On verbless conjunction in Japanese*

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In this paper, I examine one instance of the elliptical constructions in Japanese shown in (1), which I shall call *verbless conjunction*.

(1) Verbless conjunction:
Tom-ga Mary-ni, Mike-ga Susan-ni tyokoreeto-o ageta.
Tom-NOM Mary-DAT Mike-NOM Susan-DAT chocolate-ACC gave
(Lit.) 'Tom to Mary, and Mike gave some chocolate to Susan.'

I argue that the syntactic properties of this construction cannot be accounted for by the previous analyses of ellipsis, and propose that (1) is derived by a deletion operation not sensitive to constituency.

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1. The previous analyses of ellipsis

Let us first review briefly the previous analyses of ellipsis. Consider the dialogue in (2). (2B) is an instance of *VP ellipsis*, the content of which can be paraphrased as in (3).

(2) (Based on Hankamer & Sag 1976: 392)
A: I'm going to [$_{VP}$ stuff this ball through this hoop].
B: It's not clear that you'll be able to [$_{VP}$ ___].

(3) It's not clear that you'll be able to stuff this ball through this hoop.

VP ellipsis is unacceptable if there is no linguistic antecedent, as shown in (4).

(4) (Hankamer & Sag 1976: (3))
[Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop]
Sag: #It's not clear that you'll be able to.

One of the major analyses of VP ellipsis is the so-called copying approach (Wasow 1972, and Williams 1977 among others), which assumes that the antecedent VP is copied onto the Δ in the ellipsis site at LF.

(5) A copying approach (cf. Williams 1977: (14), (15)[1]):
At Spell-Out:
It's not clear that you'll be able to [$_{VP}$ Δ].
LF: It's not clear that you'll be able to [$_{VP}$ stuff this ball through this hoop].

Under the copying analysis, (4) is predicted to be ungrammatical because there is no antecedent VP to be copied onto the Δ at LF.

Hoji (1990) and Fukaya & Hoji (1999) claim that *stripping* in Japanese, whose schematic representation is shown in (6), can be analyzed in the same way. For convenience, let us refer to the NP indicated in italics in (6), which appears in the same clause with the elided material, as the *remnant*, and the boxed NP, which is in an antecedent clause and corresponds to the remnant, as the *correlate.* An instance of

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[1] Following Wasow 1972, Williams (1977) assumes that "missing VPs have all the structure that their antecedents have, and that deltas occupy lexical nodes, never major category nodes. Thus the VP of [(i-B)] will be the one in [(ii-b)], not the one in [(ii-a)]" (Williams 1977: 105).
(i) (=Williams 1977: (12))
A: Who can do it?
B: John can.
(ii) (=Williams 1977: (13))
a. John can [Δ]$_{VP}$.
b. John can [[Δ]$_{V}$[[Δ]$_{N}$]$_{NP}$]$_{VP}$
However, I have used simplified representations, as shown in (5), for the ease of exposition.

stripping in Japanese is shown in the embedded clause in (7B).

(6) *Stripping* in Japanese: (CM stands for a case-marker.)
Antecedent clause: ... the correlate-CM ... verb
Stripping: ... *the remnant-CM* ϕ (be)

(7) (Based on Fukaya & Hoji 1999: (5))
A: Sensei-ga Bill-ni kogoto-o itteta yo
teacher-NOM Bill-DAT scolding-ACC was:saying PARTICLE
'The teacher was scolding Bill.'
B: Boku-wa [$_{CP}$ [$_{IP}$ Tom-ni] da to] omotteita yo
I-TOP Tom-DAT be that thought PARTICLE
'I thought it was Tom (that the teacher was scolding).'

Stripping constructions such as (7B) require a linguistic antecedent, as shown in (8).[2]

(8) [Sam and Mike are standing outside a classroom. They hear the teacher scolding someone. They look into the room, and see that it is Bill who is being scolded. Then Sam talks to Mike:]
Sam: #Boku-wa [$_{CP}$ [$_{IP}$ Tom-ni] da to] omotteita yo
I-TOP Tom-DAT be that thought PARTICLE
'I thought (it was) Tom (that the teacher was scolding).'

Under the copying approach, the representation of (7B) at Spell-Out should be as in (9).

(9) At Spell-Out: (Boku-wa) **[$_{IP}$ Tom-DAT [** D **]]** (da to omotteita yo)

Now what should be copied onto the Δ in (9)? We only need the boldfaced part in the antecedent clause shown in (10), but (it is generally assumed that) the copying operation can apply only to a constituent.

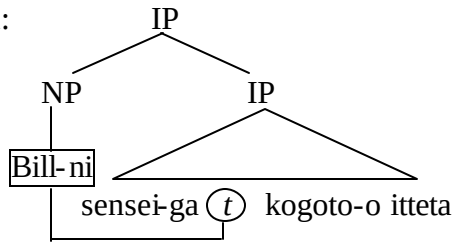
(10) The antecedent clause:
[$_{IP}$ **sensei-ga** Bill-ni **kogoto-o itteta**]
teacher-NOM Bill-DAT scolding-ACC was:saying

If *Bill-DAT* undergoes movement as in (11A), the IP [$_{IP}$ *teacher-NOM t scolding-ACC was:saying*] may be copied onto the Δ in (9) and then the LF representation of (7B) will be as in (11B).

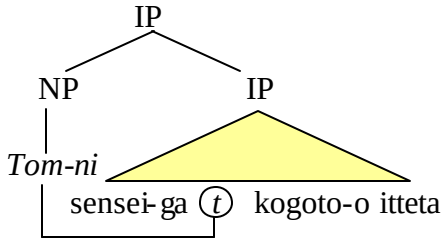
[2] This is pointed out in Hoji 1990: (174) (and the remarks thereabout), and further illustrated in Fukaya & Hoji 1999: (2).

(11) The LF representation of (7A) and (7B) (after Copy):

A:



B: (embedded clause only)



Thus, the correlate should move out of its base position.

