v'.

4]

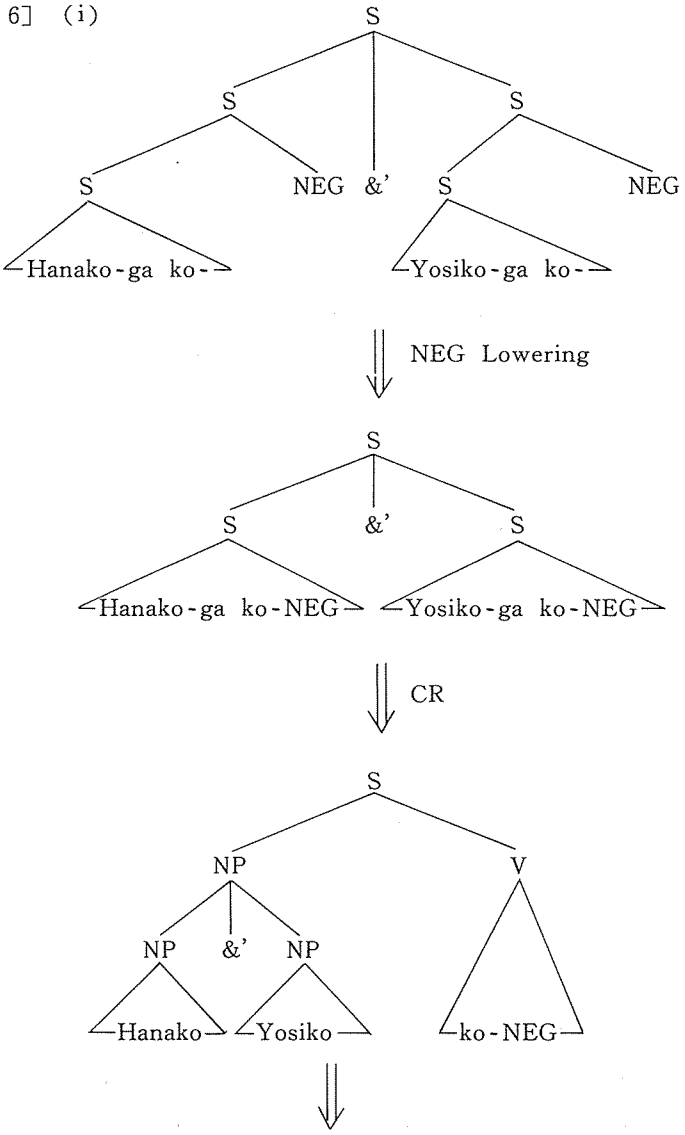


[There are other cases of CR, but this schema will suffice for the present purpose.]
Consider now the following sentence.

5] Hanako to Yosiko ga ko-nai
"Hanako and Yosiko will not come."

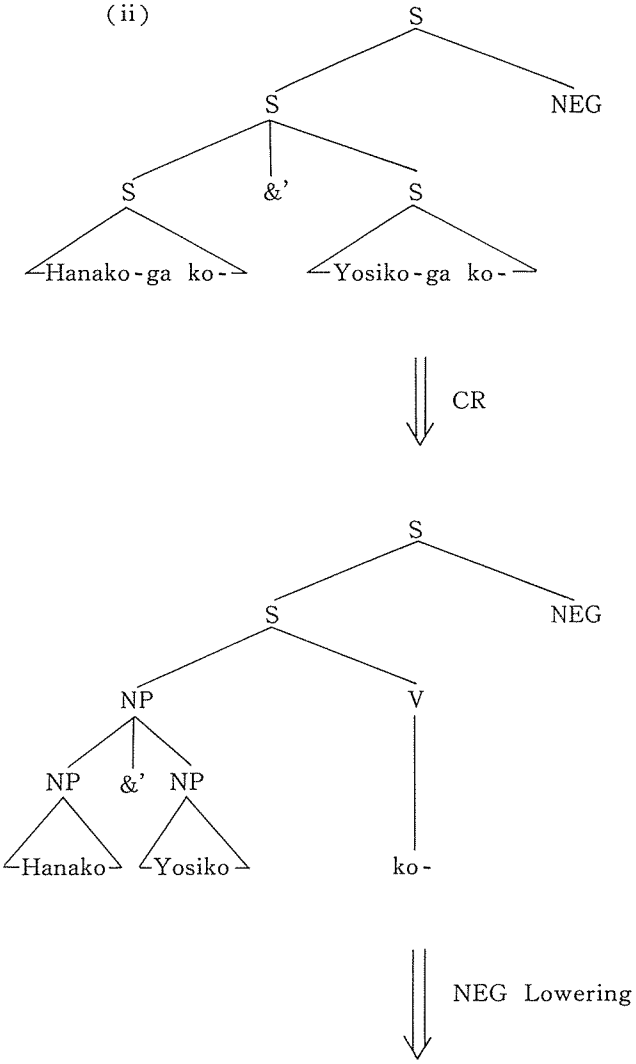
If indeed the NEG took a sentential complement with subsequent lowering, we would expect [5] to be ambiguous, being derivable from either of the two separate structures roughly as follows:

