Syntactic structures of resultatives revisited [1]

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1. Introduction

The syntactic structures of the resultative constructions in English, exemplified by (1a,b) and (2a,b) below, have been controversial in the generative literature. [2]

(1) a. They watered the tulips flat.

   b. They hammered the metal flat.

(2) a. Complete fanatics, Free would arrive at each gig hours early to sit in the dressing room together and play themselves into readiness.

   b. … They looked into the car. They talked to each other. For a moment I was afraid they would talk the female to death. I have seen human beings talk to each other for hours.

The controversy is neatly summarized in Carrier & Randall (1992), where they classify the generative analyses into three : (i) the uniform Small Clause (SC) analysis, (ii) the uniform Ternary Analysis, and (iii) the Hybrid analysis. They are schematically illustrated in (3), (4), and (5), respectively. The structures given in (a) are proposed to be the underlying structures for the type of constructions in (1a,b), where the logical subjects of the resultative predicates serve as the thematic objects of the matrix predicates such as *water* and *hammer*. The structures in (b), on the other hand, indicate the underlying structures for the type of constructions in (2a,b), where the subjects of the resultative predicates
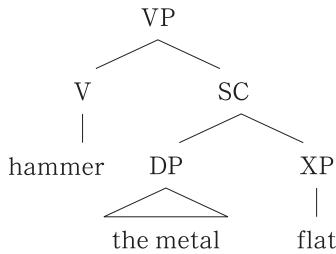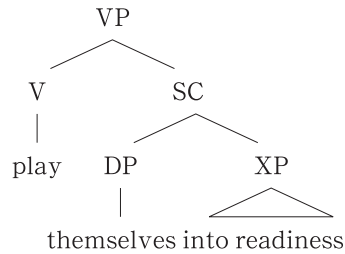
apparently do not receive thematic roles from the matrix verbs such as *play* and *talk*. We follow Carrier & Randall in referring to the resultative constructions in (1a,b) as "transitive resultative constructions", and those in (2a,b) as "intransitive resultatives".

(2) The uniform SC analysis
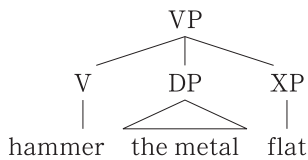
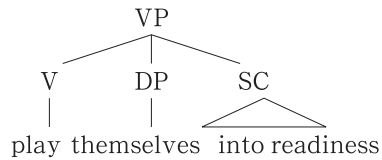   a.   transitive resultatives   b.   intransitive resultatives

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        VP                          VP
      /    \                      /    \
     V      SC                   V      SC
     |     /  \                  |     /  \
  hammer  DP    XP             play  DP     XP
         / \    |                    |      /\
    the metal  flat            themselves into readiness
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(3) The uniform Ternary analysis

   a.   transitive resultatives   b.   intransitive resultatives

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         VP                          VP
      /   |   \                    /   |   \
     V    DP   XP                 V    DP    SC
     |    |    |                  |    |    /\
  hammer the metal flat        play themselves into readiness
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(4) The Hybrid analysis

   a.   transitive resultatives   b.   intransitive resultatives
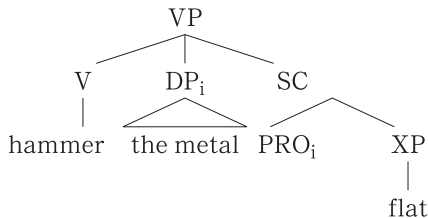
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         VP                           VP
      /   |   \                      /    \
     V   DPᵢ   SC                   V      SC
     |   / \   / \                  |     /  \
  hammer the metal PROᵢ   XP      play  DP     XP
                        |               |      /\
                       flat         themselves into readiness
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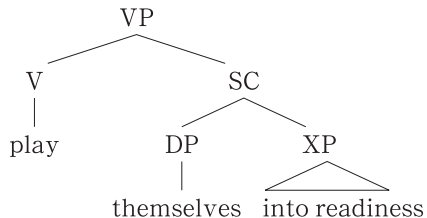
The uniform SC approach to the resultative constructions, given in (2), is discussed in Kayne (1985), whose outstanding proposal in the light of the present classification is that the postverbal nominals in the transitive resultatives are not the direct objects of the otherwise transitive matrix verbs. The uniform Ternary analysis of resultatives in (3), on the other hand, is defended by Carrier & Randall (1992), who argue that both the postverbal nominals and the resultative predicates are semantically selected by the matrix verbs and that the subject-predicate relation holding between the nominals and

the resultative predicates is obtained by an independent semantic principle, hence an elimination of the syntactic structure of small clauses. The Hybrid analysis in (4) is proposed by Hornstein & Lightfoot (1987), where the postverbal nominals in the intransitive resultative constructions occupy the subject positions of the resultative small clauses whereas those in the transitive constructions are direct complements of the matrix verbs, which control the PRO subjects of the resultative small clauses.