It must be pointed out that the movement of the correlate is obligatory because of the implicit assumption that the copying operation must apply to a constituent.[3] Given the assumption that the correlate in stripping must always move out of the VP, it is predicted that the sentence would be unacceptable if the correlate originates inside an island. In fact, (12) is unacceptable.[4]

(12) Tom-ga [$_{NP}$ kuma-ni osowareta otoko]-o tasuketa.
Tom-NOM bear-DAT was:being:attacked man-ACC saved
*Mike-wa *raion-ni* [$_{IP}$ Δ] da
Mike-TOP lion-DAT be
Intended as 'Tom saved the man who was being attacked by a bear. Mike saved the man who was being attacked by a lion.'

This shows that stripping in Japanese necessarily involves the movement of the correlate, which in turn indicates that the operation involved in stripping can apply only to a constituent.

The copying approach is not the only conceivable analysis for ellipsis. The deletion approach is another possibility which is often pursued in the literature (cf. Ross 1967, Sag 1976, Hankamer & Sag 1976, Jayaseelan 1990, Merchant 2001, and Kennedy to appear, etc.). The PF and the LF representations of VP ellipsis in (2B), for example, are derived as in (13) under the deletion approach, in which the VP is deleted at PF, provided that it is identical to the antecedent VP.

(13) A deletion approach (cf. Hankamer & Sag 1976: 403-405):

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[3] 'Multiple stripping' is also possible, as illustrated in (i-a).

(i) a. Tom-ga kuma-ni osowareta. Mike-wa *raion-ni* [Δ] da.
Tom-NOM bear-DAT was:attacked Mike-TOP lion-DAT be
'Tom was attacked by a bear. Mike was attacked by a lion.'

b. Tom-ga$_1$ kuma-ni$_2$ [$_{IP}$ t_1 t_2 osowareta].
Mike-wa *raion-ni* [$_{IP}$ t_1 t_2 osowareta].

In such cases, the correlate as well as the other remaining element in the first sentence (which is the subject in the case of (i) above) is moved out of the IP, as indicated in (i-b), and the lower IP in the first sentence is copied onto the Δ in the second sentence, yielding the structure shown in the second conjunct of (i-b).

[4] The issues related to the topic NP (*NP*-TOP) (for example, which position NP-TOP is in, and how NP-TOP appears at the beginning of a sentence, by movement or by base-generation) do not play a crucial role in this work.

At Spell-Out:
It's not clear that you'll be able to [$_{VP}$ stuff this ball through this hoop].
PF: It's not clear that you'll be able to ~~[$_{VP}$ stuff this ball through this hoop]~~.

It seems that the deletion operation is also assumed in the literature to apply only to a constituent. Thus, under this assumption, the unacceptability of (12) is accounted for either by the copying or the deletion approach.

Let us now turn to verbless conjunction, which is introduced in (1), repeated here.[5]

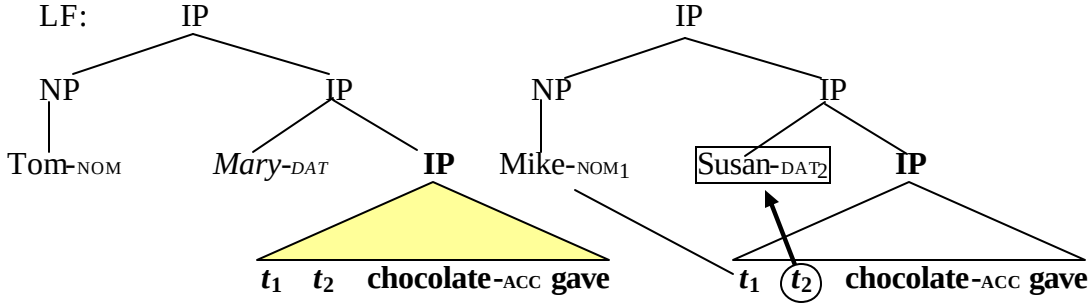
(1) Verbless conjunction:
Tom-ga *Mary-ni*, Mike-ga Susan-ni tyokoreeto-o ageta.
Tom-NOM Mary-DAT Mike-NOM Susan-DAT chocolate-ACC gave
'Tom gave some chocolate to Mary, and Mike to Susan.'

Verbless conjunction is schematized as in (14); again for convenience, I call the italicized NP and the boxed NP, shown in (14), the *remnant* and the *correlate*, respectively.

(14) Verbless conjunction:
[... *the remnant-CM* ϕ], [... the correlate-CM ... verb]

The first half of the construction looks similar to stripping, so one might suppose, as given in (15), that the correlate (i.e., Susan-DAT) must undergo movement and the copying operation applies to the lower IP, just as in stripping.

(15) After copying operation:
LF:



If this is a correct analysis, the sentence is expected to be unacceptable if the correlate is

[5] 'Ellipsis' in this paper means that the construction has a fully represented LF representation though something is elided at PF. One might wonder how one could draw a conclusion that verbless conjunction is an instance of ellipsis, in spite of another possibility that the first conjunct of verbless conjunction may be either a (non-identificational) copulative sentence as shown in (i), or a sentence which includes empty verb as well as empty nominal as shown in (ii); since it is well known that Japanese has an empty nominal, it might be possible that Japanese also has an empty verb.
(i) [$_{IP}$ Tom-NOM Mary-DAT (copula)], [$_{IP}$ Mike-NOM Susan-DAT chocolate-ACC gave]
(ii) [$_{IP}$ Tom-NOM Mary-DAT [$_{NP}$ ec] [$_{V}$ ec]], [$_{IP}$ Mike-NOM Susan-DAT chocolate-ACC gave]
I will argue in section 3 that verbless conjunction of the sort under discussion is indeed an instance of ellipsis and that it cannot be analyzed either as (i) or (ii) above; see (22) and (44) below and the remarks thereabout.

located in an island. However, (16) is acceptable, showing a clear contrast with the example of stripping given in (12), repeated here.[6, 7]

(16) Verbless conjunction:
Mike-ga *raion-ni*, Tom-ga [$_{NP}$ kuma-ni osowareta otoko]-o tasuketa
Mike-NOM lion-DAT Tom-NOM bear-DAT was:being:attacked man-ACC saved
'Mike saved the man who was being attacked by a lion, and Tom saved the man who was being attacked by a bear.'

(12) Stripping:
*Tom-ga [$_{NP}$ kuma-ni osowareta otoko]-o tasuketa. Mike-wa *raion*-ni da
Tom-NOM bear-DAT was:being:attacked man-ACC saved Mike-TOP lion-DAT be
Intended as 'Tom saved the man who was being attacked by a bear. Mike saved the man who was being attacked by a lion.'