6] (i)



Hanako to Yosiko ga konai (koto)

(ii)


S
S
NEG
S
&'
S
Hanako-ga ko-
Yosiko-ga ko-
CR
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NP
V
NP
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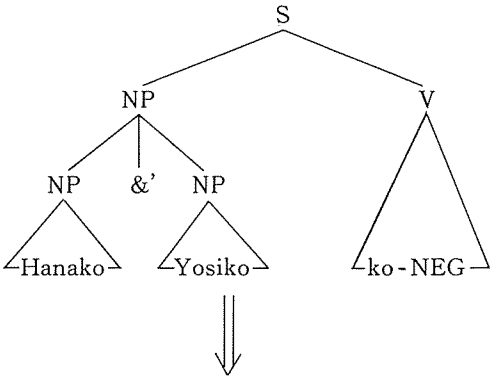
NEG Lowering



Hanako to Yosiko ga konai (koto)

(i) and (ii) correspond to (i') and (ii') respectively:

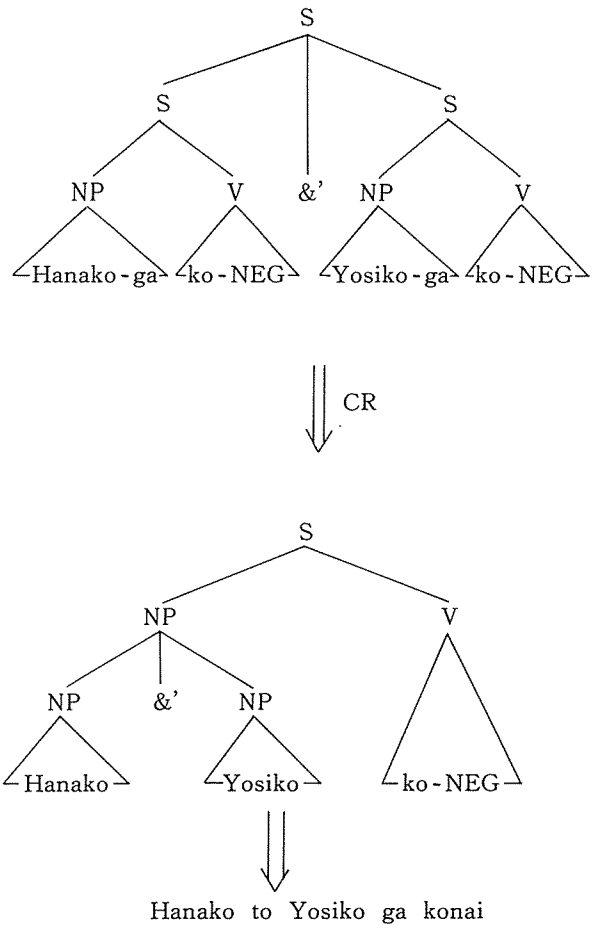
7] i'. Neither Hanako nor Yosiko came.
ii'. Not both Hanako and Yosiko came.

But the sentence *Hanako to Yosiko ga ko-nai (koto)* can only mean (i'). It would be contradictory, for instance, to continue this sentence with the following:

8] ···, sikasi Hanako-wa kuru.
"···, but Hanako will come."

That this should be the case strongly suggests that NEG can only originate within a verb, for, if so, we will have the unique derivation:

9]



And this derivation is the source for the sense expressed in (7i'). [The translation rules will be given later.] Thus the supposition that NEG originates inside a verb correctly predicts the meaning of the sentence in question. Note that it is not the case that Japanese

cannot express the sense [7ii'] ; to do so, however, one would have to say:

10] [Hanako to Yosiko ga kuru] no de-nai
"It is not the case that Hanako and Yosiko will come."

But then the NEG *nai* is supported by another verb *de−*, the whole sentence thus becoming non-simplex. This lends further support to our starting assumption that NEG must originate within a verbal element in Japanese.