The primary concern of the present paper is the syntactic structures of the intransitive resultative constructions. In this light, the uniform SC analysis and the Hybrid analysis share the same proposal in that the constructions involve resultative small clauses. Thus, one of the differences between these analyses, on the one hand, and the uniform Ternary analysis, on the other, lies in the nature of the postverbal nominals with respect to their subjecthood/objecthood. It seems to be safe to say that this very nature motivates Carrier & Randall to adopt not the SC- approach but the Ternary alternative.

This paper reconsiders the arguments Carrier & Randall have made for the Ternary analysis and argues that some of the facts they base their arguments on actually reflect the nature of the underlying structures of the constructions, others reflect the nature of the superficial (derived) structures of the constructions, and still others actually show neither subjecthood nor objecthood. The discussions lead to the conclusion that the phenomena Carrier & Randall's analysis is based on in effect do not lend support to their Ternary analysis. We argue instead that the intransitive resultatives involve SC structures, as in (2b) and (4b).

The following discussions are organized as follows. Section 2 reviews Carrier & Randall's arguments for the Ternary analysis and attempts to refute them in favor of the conventional SC-approach to the intransitive resultatives. Section 3 introduces an apparent problem for the SC-approach to the intransitive resultatives and argues that the relevant linguistic fact reflects the derived objecthood of the postverbal DPs, so that they do not constitute a problem for us. Section 4 gives an interim summary of the discussion and makes clear the distinction between the SCs in the intransitive resultatives and "full-fledged"SCs. Section 5 extends the discussion to perception construction and suggests that the construction involves SCs similar to the intransitive resultative SCs. Section 6 is the conclusion of the paper.

2. On the arguments for the Ternary analysis by Carrier & Randall (1992)

Carrier & Randall's arguments for the Ternary analysis come from three different components of the grammar : (i) semantic selection, (ii) morphological or lexical processes, and (iii) syntax. As for semantic selection, they cite the following sentences to show that the difference in grammaticality among these sentences can be captured within the Ternary analysis, where the semantic types of the resultative predicates are specified by the verbs that take them. This is not the case in the SC analyses, they argue, because selectional relation is not definable at all between the verbs and the resultative predicates that reside within the SCs.

(5) a. the joggers ran themselves sweaty/*sweating/exhausted

b. the kids laughed themselves sick/*sickened

c. the chef cooked the kitchen walls black/*blackened

d. the tourists walked their feet sore/blistery/*blistered

e. Bill drank the glass empty/*emptied

(6) a. the maid scrubbed the pot shiny/*shined/*shining

b. the jockeys raced the horses sweaty/*sweating

c. the chef cooked the food black/*blackened/*charred

In this light, Embick (2004) argues that the availability of *empty* and the unavailability of *emptied* in (5e), for example, are essentially due to an aspectual specification of resultative constructions : only statives are compatible with resultatives. This is why the perfective aspect of *emptied*, *sickened*, *blackened*, *blistered*, and so on is not allowed in resultative constructions, nor is the progressive aspect of *sweating* and *shining*. It is the case that the aspectual specification of a given predicate plays an important role in specifying the aspect of the whole sentence the predicate appears in. But it is not true that the aspect of the sentence is always determined by the inherent specification of the predicate. Take a look at (7a,b), which show that the semantics of *toward* and *to* contribute to the specification of the aspect of the relevant sentences.

(7) a. They drove toward Tokyo for/*in an hour.

b. They drove to Tokyo in/*for an hour.

One plausible extension of this idea is that resultative SCs are syntactically AspPs. If this is on the right track, the unavailability of the derived adjectives such as *emptied* and *sweating* in (5) and (6) can be accounted for, under the SC-based analyses of the resultative constructions, by a semantic restriction to the effect that only the stative AspPs are available as resultative SCs. [3]

A second argument made by Carrier & Randall for the Ternary analysis concerns lexical or morphological processes : (i) process -*ing* nominalization, (ii) middle formation, and (iii) adjectival passive formation. (8)-(10) show that intransitive resultatives cannot undergo these processes, while transitive counterparts can, as indicated in (11)-(13).

(8) Intransitive resultatives : process -*ing* nominalization

    a. *the jogging craze has resulted in [the running of a lot of pairs of Nikes threadbare]

    b. *[the talking of your confidant silly] is a bad idea

(9) Intransitive resultatives : middle formation

    a. *the baby ticks [[e] awake] easily

    b. *this type of pavement runs [[e] thin] easily

    c. *this teapot drinks [[e] dry] in no time at all

(10) Intransitive resultatives : adjectival passive formation

    a. *a [ticked-awake] baby

    b. *the [run-thin] pavement

    c. *a [drunk-dry] teapot

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[3]Embick's (2005) approach to the resultative constructions is different from ours. He proposes that the transitive resultative constructions are headed by a fientive verb [FIENT], a near equivalent of BECOME, which takes a Theme argument as its subject and a STATE argument as its complement. Thus, sentence in (ia) has the structure in (ib), where the means component of the semantics of the sentence, namely, the hammering action, is introduced by the adjunction of HAMMER to FIENT as in (ic). Hence, the sentence is interpreted as 'John caused the metal to become/be flat by hammering it'.