The fact that (16) is acceptable, unlike stripping in (12), cannot be accounted for by previous analyses of ellipsis. In the following section, I propose a new analysis that accounts for the contrast above.

2. Proposal

2.1 String Deletion

I claim that verbless conjunction given in (16) is derived from (17) in which the struck-through part is deleted provided that it is identical to the underlined part as a phonetic string.

(17) (=(16))
Mike-ga *raion-ni* ~~osowareta otoko-o tasuketa~~,
Tom-ga kuma-ni osowareta otoko-o tasuketa

Let us call this operation *String Deletion*. Notice that the struck-through part in (17), *osowareta otoko-o tasuketa*, is not a constituent, as illustrated in (16). While both the copying operation and the deletion operation discussed in section 1 are supposed to apply

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[6] Some speakers may not readily accept sentences such as (16). That would not raise a serious problem for my analysis, however. I will return to the issue of judgmental fluctuation at the end of section 2.2.

[7] The contrast between (16) and (12) cannot be attributed to the fact that the subject *Mike* in (16) carries *ga* 'NOM' while that in (12) carries *wa* 'TOP'. Attaching *ga* to the subject of stripping reduces 'naturalness' of the sentence, even in a non-subjacency context, as shown in (i) (unless a speaker intends to correct someone else's statement).

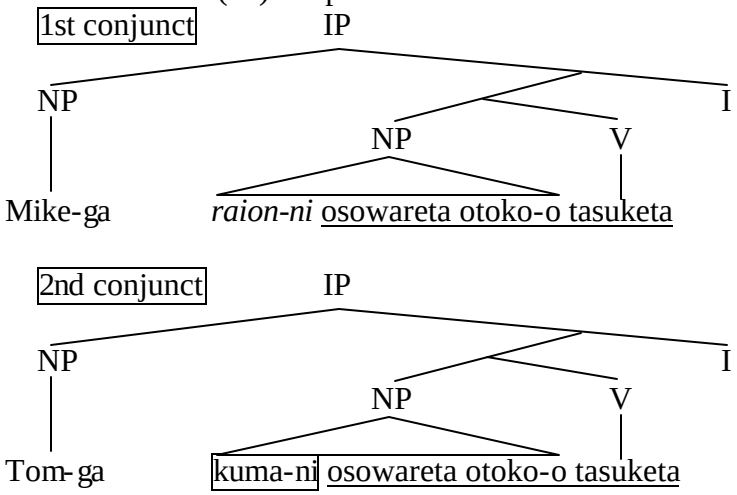
(i) Tom-ga kuma-ni osowareta. Mike-{?#ga/wa} *raion*-ni da.
Tom-NOM bear-DAT was:being:attacked Mike- NOM TOP lion-DAT be
'Tom was attacked by a bear. Mike who was attacked by a lion.'

Wa is used in (12) instead of *ga*, so as to avoid this problem; yet (12) is unacceptable.

to a constituent, String Deletion applies to a phonetic string, regardless of its constituency.[8]

Here is an illustration of how String Deletion works. (18) is the structure of (16) at Spell-Out.

(18) The structure of (16) at Spell-Out:



The underlined part in the first conjunct is also found in the second conjunct, so it is deleted by String Deletion as shown in (17).[9] Once we assume that String Deletion ignores constituency and that verbless conjunction can be derived by String Deletion, the movement of the correlate is no longer necessary in the derivation of verbless conjunction. The absence of island effects in verbless conjunction is thus as expected.

There is supporting evidence for the claim that verbless conjunction is sensitive to the identity at PF. In Japanese, the verb form usually varies depending on the degree of

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[8] It has been pointed out in Wexler & Culicover 1980: section 5.2.4.5, Wilder 1997, and among others, that the Right Node Raising (RNR) construction in English shown in (i) also involves a deletion operation not sensitive to constituency.

(i) Mary buys, and Bill sells, pictures of Fred. (Wexler & Culicover 1980: 299, (78a))

I will compare verbless conjunction in Japanese with the RNR construction in English in the last section.

[9] I assume that the only structural condition on String Deletion is that the target string is continuous and contains a verb. This means that all of the PF representations in (ii) are expected to be well-formed outputs of String Deletion for the structure in (i).

(i) Tom-NOM Mary-DAT chocolate-ACC gave Mike-NOM Susan-DAT chocolate-ACC gave

(ii) a. Tom-NOM Mary-DAT chocolate-ACC ~~gave~~ Mike-NOM Susan-DAT chocolate-ACC gave

b. Tom-NOM Mary-DAT chocolate-~~ACC gave~~ Mike-NOM Susan-DAT chocolate-ACC gave

c. Tom-NOM Mary-~~DAT chocolate-ACC gave~~ Mike-NOM Susan-DAT chocolate-ACC gave

If the target string is discontinuous, verbless conjunction seems to me to be unacceptable, as shown in (iii) and (iv). (But see footnote 22.)

(iii) *Tom-ga keeki-o, Mike-ga Mary-ni tyokoreeto-o ageta
Tom-NOM cake-ACC Mike-NOM Mary-DAT chocolate-ACC gave
Intended as 'Tom gave a cake to Mary, and Mike gave a chocolate to Mary.'

(iv) The PF representation of (iii):
Tom-NOM ~~Mary-DAT~~ cake-ACC ~~gave~~, Mike-NOM Mary-DAT chocolate-ACC gave
*deletion (the deleted phonetic string is discontinuous.)

honorification.[10] For example, both *mesiagatta* and *tabeta* can be translated as 'ate' in English but *mesiagatta* is specifically used when the speaker would like to show respect for the person expressed by the subject. Thus, the sentence in (19) is unacceptable because the subject is the first person and it is strange to express one's respect for oneself.

(19) *Boku-ga tempura-o mesiagatta.
I-NOM tempura-ACC ate(HONORIFIC)
'I ate(HONORIFIC) tempura.'

Consider now an acceptable stripping example in (20) and its potential underlying forms in (21).

(20) Stripping:
Kootyoosensei-ga osusi-o mesiagatta. Boku-wa *tempura-o* da.
principal-NOM sushi-ACC ate(HONORIFIC) I-TOP tempura-ACC be
'The principal ate(HONORIFIC) sushi, and I ate tempura.'