Arguments involving other conjuncts like *ni, ya, mo,* which more or less mean "and", and *ka, matawa, ka-matawa,* which all mean "or", would take a similar form and are hereby left out.

The translation into intensional logic, given that NEG starts out with a verb, would proceed in the following manner [Rather than give the actual translation rules, I will illustrate them by giving translation to sample sentences.]

11] i. Hanako-ga kuru

Hanako ⟶ λP∨P (h)

kuru ⟶ kuru'

Hanako-ga kuru ⟶ λP∨P (h)(^kuru')

⟶ kuru' (h)

ii. Hanako-ga konai (koto)

ko-NEG ⟶ λxNkuru' (x)

Hanako-ga ko-NEG ---〉 $\lambda P^{\vee}P(h)(\hat{}\lambda xNkuru'(x))$

---〉 $\lambda xNkuru'(x)(h)$

---〉 $Nkuru'(h)$

iii. Hanako to Yosiko ga konai

Hanako-ga ko-NEG ---〉 $Nkuru'(h)$ [cf. ii]

Yosiko-ga ko-NEG ---〉 $Nkuru'(y)$

[Hanako-ga ko-NEG] &′ [Yosiko-ga ko-NEG]

---〉 $Nkuru'(h)$ & $Nkuru'(y)$

iv. [Hanako to Yosiko ga kuru] no de-nai

de-/da ---〉 $\lambda p^{\vee}p$ [p: a variable over propositions]

de-NEG ---〉 $\lambda pN^{\vee}p$

[Hanako-ga kuru] &′ [Yosiko-ga kuru]

---〉 $kuru'(h)$ & $kuru'(y)$

[[Hanako-ga kuru] &′ [Yosiko-ga kuru]] no de-NEG

---〉 $\lambda pN^{\vee}p(\hat{}(kuru'(h)$ & $kuru'(y))$

---〉 $N^{\vee}(\hat{}(kuru'(h)$ & $kuru'(y))$

---〉 $N(kuru'(h)$ & $kuru'(y))$

[11] thus ensures that NEG is syntactically part of a (complex) verb and yet semantically it is a truth function that takes the denotation of a proposition as its argument. The predicted meaning in [11 i] through [11 iv] is the one and only one that actually exists in Japanese.

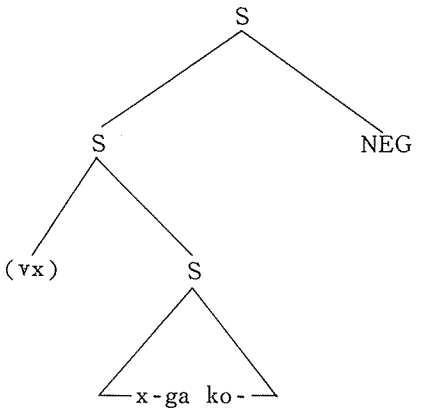
3. NEG and quantifiers.

Since the arguments will go parallel with any other quantifier and NEG, I will here illustrate the point to be made with the quantifier *minna* "everyone". Consider the following pair of sentences.

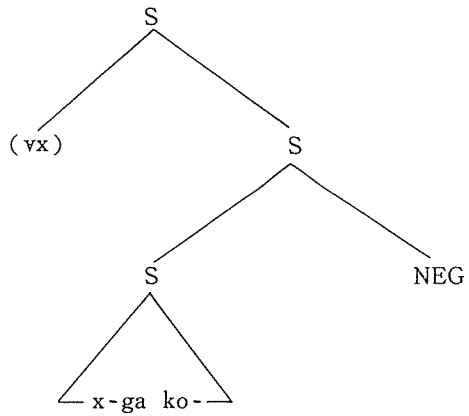
12] i. minna-ga kita
"Everyone came."
ii. minna-ga ko-nakatta
"Eveyone did not come."

If indeed NEG were to take a sentential complement, we would expect (ii) to be amgiguous, being derivable from either one of the sources below [Recall parallel arguments often advanced for English.]

13] i.



ii.



But as a matter of fact [12 ii] only has the sense [13 ii], i.e., the universal quantifier takes a wider scope than NEG. Thus the position that NEG always takes a sentential complement would have to somehow block the reading represented by [13 i]. But if we assume, as we do in this paper, that NEG is an element of a verbal complex, the above consequnce falls out naturally. In fact, [13 ii] would be the only reading we can assign to [12 ii], as we will see in [15]. How is the sense [13 i] to be expressed? Again we have to attach NEG to another verb and say:

14] [minna-ga kita] no de-nai (koto)
"It is not so that everyone came."