(i) a. John hammered the metal flat
    b. $[_{vP}$ John $v_{\text{[AGENT]}}$ $[_{AspP}$ Asp $[_{vP}$ $_{\text{THEME}}$ the metal] $v_{\text{[FIENT]}}$ $[_{STATE}$ flat]]]]
    c. $[_{vP}$ John $v_{\text{[AGENT]}}$ $[_{AspP}$ Asp $[_{vP}$ $_{\text{THEME}}$ the metal] $v_{\text{[FIENT]}}$+HAMMER $[_{STATE}$ flat]]]]

The resultative predicate *flat* is directly selected by $v_{\text{[FIENT]}}$ and no SC is postulated. These considerations alone might lead us to conclude that his analysis is similar to the Ternary analysis. But the verb that selects *flat* is not the matrix verb HAMMER, which is crucially different from the Ternary analysis. In addition, *flat* establishes a subject-predication relation with *the metal* though the mediation of $v_{\text{[FIENT]}}$. The label of the resulting syntactic structure is *v*P, but it is semantically equivalent to SC in the sense that there is a subject-predication relation. Thus, it seems to be possible to say that Embick's analysis incorporate the SC approach to the subject-predicate relation to the resultative predicates.

(11) Transitive resultatives : process *-ing* nominalization

    a. [the painting of fire engines the color of schoolbuses] is strictly prohibited by the state law

    b. [the watering of tulips flat] is a criminal offense in Holland

(12) Transitive resultatives : middle formation

    a. this table wipes [e] clean easily

    b. this metal pounds [e] flat easily

(13) Transitive resultatives : adjectival passive formation

    a. a [wiped-clean] table

    b. [pounded-flat] metal

Let us consider the process *-ing* nominalization first. One general property of this process is that if the base verb has a DP to assign its structural accusative Case to, its process *-ing* nominalization fails when the DP is not an argument of the noun. This is because unlike structural Case, inherent Case that nouns have is assignable only to their thematic arguments. [4]   This is generalized as in (14)

(14) An *of*-NP of process *-ing* nominals is an argument of the noun.

(14) explains the contrast in grammaticality between (15b) and (16b).

(15) a. they cooked the banquet meal

    b. [the cooking of the banquet meal] went on for several hours

(16) a. they expect there to be a riot.

    b. *[the expecting of there to be a riot] is in the news

In (15b), *the banquet meal* is the direct complement of the noun *cooking* and the latter can assign inherent Case to the latter. In (16b), by contrast, *there* is not an argument of *expecting* and violates the Case Filter.

How, then, does the Ternary analysis exclude the process *-ing* nominalization of intransitive resultatives in (8a-c)? Carrier & Randall propose that although the resultative predicates have a structural sisterhood relation with the selecting verbs, they are not

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[4]See Chomsky (1986) for details.

direct arguments of the latter. This is of course a stipulation, not well established in the literature.

In the SC approach to intransitive resultatives, by contrast, the facts in (8)-(13) are quite straightforward : postverbal DPs in intransitive resultatives are not arguments of the matrix verbs and fail to be assigned inherent Case, in violation of the Case Filter.

Middle formation and adjectival passive formation have similar properties, which are summarized in (17). These conditions rule (19b)/(21b) out, and (18b)/(20b) in.

(17)   Middle formation and adjectival passive formation apply only to the verbs that have direct DP complements.

(18)   a. you can handle this car easily
       b. this car handles [e] easily

(19)   a. they laughed at the politicians
       b. *the politicians laugh at [e] easily

(20)   a. they broke the radio
       b. the broken radio

(21)   a. they sat on the chair
       b. *the sat-on chair

Carrier & Randall claim that the postverbal nominals of the intransitive resultatives are syntactically sisters of the selecting verbs but they are not their direct arguments, so that applications of middle/adjectival passive formation are illicit.

Introduction of this kind of dissociation between syntax and semantics is unnecessary in the SC approach to intransitive resultatives, on the other hand, because here the postverbal nominals are not the arguments of the matrix verbs. In this approach, thus, (17) suffices to exclude (19b) and (21b).

To summarize the discussion so far, semantic selection and lexical/morphological processes do not give particular advantage to the Ternary analysis and the latter processes actually favor the SC-approach over the Ternary alternative in the analysis of intransitive resultatives in that it can dispense with the (not well established) dissociation of syntax and semantics that the Ternary analysis has to have resort to.

Let us now turn to a third argument for the Ternary analysis that Carrier & Randall have made : syntactic properties of the resultative constructions. The relevant syntactic

processes are (i) verbal passivization, (ii) long distance extraction of result predicates, and (iii) *wh*-extraction out of the (logical) subject DPs of the result phrases.

Verbal passivization is applicable to the postverbal DPs of both intransitive and transitive resultatives as in (22) and (23).