(21) a. *Kootyoosensei-ga osusi-o mesiagatta. Boku-wa tempura-o mesiagatta.
principal-NOM sushi-ACC ate(HONORIFIC) I-TOP tempura-ACC ate(HONORIFIC)
'The principal ate(HONORIFIC) sushi, and I ate(HONORIFIC) tempura.'
b. Kootyoosensei-ga osusi-o mesiagatta. Boku-wa tempura-o tabeta.
principal-NOM sushi-ACC ate(HONORIFIC) I-TOP tempura-ACC ate
'The principal ate(HONORIFIC) sushi, and I ate tempura.'

Since (21a) contains unacceptable honorification as in (19) while (21b) does not, we should assume that what underlies (20) is (21b) rather than (21a). The acceptability of (20) indicates that *mesiagatta* ('ate(HONORIFIC)') and *tabeta* ('ate') are not distinct for the operation which applies in the case of stripping. In other words, stripping is not sensitive to the verb form difference in question.[11]

Unlike stripping, verbless conjunction is sensitive to the verb form difference: (22) is unacceptable just as (19).

(22) Verbless conjunction:
*Boku-ga *tempura-o*, kootyoosensei-ga osusi-o mesiagatta.
I-NOM tempura -ACC principal-NOM sushi-ACC ate(HONORIFIC)
'I ate tempura, and the principal ate(HONORIFIC) sushi.'

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[10] See Harada 1976 for extensive discussion of Japanese honorifics.

[11] One might recall the concept of *vehicle change* in Fiengo & May 1994. Fiengo & May (1994) claim that some agreement features of NP (such as gender and number) can be regarded as irrelevant in checking the identity of the antecedent site and the ellipsis site at LF (see Fiengo & May 1994: 218-227). Under their assumption, for example, VP1 and VP2 in (i-b) are regarded as identical (despite the difference in gender and number of the pronouns), and therefore it is correctly predicted that VP ellipsis in (i-a) can be interpreted as (i-b).

(i) a. John and Bill recommended their boss before I did.
b. John and Bill [$_{VP1}$ recommended **their** boss] before I [$_{VP2}$ recommended **my** boss].

This is explained straightforwardly if verbless conjunction is sensitive to the PF identity condition, contrary to stripping in Japanese[12]; (22) would have to be derived from (23), but since the first conjunct in (23) contains an inappropriate combination of the subject and the verb in regard to honorification, (22) is unacceptable.

(23) PF: I-NOM *tempura*-ACC ~~ate(HONORIFIC)~~ Principal-NOM sushi-ACC ate(HONORIFIC)

To sum up the discussion so far, the LF identity is sufficient for some elliptical constructions such as stripping in Japanese while both the LF and the PF identity are necessary for other elliptical constructions including verbless conjunction.

2.2 The comparison with the previous analyses

There are several works on verbless conjunction in Japanese. For example, it is suggested in Abe & Hoshi 1997: appendix that verbless conjunction is derived by the operation that is involved in *gapping* in English such as (24).

(24) John loves Mary, and Bill Jane.

Slightly modifying the analysis of Jayaseelan 1990, Abe & Hoshi (1997) claim that (24) has the LF representation shown in (25).[13]

(25) (before Copy) [$_{IP}$ John [$_{I'}$ [$_{I'}$ loves t_i] Mary$_i$]] and [$_{IP}$ Bill [$_{I'}$ [$_{I'}$ Δ] Jane]].

This analysis is basically the same as the copying approach mentioned in section 1.

(26) The proposed representations of (1) under the copying analysis:
PF: [$_{IP}$ [$_{IP}$ Tom-NOM Mary-DAT [ϕ]]
[$_{IP}$ Mike-NOM Susan-DAT chocolate-ACC gave]]

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[12] Hajime Hoji pointed out to me (p.c., October 2002) that if the identity at PF is the only requirement that needs to be satisfied for the construction in question, we would make a wrong prediction on the status of an example involving homonyms. Consider the following example. *Kumo* in Japanese can mean both 'cloud' and 'spider'.

(i) John-ga Mary-ni, Bill-ga Susan-ni *kumo*-o miseta
John-NOM Mary-DAT Bill-NOM Susan-DAT cloud/spider-ACC showed
'John showed Mary a cloud/a spider, and Bill showed Susan a cloud/a spider.'

If the PF identity were a sufficient identity condition for verbless conjunction, there might be four possible interpretations; for example, it should be possible to interpret (i) as (ii).

(ii) John showed a Mary a cloud, and Bill showed Susan a spider.

But such is not the case. This means that LF identity, as well as PF identity, is relevant in the case of verbless conjunction. What is important, however, is that some elliptical constructions, such as stripping in Japanese, are not contingent on PF identity, while others, such as verbless conjunction in Japanese, are.

[13] Jayaseelan (1990: 73) originally claims that "[g]apping can be analyzed as S Deletion." Abe & Hoshi (1997: footnote 2) note that "[c]ontrary to Jayaseelan, we adopt the copying analysis rather than the deletion analysis for ease of exposition. As far as we can see, this does not affect his main claims." The LF copying analysis of gapping in English is pursued in Pesetsky 1982: 640-659.

LF: [$_{IP}$ [$_{IP}$ Tom-NOM [$_{IP}$ Mary-DAT [$_{IP}$ Δ]]]
[$_{IP}$ Mike-NOM [$_{IP}$ Susan-DAT [$_{IP}$ *t* *t* chocolate-ACC gave]]]]

As discussed there, if verbless conjunction were to be analyzed in this way, the construction should necessarily involve the movement of the correlate out of the VP, and the analysis fails to account for the fact that this construction does not exhibit island effects.