The fact that another verb has to crop up to support NEG and that [14] can only mean [13 i] thus strongly favors our position that NEG originates inside a verb in the predicate position. The translation into intensional logic would proceed as follows.

15] i. minna-ga kita

minna ---〉 λP(vx)[hito'(x) -〉 ˇP(x)]
kita ---〉 kuru'
minna-ga kita ---〉 λP(vx)[hito'(x) -〉
ˇP(x)](^kuru')
---〉 (vx)[hito'(x) -〉 kuru'(x)]

ii. minna-ga ko-nakatta (koto)

ko-NEG ---〉 λxNkuru'(x)
minna-ga ko-NEG ---〉
---〉 λP(vy)[hito'(y) -〉 ˇP(y)]
(^λxNkuru'(x))
---〉 (vy)[hito'(y) -〉 λxNkuru'
(x)(y)]
---〉 (vy)[hito'(y) -〉 Nkuru'(y)]

iii. [minna-ga kita] no de-nai

de- ---〉 λpˇp
de-NEG ---〉 λpNˇp
[minna-ga kita] de-NEG
---〉 λpNˇp(^(vx)[hito'(x) -〉
kuru'(x)])
---〉 N((vx)[hito'(x) -〉 kuru'
(x)])

4. Bare common nouns (CNs) and NEG.

Having seen that NEG is best generated as a verbal element in Japanese syntax, I would now like to comment on the issue of bare CNs in Japanese. I have elsewhere expressed the view [cf. Sugimoto (1984)] that bare CNs in Japanese have to contain hidden quantifiers, based on facts having to do with intension, quantifier interaction, etc. The position that is to be presented here is the other end. It appears that NEG-related facts indicate that bare CNs do not contain any quantifier; rather they behave like proper nouns. This is so because, as we have seen in the preceding sections, given that S is a [non-major] sentence, and that S′-*nai* a negative of S, of the three formulas:

16] a. S
b. S′-nai
c. S no de-nai (koto)

(a) and (c) are contradictory while (b) is (sub)contrary to (a) and (c) if S contains a quantifier. It is also true then that if S contains a logical operator or a quantifier, (b) and (c) are not synonymous; the scope of NEG is narrower in (b) than in (c). Thus, where S contains a quantifier or a logical operator in [16], we can generally say:

17] *S′-nai* and *S no de-nai* are not synonymous.

["Contain" here is to be understood in its obvious sense, i.e.,

if NP in S bears a grammatical relation (indicated by the presence of a particle that follows it) to the main verb of S, then S contains that NP; "synonymous" here is to be understood as "mutually entail".] Consider now the following sentences:

18] i. Hanako-ga kita
"Hanako came."
ii. Hanako-ga konakatta (koto)
"Hanako did not come."
iii. [Hanako-ga kita] no de-nai (koto)
"It is not so that Hanako came."

Unlike the examples in [16], (ii) and (iii) are here synonymous, and they are both contradictory to (i). This fact would be reflected in our grammar in the following translations:

19] i′ ---〉 kuru′(h)
ii′ ---〉 λP^P(h)(^λxNkuru′(x))
---〉 Nkuru′(h)
iii′ ---〉 λpN^p(^kuru′(h))
---〉 Nkuru′(h)

In general it seems we can say that, again in [16], if S lacks a quantifier or an operator as one of its grammatical terms, the logical difference between *S′-nai* and *S no de-nai* is neutralized and that consequently they become synonymous. [I feel some difference in their assertive forces, but exactly how they differ I do not know.] Consider now the following sentences that contain

bare CNs:

20] i. inu-ga kita
"Dogs came."
ii. inu-ga ko-nakatta (koto)
"Dogs did not come."
iii. [inu-ga kita] no de-nai (koto)
"It is not so that dogs came."

Again we see that (ii) and (iii) are mutually synonymous and that they are both contradictory to (i). We can here conclude, from what has been said so far, that none of the sentences in [20] contains a quantifier as one of its grammatical terms. Consequently we conclude that bare CNs acting as grammatical terms are not quantified expressions. Consequently we preclude the possibility of transformationally deriving bare CNs in Japanese by deleting some ghost quantifiers posited in the underlying structure [as is maintained is to be the case in Sugimoto (1984)].

Postscript.

While I believe the contention with respect to bare CNs raised in the last section is plausible, it is by no means a settled issue, and further research is called for, but the task is far beyond the scope of the present paper. As for the bare CNs in English, the reader is referred to Carlson (1977).

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