(22) a. the baby was ticked [e] awake by the loud clock
      b. her sneakers were run [e] threadbare
      c. the pavement was run [e] thin
      d. her handkerchief was swept [e] soggy
      e. the teapot was drunk [e] dry by the thirsty workers

(23) a. the barns are painted [e] red
      b. the tables are wiped [e] clean
      c. John was booed [e] off the stage at the ceremony

The acceptability of the verbal passivization of intransitive resultatives is not surprising at all in the Ternary analysis, because the postverbal nominals are arguments of the matrix verbs. How, then, is this fact accounted for by the SC-approach to the intransitive resultatives, where the postverbal DPs are, by definition, not the arguments of the verbs? There are cases where passivized DPs are not arguments of the relevant verbs as in (24a, b), but passivization of an element within an adjunct is totally unacceptable as in (25).

(24) a. the politician was laughed [PP at [e]]
      b. John was considered [IP [e] to be honest]

(25) *the politics class was slept during [e] (by John)

The contrast between (25), on the one hand, and (24a,b) and (22a-e), on the other, suggests that the SC postulated by the SC-approach for the intransitive resultatives is, in fact, semantically related to the matrix verb, just as PP and IP in (24a) and (24b), respectively, are to *laugh* and *consider*. This is consistent with the observation made with respect to the discussion of semantic selection above, where we have reached the conclusion that the stative aspect of the SC in intransitive resultatives is imposed by the matrix intransitive verbs. Unlike the SC complements of *consider*, *believe*, and so on, though, the SC of the intransitive resultatives apparently does not have a full-fledged status of complement,

which is presumably because it is in the course of dynamic transition from an adjunct to an argument.

A second syntactic argument for the Ternary analysis comes from extractability of resultative predicate phrases out of *wh*-islands. Interestingly, their extraction does not give rise to a strong violation. Look at (26).

(26) a. ?how threadbare do yo wonder whether they should run their sneakers [e]
b. ?how hoarse do you wonder whether they sang themselves [e]
c. ?how bald do you wonder which tires to drive [e] [e]
d. ?how dry do you wonder whether the sun baked the field [e]

(27) a. ?how flat do you wonder whether they hammered the metal [e]
b. ?how shiny do you wonder which gems to polish [e] [e]
c. ?which colors do you wonder which shirts to dye [e] [e]
d. ?which sized do you wonder which logs to cut [e] [e]

Carrier & Randall claim that this weak violation is a reflex of the argument status of the extracted resultative predicate phrases. It is then predicted that extraction of the predicates of "full-fledged"SCs gives rise to a strong violation, just as that of nonarguments. This predication is borne out. Rizzi (1990:130) independently observes that sentences in (28 a,b) are totally ungrammatical.

(28) a. *how stupid do you wonder whether Bill considers [$_{SC}$ Pete [e]]
b. *how angry do you wonder whether he became [$_{SC}$ [e] [e]]

It could therefore be concluded that this extractability fact constitutes a strong argument for the argumenthood of the resultative predicate phrases and, hence, the Ternary analysis, where such argumenthood is obtained.

This conclusion, however, is only plausible within the traditional framework of the ECP-based account of the argument/nonargument asymmetry. Within the minimalist program initiated by Chomsky (1993), where the device of the ECP is eliminated from the computational system, the traditional ECP effects are expected to follow from the interaction of primitive properties of language. One plausible candidate worth pursuing is an extension of Rizzi's (1990) referentiality. He proposes that only referential elements

are extractable out of *wh*-islands.

Notice here that referentiality plays an important role in another component of grammar : ϕ-feature agreement. Spec-head agreement in the domain of TP is a typical instantiation of ϕ-feature agreement. Let us hypothesize that ϕ-feature agreement requires referentiality. This hypothesis provides a neat explanation of the ill-formedness of the following sentences.

(29) a. *50 pounds will be weighed [e] by Mary

　　　b. ?*I regret that for us to smoke bothers her so much (Alrenga (2005))

50 pounds in (29a) and the sentential subject *for us to smoke* in (29b) are both nonreferential, so that they fail to value the ϕ-feature of the relevant T head. That the sentential subject does not reside in Spec-TP is originally argued for by Koster (1978) and recently defended by Alrenga (2005). Thus, (30a) has the structure in (30b), where Spec-TP is occupied by an empty category.

(30) a. that the moon is made of cheese was even contemplated by Aristotle

　　　b. [that the moon is made of cheese] [$_{TP}$ [e]$_i$ was even contemplated [e]$_i$ by Aristotle]

Within our present framework, this empty element is referential, so that it must be a DP. Thus, the contrast in grammaticality among (31a-c) follows.

(31) a. most fans hoped [that the Giants would win the World Series]

　　　b. it was hoped (by most fans) [that the Giants would win the World Series]

　　　c. *[that the Giants would win the World Series] [$_{TP}$ [e]$_i$ was hoped [e]$_i$ by most fans]

The ungrammaticality of (31b) is due to the fact that *hope* cannot take DP as its complement, just as Alrenga argues for.

ϕ-feature agreement has interesting consequences for the elements in the relevant syntactic domain. Consider the following structure.