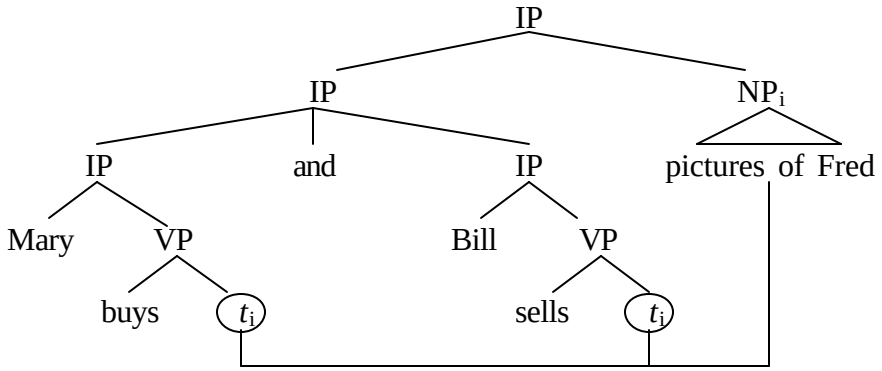
Saito (1987) maintains that verbless conjunction is derived by the rule called *right node raising* (RNR).[14] Let us call this analysis the *RNR analysis*. (27a) is an instance of the construction in English which involves RNR.

(27) Mary buys, and Bill sells, pictures of Fred.

RNR applies to (28a), and yields a representation (28b), in which the elements at the right edge of the two conjoined clauses (i.e., *pictures of Fred*) is raised rightward in an across-the-board manner.

(28) a. [$_{IP}$ [$_{IP}$ Mary buys [$_{NP}$ pictures of Fred]] and
[$_{IP}$ Bill sells [$_{NP}$ pictures of Fred]]]

b.



If verbless conjunction such as (1) has the same structure as (28b) as Saito (1987) claims, RNR should apply to *tyokoreeto-o ageta* ('chocolate-ACC gave').[15]

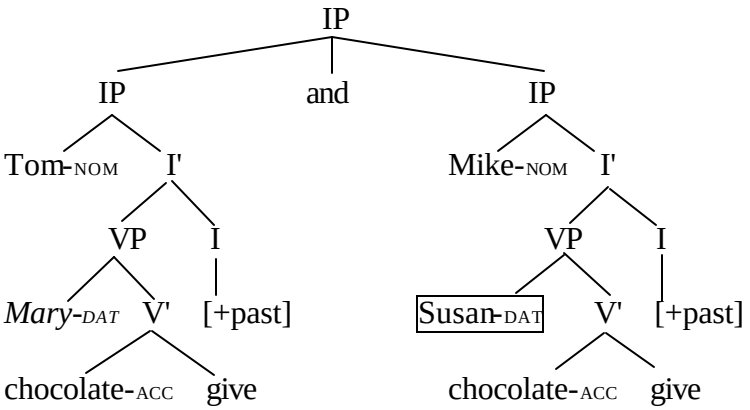
(1) Tom-ga *Mary-ni*, Mike-ga Susan-ni tyokoreeto-o ageta.
Tom-NOM Mary-DAT Mike-NOM Susan-DAT chocolate-ACC gave
'Tom gave some chocolate to Mary, and Mike to Susan.'

Given the structure in (29), the smallest constituent which includes the target is the I', and hence, the remnant (*Mary-DAT*) and the correlate (*Susan-DAT*) should move out of the position, as shown in (30), in order for the I' to contain only the shared elements.

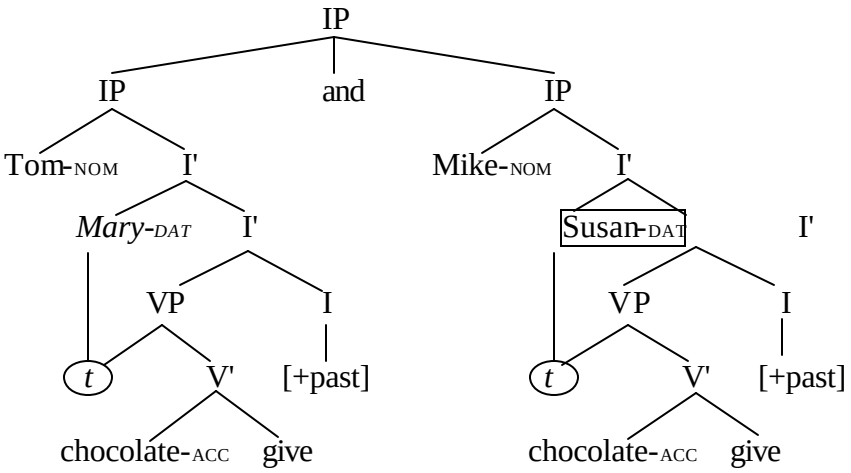
[14] Kuno (1978: 132) claims that verbless conjunction is derived through right node raising, but he does not provide any arguments for it.

[15] The following discussion is based on Abe & Hoshi's (1997) illustration of Saito 1987: 312, section 3.

(29)



(30)



Since the RNR analysis, as in the case of the gapping analysis, assumes that verbless conjunction involves the movement of the correlate, it faces the same problem as the gapping analysis: it fails to predict the absence of island effects in verbless conjunction.

(16) Verbless conjunction:
Mike-ga *raion-ni*, Tom-ga [$_{NP}$ [$_{IP}$ pro kuma-ni osowareta] otoko]-o tasuketa
Mike-NOM lion-DAT Tom-NOM bear-DAT was:being:attacked man-ACC saved
'Mike saved the man who was being attacked by a lion, and Tom saved the man who was being attacked by a bear.'

Some speakers may not readily accept sentences like (16), as pointed out in footnote 6. One might attribute this to subjacency, taking it as evidence that verbless conjunction involves movement (at least for the speakers in question) as proposed by the proponents of the RNR or the gapping analysis of this construction. Suppose (16) is unacceptable for some speakers because the movement of the correlate violates the subjacency constraint. We then expect (31) to be acceptable for those speakers, in contrast to (16).[16]

[16] *Omotteita* 'thought' is a bridge verb and the extraction of *Nets*-DAT out of the embedded CP does not violate the subjacency constraint, as shown in (i).

(31) Tom-ga *Lakers-ni*, Mike-ga Nets-ni Bulls-ga katu to omotteita
Tom-NOM Lakers-DAT Mike-NOM Nets-DAT Bulls-NOM defeat COMP thought
'Tom thought that Bulls would defeat Lakers, and Mike thought that Bulls would defeat Nets.'

The result of the survey I conducted at Kyushu University (Japan, July 9th, 2002), however, is quite contrary to this expectation. (32) summarizes the results.

(32) Subjects who responded to all the questions: 43 [17]
a. Subjects who accepted (16): 37 [18]
b. Subjects who rejected (16) but accepted (31): 0
c. Subjects who rejected both (16) and (31): 6 [19]

The response by 37 subjects out of 43 that (16) (as well as (31)) is acceptable is as expected under the proposed analysis of verbless conjunction; see (32a). Under the RNR/gapping analysis, on the other hand, this is quite unexpected. Under those analyses, (16) violates the subjacency condition while (31) does not. As indicated in (32b), however, no subject reported that (16) is unacceptable while (31) is acceptable. One might object that the results reported above merely represent surface acceptability judgments. It is true that the distribution of the acceptability judgment of a given sentence does not necessarily reflect the grammaticality of the intended construction. The tendency, however, is clear, and I take this result as a serious problem for both the RNR analysis and the gapping analysis.

3. The role of a case-marker in Japanese

Notice that each remnant in the sentences above carries a case-marker. The aim of this section is to show that, if the remnant NPs do not carry a case-marker, the sentences exhibit quite different syntactic properties, and to claim that we should exclude them

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(i) Nets-ni [Mike-wa Bulls-ga *t* katu to omotteita]
Nets-DAT Mike-TOP Bulls-NOM defeat COMP thought
'Mike thought that Bulls would defeat Nets.'

[17] The number of the subjects was 48. About 35 of them were undergraduates, who had not been exposed to this kind of discussion.

[18] There are two small subgroups in this category. First, eight people even accepted the examples which (appear to) violate the subjacency condition in a non-elliptical context.

(i) Ichiro-ni Mariners-no kantoku-ga [[pro *t* kikenkyuu-o nageta] toosyu]-o hinansita
Ichiro-DAT Mariners-GEN manager-NOM dangerous:ball-ACC threw pitcher -ACC damned
'The Manager of Mariners damned the pitcher who had thrown a dangerous ball to Ichiro.'

Second, four people accepted (16) but rejected (31). Such a reaction is not expected by either the copying or the RNR analysis, but it is suggestive that they also rejected (ii).

(ii) Nets-ni [Mike-wa Bulls-ga *t* katu to omotteita]
Nets-DAT Mike-TOP Bulls-NOM defeat COMP thought
'Mike thought that Bulls would defeat Nets.'

[19] It seems that these speakers do not like deleting materials across a clause boundary, but at the moment I have no interesting account to offer for this fact.

from discussion in the investigation of the grammatical nature of ellipsis in Japanese.

It is observed in Saito 1985 that the topic construction in Japanese is subject to subjacency if the topic phrase carries a case-marker.[20]

(33) (Based on Saito 1985: chap. 4, (73b), (73d))
a. Topic with a case-marker:
**Russell-ni-wa* John-ga [$_{NP}$ [$_{IP}$ pro *ec* atta koto-ga aru] nihonzin]-o
Russell-DAT-TOP John-NOM met fact-NOM have Japanese-ACC
oozei sitteiru rasii
many know seem
'It seems that John knows many Japanese who have met Russell.'
b. Topic without a case-marker:
Russell__-wa John-ga [$_{NP}$ [$_{IP}$ pro *ec* atta koto-ga aru] nihonzin]-o
Russell-TOP John-NOM met fact-NOM have Japanese-ACC
oozei sitteiru rasii
many know seem
'It seems that John knows many Japanese who have met Russell.'

Hoji (1990) points out that a similar contrast is also observed in the cleft construction.

(34) (Based on Hoji 1990: chap. 5, (105b), (106))
a. Focus with a case-marker:
?*[John-ga [$_{NP}$ [$_{IP}$ pro *ec* atta koto-ga aru] nihonzin]-o oozei sitteiru]-no-wa
John-NOM met fact-NOM have Japanese-ACC many know-N-TOP
[*Russell-ni*] da
Russell-DAT be
'It is Russell that John knows many Japanese that have met.'
b. Focus without a case-marker:
[John-ga [$_{NP}$ [$_{IP}$ pro *ec* atta koto-ga aru] nihonzin]-o oozei sitteiru]-no-wa
John-NOM met fact-NOM have Japanese-ACC many know-N-TOP
[*Russell__*] da
Russell be
'It is Russell that John knows many Japanese that have met.'

Fukaya & Hoji (1999) as well as Hoji (1990: chap. 5) and Ueyama (1998: 63) (in effect) claim that the contrasts above are accounted for if a condition like (35) is part of the grammar (of Japanese)).

(35) The case-marked NP is interpreted by being 'connected' to a position within the θ-domain of a verb.
(Fukaya & Hoji 1999: footnote 9.)

(33a) and (34a) are unacceptable because, due to the subjacency violation, each of the

[20] Saito (1985: chapter 4) calls the construction shown in (33a) *PP topicalization* and the one in (33b) *NP topicalization*.

italicized NPs cannot be 'connected' to the θ-marked position. On the other hand, (33b) and (34b) are acceptable, since (35) does not apply to the cases where the relevant NPs do not carry a case-marker. As is widely known, the scrambling construction in Japanese (the sentence in which a case-marked NP is 'dislocated' from its θ-position) also shows island effects, and that is as expected under the view that a case-marked NP should be constrained by (35).

As we have seen, stripping is unacceptable if the correlate is located in an island and the remnant carries a case-marker. But the sentence becomes acceptable once we drop the case-marker on the remnant, as shown in (36). The two types of stripping in (36B-i) and (36B-ii) will be referred to as *CM stripping* and *Non-CM stripping*, respectively, following Fukaya & Hoji 1999.

(36) (Based on Hoji 1990: chap. 5, (114) and (116))
A: [$_{NP}$ furansu ryoori-o tukuru hito]-ga yoku koko-ni kuru.
French cuisine-ACC make people-NOM often here-to come
'People who make French cuisine come here often.'
B:(i) **Itariya ryoori-o*-mo da (CM stripping)
Italian cuisine-ACC-ALSO be
(ii) *Itariya ryoori*-mo da (Non-CM stripping)
Italian cuisine-ALSO be
Intended as 'People who make Italian cuisine (as well as those who make French cuisine) come here often.'