(32)

FP
XP   F'
      F$_{[\phi]}$ YP
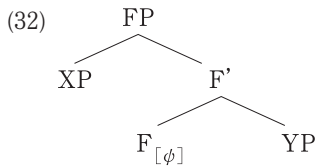
In this configuration, when XP values the ϕ-feature of F, XP becomes frozen in the sense that its internal element becomes unextractable.[5]   This has been traditionally referred to as the Subject Condition in the literature. More interestingly, the configuration makes YP easy to extract. Thus, vP-extraction out of a *wh*-island in (33) only gives rise to a mild violation.

(33)   ? …   and [win the race] I wonder whether he did [e] (Rizzi (1990:31))

Let us suppose that a predicate YP becomes referential when F$_{[\phi]}$ has its ϕ-feature valued. This account for the extractability of the verbal element out of a *wh*-island in (33).

Bearing these in mind, let us return to the contrast between (26a-d) and (28a,b). The weak violation of the extraction of resultative predicates in (26a-d) is presumably due to their referential status. This means that the resultative SCs involve ϕ-feature agreement between the subjects and the SC-head (Asp), which renders the complement resultative predicates referential. The "full-fledged"SCs in (28a,b), on the other hand, do not involve similar ϕ-feature agreement,[6] so that the predicates in the SCs remain nonreferential.[7]

In sum, extractability of resultative predicates out of *wh*-islands apparently favors the Ternary analysis over the SC-approach, but considerations of the nature of extractablity within the minimalist framework provide us an account that is compatible with the SC-approach.

Let us now turn our attention to a third syntactic argument for the Ternary analysis : *wh*-extraction out of the (logical) subject DP of the resultative predicates. Carrier & Randall observe that elements can be extracted out of the DPs that resultative phrases are predicated of :

(34)   a. the Nikes (that) I ran [$_{DP}$ the soles of [e]] threadbare/ragged

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[5]See Tomizawa (2003) for the implementation of this idea. We will return to this feature shortly.
[6]This predicts that SC subject may be a clause. This prediction seems to be borne out:
   (i)   he made [$_{SC}$ clear [that there is one chance to avoid military action]]
[7]Further consequences of this approach are examined in Tomizawa (in preparation).

b. the shoes (that) I walked [$_{DP}$ the heels of [e]] to tatters/paper-thin

c. the gang (that) I drank [$_{DP}$ the leaders of [e]] under the table

d. the film (that) the producer talked [$_{DP}$ the cast of [e]] to death

(35)　a. the door (that) I painted [$_{DP}$ the back of [e]] red

b. the gang (that) I shot [$_{DP}$ the leaders of [e]] dead

c. the trees (that) the wind blew [$_{DP}$ the tops of [e]] bare

In this light, these DPs contrast sharply with the DP-subjects of "full-fledged"SCs : extraction out of the latter DPs gives rise to a violation of the Subject Condition, as shown in (36) below. The same holds of the ECM subjects as well, as in (37).

(36)　a. ??which subject do you consider [$_{SC}$ [$_{DP}$ a book about [e]] too boring for your class]

b. ??who did you find [$_{SC}$ [$_{DP}$ a photograph of [e]] rather unattractive]

c. ??who did you judge [$_{SC}$ [$_{DP}$ a rumor about [e]] false]

d. *the man that I consider [$_{SC}$ [$_{DP}$ the brother of [e]] honest]

(37)　??who did you believe [$_{IP}$ [$_{DP}$ a picture of [e]] to have been selected] (Lasnik (1995))

Given the fact that extraction is generally possible out of the object DPs but not out of the subjects, as in (38a,b), the grammaticality of (34) and (35) constitutes good ground for Carrier & Randall to suppose that the postverbal DPs in resultative constructions have assumed the status of objects, not that of the subjects of SCs.

(38)　a. who did you select [$_{DP}$ a picture of [e]]

b. ?*who was [$_{TP}$ [$_{DP}$ a picture of [e]] selected]

Just like the argument from the long distance extractability of resultative predicates we discussed above, this argument hinges on the particular framework one adopts, more specifically, on the components of the grammar that derive the subject/object asymmetry. Thus, Tomizawa (2003) argues that extraction is prohibited when the element out of which extraction is to take place has established a Spec-head agreement relation with the relevant head. Partial structures for the ill-formed sentences in (38b) and (37) are given in (39a,b), respectively.

(39) a. ?* [$_{TP}$ [$_{DP}$ a picture of [e]] [$_{T'}$ T$_{[EPP,\phi]}$ vP]]

   b. ?? [$_{IP}$ [$_{DP}$ a picture of [e]] [$_{I'}$ [$_{I}$ to$_{[EPP,\phi]}$ vP]]

Here, DPs in Spec-TP/IP value the ϕ-features of T/I via Spec-head agreement. In this configuration, extraction is impossible out of these DPs. Now turn to SCs. Given that the resultatives involve SC structures, as we pursue in this paper, the relevant structures for the "full-fledged" SCs in (36) and those for the resultative SCs in intransitive resultatives in (34) will be the ones in (40a,b), respectively.