The contrast in (36B) can also be attributed to (35). To interpret the case-marked remnant in (36B-i), the NP should be 'connected' at LF to a position within the θ-domain of a verb, which is possible only if the elided VP is reconstructed based on the antecedent VP; but this would result in subjacency violation, as we have seen above. On the other hand, the non-case-marked remnant in (36B-ii) is not subject to (35), which means that (36B-ii) need not be an instance of ellipsis. For example, it can be regarded as a copulative sentence as in (37), where the subject *sore-wa* 'it-TOP' is not pronounced.

(37) (Sore-wa) *itariya ryoori*-mo da
it-TOP Italian cuisine-ALSO be
(Lit.) 'As for that, Italian cuisine, too.'

The content of *sore* is left open in syntax and interpreted appropriately in the discourse.

As Fukaya & Hoji (1999) argue, the difference between CM stripping and Non-CM stripping can be stated in terms of *surface anaphora* and *deep anaphora* of Hankamer & Sag 1976. Surface anaphora "[is] derived from fully specified syntactic forms by deletion under identity with antecedent forms" (Hankamer & Sag 1976: 423). One typical example of surface anaphora is VP ellipsis, and as we have seen at the beginning of section 1, VP ellipsis requires a linguistic antecedent.[21] We can also assume that CM

[21] Dalrymple (1991: 6) observes that "[a]s pointed out by Sag (1976), Dalrymple et al. (1991), and others, there is not always a clear syntactic source for the reconstructed VP in case of ellipsis." See Hoji 2002a:

stripping is an instance of surface anaphora because it cannot be interpreted without a linguistic antecedent, as shown in (8) above.

On the other hand, deep anaphora "is not derived transformationally but is present in underlying representations" (Hankamer & Sag 1976: 421) *Do it* is an instance of deep anaphora. Since the content of deep anaphora can be controlled pragmatically, it does not require a linguistic antecedent.

(38) (Hankamer & Sag 1976: (4))
[Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop.]
Sag: It's not clear you'll be able to do it.

Unlike CM stripping shown in (8), Non-CM stripping can also appear without a linguistic antecedent, which is well expected if Non-CM stripping can be an instance of deep anaphora, as Hoji (1990: (172) and (173) in section 5 of chapter 5; 2002a) and Fukaya & Hoji (1999: section 2.2) argue.

(39) [Tom and Mike are observing John making French cuisine very well. Tom says to Mike:]
Itariya ryoori-mo da (Non-CM stripping)
Italian cuisine-ALSO be
'(John makes) Italian cuisine (very well), too.'

Given the preceding discussion, it is interesting to observe that there are two kinds of verbless conjunction, namely, CM verbless conjunction and Non-CM verbless conjunction (although we have so far concentrated only on the former). (40) is an instance of Non-CM verbless conjunction.

(40) Tom-ga *tyokoreeto*, Mike-ga keeki-o tabeta.
Tom-NOM chocolate Mike-NOM cake-ACC ate
'Tom ate some chocolate, and Mike ate some cake.'

Since the remnant does not carry a case-marker, this sentence can be an instance of deep anaphora. This means that (40) need not involve string deletion and the first conjunct can be regarded as a kind of copulative sentence, where the copula *da* is not pronounced. Although the first conjunct in (40) might not seem to qualify as a copulative sentence, such 'predication' is in fact frequently found in Japanese, as extensively discussed in the past (generative as well as non-generative) literature, including Hoji 1987, Kitahara 1981, Nishiyama 2001, Okutsu 1978, Sakahara 1990, among others.

(41) Boku-wa unagi (da).
I-TOP eel be
'As for me, it is an eel.' (Intended as 'It is an eel that I want to eat.')

Furthermore, Non-CM verbless conjunction is expected to be acceptable even if there is a

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section 7.6 for relevant discussion.

selectional mismatch between the remnant in the first conjunct and the predicate of the second conjunct, because the first conjunct of Non-CM verbless conjunction can be analyzed as an instance of deep anaphora and therefore can be considered to be a copulative sentence, irrespective of the second conjunct. The example in (42) is interpretable if one considers the situation given in (43), for example.

(42) Non-CM verbless conjunction:
Imooto-wa *manga*, boku-wa biiru-o nondeitanda (yo).
My:sister-TOP comic:book I -TOP beer-ACC was:drinking PARTICLE

(43) Situation: Tom told Mary that he and his sister had to wait for their train for three hours when they were coming back from Tokyo. Mary asked Tom how they killed time at the station. Tom answers as in (42).

It is noteworthy that, if the remnant in (42) carries a case-marker, as in (44), the sentence could only mean that 'my sister drank a comic book', even under the situation in (43).

(44) CM verbless conjunction:
*Imooto-wa *manga -o*, boku-wa biiru-o nondeitanda (yo).
My:sister-TOP comic:book-ACC I -TOP beer-ACC was:drinking PARTICLE
'My sister was reading a comic book, and I was drinking beer.'

I have claimed in the previous section that the operation which applies to verbless conjunction is different from the one involved in Japanese stripping. The four sentences which crucially support the claim are repeated below.

(45) a. Stripping (=(12)):
*Tom-ga [$_{NP}$ kuma-ni osowareta otoko]-o tasuketa. Mike-wa *raion-ni* da
Tom-NOM bear-DAT was:being:attacked man-ACC saved Mike-TOP lion-DAT be
Intended as 'Tom saved the man who was being attacked by a bear. Mike helped the man who was being attacked by a lion.'
b. Verbless conjunction: (=(16))
Mike-ga *raion-ni*, Tom-ga [$_{NP}$ kuma-ni osowareta otoko]-o tasuketa
Mike-NOM lion-DAT Tom-NOM bear-DAT was:being:attacked man-ACC saved
'Mike saved the man who was being attacked by a lion, and Tom saved the man who was being attacked by a bear.'

(46) a. Stripping (=(20)):
Kootyoosensei-ga osusi-o mesiagatta. Boku-wa *tempura-o* da.
principal-NOM sushi-ACC ate(HONORIFIC) I-TOP tempura -ACC be
'The principal ate(HONORIFIC) sushi, and I ate tempura.'
b. Verbless conjunction (=(22)):
*Boku-ga *tempura-o*, kootyoosensei-ga osusi-o mesiagatta.
I -NOM tempura-ACC principal-NOM sushi-ACC ate(HONORIFIC)

'I ate tempura, and the principal ate(HONORIFIC) sushi.'

The contrast between (45a) and (45b) confirms the claim that stripping involves movement while verbless conjunction does not. In addition, the contrast between (46a) and (46b) has led us to conclude that verbless conjunction is contingent on the PF identity while stripping is not. (45a) and (46b) differ from their Non-CM counterparts in (47) and (48), respectively, only with respect to the presence and the absence of the case-marker on the remnant NP.

(47) Stripping (cf. (45a):
Tom-ga [$_{NP}$ kuma-ni osowareta otoko]-o tasuketa. Mike-wa *raion* da
Tom-NOM bear-DAT was:being:attacked man-ACC saved Mike -TOP lion be
Intended as 'Tom saved the man who was being attacked by a bear. Mike saved the man who was being attacked by a lion.'

(48) verbless conjunction (cf. (46b):
Boku-ga *tempura*, kootyoosensei-ga osusi-o mesiagatta.
I-NOM tempura principal-NOM sushi-ACC ate(HONORIFIC)
'I ate tempura, and the principal ate(HONORIFIC) sushi.'

As is expected from the discussion in this section, (47) and (48) are acceptable. Thus the mere addition of a single morpheme can radically change the acceptability of a sentence, and this is another case where the case-marker is playing a crucial role in Japanese. This is what Hoji 1990 and Fukaya & Hoji 1999 have emphasized, and the considerations in this section confirm their conclusion: it is important to concentrate on CM constructions rather than on Non-CM constructions if we are to discover the nature of grammar, since the latter often easily allows an interpretation largely on the basis of pragmatic inferences. This does not necessarily mean that every Non-CM construction lacks syntactic operations; for example, some instances of Non-CM verbless conjunction may in fact involve String Deletion (just as some instances of Non-CM stripping may involve movement, as suggested in Fukaya & Hoji 1999: section 5). But we cannot use them in testing our hypothesis, since it is not possible to exclude the possibility that the interpretation in question is affected by pragmatic factors.

4. Summary and further issues

To summarize, verbless conjunction can be derived by String Deletion, and the process does not involve movement. String Deletion requires the identity of phonetic strings at PF, ignoring constituency. Since it is known that in the case of VP ellipsis in English and stripping in Japanese the target of operation should be a constituent and the identity condition applies at LF, it follows that grammar has two types of identity conditions; one is sensitive to the identity of structures at LF and the other to the identity of phonetic strings at PF.

What I have not worked out yet and need to consider in the future research is the issue of what property distinguishes some elliptical constructions which are contingent

only on LF identity (such as stripping in Japanese) from the others which require PF identity as well as LF identity (such as verbless conjunction). One of the crucial factors people might initially hit on may be 'directionality'; the former is an instance of forward ellipsis, while the latter is backward ellipsis. Wilder (1997: 74) indeed argues that "[backward deletion] and [forward deletion] differ not just in directionality, but also with respect to [identity conditions]." On the basis of asymmetries between the RNR construction in English, as in (27), and gapping in English, he concludes that identity is checked at LF for forward ellipsis but at PF for backward ellipsis.

(27) Mary buys, and Bill sells, pictures of Fred.

Given his proposal, we are led to expect that stripping in Japanese behaves like gapping in English while verbless conjunction in Japanese like the RNR construction. The observations on the RNR construction given in Wilder 1997 and Phillips 1996 seem to confirm the expected parallelism between the RNR construction and verbless conjunction. The properties of verbless conjunction are summarized in (49).[22]

(49) a. A non-constituent can be 'shared' by the first and the second conjuncts.
b. Subjacency effects are not observed.
c. The PF identity condition is required.[23]

Each of these properties seems to be shared by the RNR construction; see Wilder 1997: (109) and (100b) for (49a), Phillips 1996: chapter 2, (61b), (62b) and (63b) for (49b), and Wilder 1997: (120) and (121) for (49c).[24] It also seems to be the case that gapping in English and (multiple) stripping in Japanese behave quite similarly (see footnote 3), and the expected parallelism does seem to obtain.[25]

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[22] Wilder (1997) mentions that a 'shared element' in the RNR construction must be in the right-peripheral position.

(i) *I said Mary ___ a book ___ and you said Sue gave a paper to John. (Wilder 1997: (141b)

This observation seems analogous to what I stated in footnote 9: "If the target string is discontinuous, verbless conjunction seems to me to unacceptable."

[23] The example in (i) is referred as an instance of the RNR construction in Phillips 1996. One might suspect that it is inconsistent with the observation in (49c).

(i) (Phillips 1996: chapter 2, (61a))
[John will] and [Mary already has] *mailed the conference program to all of the presenters*.
Cf. *John will mailed the conference program to all of the presenters.

But as long as the first conjunct can be regarded as an instance of VP ellipsis, which is contingent only on LF identity, (i) does not pose a serious problem to the present work. Wilder (1997), in fact, suggests that VP ellipsis "may appear both in initial and final conjuncts in coordination" (Wilder 1997: 60), and the first and the second conjunct in (i) indeed can be reversed.

[24] Due to the space limitation, the actual examples cannot be provided here.

[25] Not all properties are shared, however, by the RNR construction and verbless conjunction. For example, the former can appear in non-coordinate sentences (see Phillips 1996: chapter 2, (74b) and Wilder 1997: (115a)), but the latter cannot. This seems related to the head-initial vs. the head-final difference between English and Japanese, but the space limitation prevents me from providing further discussion.

When we consider a wider range of empirical materials and try to understand them in a more formal terms, various new questions arise. The discussion in Hoji 2002b, for example, suggests the possibility of backward multiple stripping in Japanese, which in turn makes it possible in principle to analyze some

A more rigorous attempt, however, must be made to characterize the formal properties of the elliptical constructions under discussion: how directionality plays a role in their licensing and how the relevant properties can be derived from the properties of UG so as to make predictions about elliptical constructions in natural language in general. I would like to think that the present paper makes a contribution to such a research program.

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instances of what is called "verbless conjunction" in the present work as instances of backward multiple stripping. This would in turn make one wonder why English does not (seem to) allow backward gapping. Such a difference might also be attributable to the head-initial vs. the head-final distinction, but further discussion must await a separate occasion.

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