(40) a. "full-fledged" SCs

   ?? [$_{FP}$ [$_{DP}$ a book about [e]] [$_{F'}$ F$_{[EPP]}$ AP]] [8]

   b. SCs in intransitive resultatives

   [$_{FP}$ [$_{DP}$ a book about [e]] [$_{F'}$ F$_{[EPP,\phi]}$ AP]]

What distinguishes (40b) from (40a) (and (39a,b), for that matter)? I would like to suggest that the head of resultative SCs has incomplete ϕ-features, which render extraction out of its subject DP relatively free.

In sum, extractability argument on the basis of the subject/object asymmetry apparently gives a strong support to the Ternary analysis, but it actually depends on the nature of the Subject Condition. Our explanation of the Subject Condition in terms of feature valuation gives an account of the different behavior of SCs without recourse to the subjecthood/objecthood of the extraction sites.

We have seen in this section that the three kinds of arguments for the Ternary analysis that Carrier & Randall made with respect to the internal structure of the resultative constructions can be refuted in favor of the traditional SC approach to intransitive resultatives in (2b)/(4b), repeated here as (41).

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[8] Note here that in the preceding discussion we assumed that the head (Asp) of the "full-fledged" SCs lack ϕ-features; otherwise, extraction of SC predicates out of *wh*-islands would give rise to a mild (not strong) violation of the Subjacency Condition, contrary to fact.

(41)   intransitive resultatives
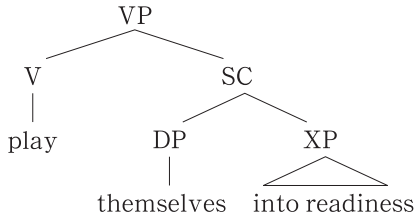
3. Binding and pseudogapping in the resultative constructions

The following facts show that the postverbal QPs in the resultative constructions can bind pronouns within adjuncts modifying the matrix verb phrases.

(42)   a. the loud clock ticked [$_{SC}$ [every baby]$_i$ awake] [at his$_i$/her$_i$/its$_i$ afternoon nap]

b. they laughed [$_{SC}$ [every applicant]$_i$ out of the room] [at his$_i$/her$_i$ job interview]

(43)   I painted [every door]$_i$ white [without masking its$_i$ knob]

At first glance, this seems mysterious, because the QPs in the SC-subject positions in (42 a,b) do not c-command into the adjuncts located outside of the SCs. One might, then, argue, on the basis of these facts, that the postverbal DPs in intransitive resultatives are in fact direct objects of the matrix, intransitive verbs. This section considers how these facts go along with the SC-approach.

That clause-internal subjects can c-command into elements that reside in the domain outside of the clauses is observed in the ECM constructions as well. Lasnik & Saito (1991) point out the following facts.

(44)   a. ?The DA proved [$_{IP}$ [$_{DP}$ the defendants]$_i$ to be guilty] [during [each other's]$_i$ trials]

b. *The DA proved [$_{CP}$ that [$_{DP}$ the defendants]$_i$ were guilty] [during [each other's]$_i$ trials]

c. ?The DA accused [$_{DP}$ the defendants]$_i$ [during [each other's]$_i$ trials]

(45)   a. ?The DA proved [$_{IP}$ [$_{DP}$ none of the defendants] to be guilty] [during [any of the trials]]

b. *The DA proved [$_{CP}$ that [$_{DP}$ none of the defendants] were guilty] [during [any of the trials]]

c. The DA accused [$_{DP}$ none of the defendants] [during [any of the trials]

In the ECM construction in (44a), *each other* can take *the defendants* as its antecedent, whereas such referential dependency is unavailable in the corresponding finite clause in (44b). In (45a), the negative polarity *any* in the adjunct phrase modifying the matrix event, is shown to be licensed by the negative element in the subject position of the ECM construction. This, again, contrasts with the finite version as in (45b).

   Let us adopt Lasnik and Saito's analysis, according to which the SC-subject overtly raises to Spec-AgrOP (hereafter, Spec-vP, following the spirit of Chomsky (1995)), from which it c-commands the anaphor in (44a) and the negative polarity item in (45a). This analysis can be carried over to the account of the binding facts in intransitive resultatives in (42a,b) above. These sentences roughly have the following structures, where the SC-subjects have overtly raised to Spec-vP, from which they can c-command the pronouns. [9]

(46)   a. the loud clock [$_{vP}$ [every baby]$_i$ v [$_{VP}$ ticked [$_{SC}$ ~~every baby~~$_i$ awake]] [at his$_i$/her$_i$/its$_i$ afternoon nap]

       b. they [$_{vP}$ [every applicant]$_i$ v [$_{VP}$ laughed [$_{SC}$ ~~every applicant~~$_i$ out of the room]] [at his$_i$/her$_i$ job interview]

According to this analysis, the binding facts in (46a,b) do not reflect the base-generated objecthood of the postverbal nominals of the intransitive resultatives; rather, they reflect the derived objecthood.

   Lasnik (1995; 1999) goes on to argue that their raising analysis of ECM-subjects receives support from the behavior of pseudogapping. Extending Jayaseelan's (1990) analysis, he proposes that peudogapping is generated by raising of a postverbal element (typically DP) to Spec-vP, followed by VP-deletion. [10]   Thus, the second clause in (47a) has the structure in (47b).

(47)   a. ?John gave Mary a lot of money, and Mary will Susan

       b. Mary will [$_{vP}$ Susan v [$_{VP}$ ~~give Susan a lot of money~~]]

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[9]Here I will leave open the question of word order of the raised SC-subjects and the matrix verbs.
[10]I have changed the label from Spec-AgrOP to Spec-vP for the reason mentioned above.

Lasnik (1995) observes that peudogapping is available in a "full-fledged"SC construction as in (48). The same is true of the ECM construction as well, as in (49).

(48) a. the DA proved [$_{SC}$ Jones guilty], and the Assistant DA will Smith

b. the Assistant DA will [$_{vP}$ Smith v [$_{VP}$ ~~prove~~ [$_{SC}$ ~~Smith guilty~~]]]

(49) a. the DA proved [IP Jones to be guilty], and the Assistant DA will Smith

b. the Assistant DA will [$_{vP}$ Smith v [$_{VP}$ ~~prove~~ [$_{IP}$ ~~Smith to be guilty~~]]]

Both the binding phenomena and peudogapping share the same process : overt raising to the Spec-vP. It is thus expected that peudogapping is available in the resultative constructions. This prediction is borne out. The following examples are all judged to be grammatical.

(50) a. John ran his Nikes threadbare, and Mary did her Reebocks

b. the loud clock ticked the babies awake, and it didn't their mother

(51) a. John wiped the desks clean, and Mary did the blackboards

b. French fans booed Materazzi out of the pitch, and Italian fans did Zidane

Let us summarize the discussion so far. The binding facts, coupled with the peudogapping facts, show the derived objecthood of the SC-subjects.

We will now turn to the reason why raising takes place in the binding and peudogapping configurations. In this light, Miyagawa (2001) has made an interesting observation. In (52), *not* can have wide scope over *everyone*. Thus, the sentence can express my belief that not everyone arrived.

(52) I believe [$_{IP}$ everyone not to have arrived yet]   not $\rangle$ every : OK

This type of interpretation is not available in (53) below, however.

(53) I believe [every defendant]$_i$ not to be guilty [during his$_i$ trial]   not $\rangle$ every : *

The only interpretation available for this sentence is that I believe that every defendant is innocent. The fact that *every defendant* has wide scope over *not* in (53) makes sense in

our discussion so far, because the QP has raised to Spec-vP, from which it asymmetrically c-commands *not*. The question, then, is why a similar raising process does not take place in (52). A plausible approach is that raising is carried out only when motivated by some external element. Binding requirement on the bound pronoun in (53) is one instantiation of such motivation. However, EPP-feature on v does not serve as such motivation; otherwise, *everyone* in (52) would raise to yield its wide scope reading. This is summarized in (54).

(54)　Raising to Spec-vP takes place only when externally motivated.

In the case of pseudogapping as well, raising of a postverbal element is forced by an external element. To illustrate, consider (55).

(55)　John will select me, and Bill will [$_{\text{VP}[\delta]}$ select you]

Let us suppose that the VP to be elided is specified as δ and that an element with δ must undergo deletion during the course of the derivation under identity (actually, nondistinctness) with its antecedent. In (55), [$_{\text{VP}}$ select you] is distinct from its antecedent, so that *you* is forced to extract out of this VP just to make the complement of *select* a variable. The VP so generated, namely, [$_{\text{VP}}$ select *vbl*], meets the nondistinctness requirement, and is therefore deleted.

This analysis differs from Lasnik's in that when there is a postverbal DP, raising of the DP to Spec-vP takes place every time in the latter, but only when externally forced in the former. The difference can be sharpened in the treatment of extraction from within a simple object like *who did you select a picture of*. In Lasnik's analysis, [$_{\text{DP}}$ a picture of [e]] occupies Spec-vP (or, originally, Spec-AgrOP). This is why the analysis needs some proviso to ensure that extraction out of this DP does not result in an effect similar to that of the Subject Condition. In our analysis, on the other hand, such a proviso is unnecessary.

4. Interim summary : On the subjects of small clauses

The considerations in sections 2 and 3 can be summarized as in (56), where (a-d) list the

types of the postverbal DPs. "Lexical processes"include process *-ing* nominalization, middle formation, and adjectival passive formation. "Predicate extraction"refers to long distance extraction of SC-predicates out of *wh*-islands. "Binding"covers anaphor binding, bound pronoun interpretation, and licensing of negative polarity items.

(56)	lexical processes	predicate extraction	extraction out of DP	binding & pseudogapping
a. simple objects	OK	- -	OK	OK
b. subj of intransitive SCs	*	?	OK/?	OK
c. subj of transitive SCS	OK	OK	OK	OK
d. subj of full-fledged SCs	*	*	??/*	OK

I have argued that the fact that every type of postverbal DPs behaves similarly with respect to binding and peudogapping directly reflects their derived objecthood, whereas the underlying property of these DPs are shown by lexical processes, according to which the postverbal DPs of both the intransitive resultatives and "full-fledged"SC constructions have the nonobjecthood (i.e., subjecthood). Apparent difference between the intransitive resultative SC-subjects and "full-fledged"SC-subjects is argued not to show the underlying objecthood of the former; rather, it only shows the syntactic feature-valuation involved. The same is true of the fact relating to extraction out of DPs. Here again, the subjects of the intransitive resultative SCs behave differently from those of the "full-fledged"SCs. These two phenomena seem to be corelated. I have hypothesized that specification of ϕ-features of SC-heads is different between the intransitive resultative SCs and "full-fledged"SCs. The former involve meager ϕ-features whereas the latter have no ϕ-features. In general, Spec-head agreement for valuation of ϕ-features renders (i) the Spec domain opaque when the relevant ϕ-features are complete and (ii) the complement domain referential. Thus, the paradigm in (56) follows.

5. Perception constructions

We have so far discussed SCs whose predicates are typically APs. Let us consider SCs with VP predicates, namely, perception constructions. This construction essentially behaves like intransitive resultatives in that (i) it allows extraction out of the postverbal

DPs, (ii) the postverbal DPs c-command elements within the adjuncts modifying the matrix verbal phrase, and (iii) pseudogapping is applicable to the postverbal DPs. These are illustrated in (57), (58), (59), respectively.

(57) a. which planet did you see [[$_{DP}$ a picture of [e]] appear on your computer screen]
      b. which president did you watch [[$_{DP}$ a picture of [e]] burn in the wastebasket]
                                                                          (Basilico (2003))
(58) I watched [[$_{DP}$ every student]$_i$ climb up the hill] [through his$_i$/her$_i$ binoculars]
(59) The DA watched [Jones humiliate Mary], and the Assistant DA did Smith

The acceptability of (57a,b) shows, in our analysis, that [$_{DP}$ a picture of [e]] is involved in valuation of meager ϕ-features, because only this configuration permits extraction from within subject positions. This is in line with Hornstein, Martins, & Nunes (2006) analysis of the perception construction. The availability of bound pronoun interpretation and peudogapping in (58) and (59), respectively, indicate that postverbal DPs raise to Spec-vP when forced, just as the postverbal subjects of the intransitive resultatives.

One remaining problem is the well-known lack of passivization in the case of perception construction, [11] which contrasts with intransitive resultatives. I will leave the issue open here.

6. Conclusion

In this paper I have attempted to defend the conventional SC-approach to intransitive resultatives.

Two of the interesting properties of the syntax of intransitive resultatives are that they allow extraction of SC-subject-internal elements relatively freely and extraction of SC-predicates out of *wh*-islands gives rise to only a mild violation reminiscent of the Subjacency Condition violation. These properties contrast with those exhibited by "full-fledged"SCs taken by *consider*, *believe* and so on, where extraction of SC-subject-internal elements exhibits Subject Condition effects and SC-predicate extraction out of *wh*-island results in a strong violation reminiscent of the ECP violation. We have proposed that Spec-head agreement in the intransitive resultative SCs involves incom-

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[11]See Declerck (1983), Felser (1998), Basilico (2003), Hornstein, Martins, & Nunes (2006), among others.

plete φ-features and claimed that such incomplete feature-valuation allows extraction out of the element in the Spec position. We also proposed that Spec-head agreement of φ-features involve referentiality, which in turn makes the complement of the head referential. This process has been argued to be responsible for the extractability of SC-predicates out of *wh*-islands. In "full-fledged"SCs, we have proposed that no φ-feature valuation is involved. It has been shown that from this property follow the inextractability of elements within SC-subjects and the impossibility of the extraction of SC-predicates out of *wh*-islands. Unavailability of lexical or morphological processes such as process *-ing* nominalization, middle formation, adjectival passive formation, favors the conventional SC-approach to the intransitive resultatives in that they cannot apply to nonarguments. As for semantic selection, I have suggested that selectional properties are due to the intermediate nature of the intransitive resultative SCs : they are in the course of dynamic transition from an adjunct to an argument. Binding phenomena and availability of pseudogapping have been argued to reflect the derived objecthood of the SC-subjects.

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結果構文の統語構造の再考

富　澤　直　人

Carrier & Randall（1992）は英語の結果構文の内部構造に対して小節を必要としない構造を提案した。この分析は，主に二つの統語現象，すなわち，（1）*wh* 島内からの結果句の摘出の容易性と（2）結果句の（意味上の）主語内部からの摘出の容易性という現象に基盤を置く。本稿では，これらの統語特性が，結果句の小節内で成立する ϕ 素性照合に由来する現象であると論じ，（1）結果句が主動詞の項として機能しているわけではないこと，また，（2）結果句の主語が主動詞の目的語として機能しているわけではないことを示し，小節に基づく伝統的な結果句構造を擁護する。さらに，Carrier & Randall が提示したその他の文法現象および本構文で観察される束縛現象等について考察を加え，これらの現象が，結果句およびその主語の基底構造における項性（目的語性）を示すものではないことを論じ，小節分析の妥当性を主張する。