

# On Verb Semantics and the Syntactic Structure of Resultative Constructions

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## 1. Introduction

The English resultative construction has been a hottest topic of research on the syntax-semantics interface. Among a number of empirical problems surrounding this construction, one problem which attracts many researchers' attention is that it can take an *unselected* direct object, like *the pavement* in (1a), licensed only under this construction:

- (1) a. The joggers ran *the pavement* thin.  
b. \*The joggers ran *the pavement*.

[Kaga (2007a: 79) italics are mine]

Interestingly, such unselected objects are not cross-linguistically acceptable. Compare English resultative sentence (2a) and its Japanese counterpart (2b):

- (2) a. He walked *his legs* off.  
b. ??Kare-ga *asi-o* boo-ni arui-ta.  
he-Nom leg-Acc stiff walk-Past

[Kaga (2007a: 78) italics are mine]

This paper attempts to account for the following questions: (a) *How is an unselected object introduced into resultative constructions in English?* and (b) *How can such a contrastive behavior of resultatives across languages be explained?* We show that it is necessary to look into lexical properties of the predicate verbs, as well as the syntactic structure that underlies this construction.

This paper is organized as follows: in section 2, we will review how

English resultative constructions (especially ones with an unselected object) has been treated in previous studies, by critically analyzing Rappaport Hovav and Levin's (2001) "event structural" approach and Goldberg and Jackendoff's (2004) "constructional" approach. Here we will point out some problematic examples which cannot be easily accounted for by their theories. Section 3 is devoted to answering the above question (a). Here we will provide a more sophisticated account for introduction of unselected objects, based on Kaga's (1999, 2007a, b) analysis of argument linking, and on the notion of "conflation/incorporation" (Hale and Keyser (2002)). Section 4 looks at cross-linguistic variations in resultative constructions, in order to answer the question (b). On the basis of Talmy's (2000) typology, it will be argued that unselected arguments are applicable to satellite-framed languages, but not to verb-framed languages, which supports Kaga's (2007b) proposal. Finally, section 5 gives a summary of this paper.

## **2. Previous Studies**

This section briefly reviews two major semantic approaches to English resultative constructions that explore various types of examples: Rappaport Hovav and Levin (2001) develop principles governing event structure-syntax mapping and suggest that resultatives with unselected DPs are based on complex event structure. Goldberg and Jackendoff (2004), on the other hand, claim that resultatives are not a unified phenomenon but are composed of some "subconstructions," which share important properties, while preserving certain specifics. In their approach, unselected objects are thought to be licensed by the construction itself. The following subsections look closely at their accounts in turn, pointing out some problematic issues of their theories.

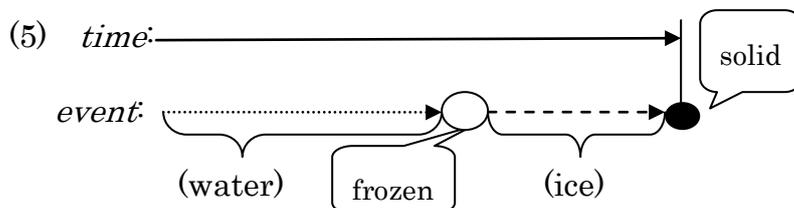
2.1 Rappaport Hovav and Levin [RH&L] (2001)

RH&L (2001) are particularly concerned with a distinction between resultatives with a simple event structure and ones with a complex event structure. Following their arguments, unselected DP resultatives and reflexive resultatives are classified as having complex event structure, which is defined as the event described by the verb and the one determined by the whole construction need not unfold at the same time. To see their point in more concrete terms, let us compare (3) and (4):

- (3) a. The pond froze solid.  
 b. Robin danced out of the room.
- (4) a. The joggers ran the pavement thin.  
 b. We yelled ourselves hoarse.  
 c. They drank the pub dry.  
 d. The cows ate themselves sick.

[RH&L (2001: 793-794, Appendix B)]

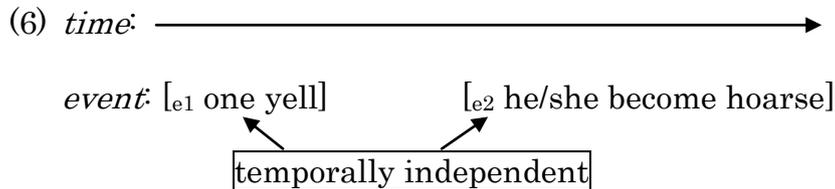
RH&L (2001) claim that the examples in (3), “bare XP resultatives” in their term, have a simple event structure. For instance, (3a)(3) is composed of only one event: the water in the pond gradually changes into a frozen state; resultative state *solid* functions just as a further specification of this state. See (5) for an illustration:



A similar analysis also applies to (3b), where the verb *dance* lexically entails the

agent's bodily movement.<sup>1</sup>

In contrast, the events described in (4) are composed of two subevents: “verbal subevent” and “constructional subevent.” They do not necessarily unfold coterminally: for example, one can yell enthusiastically at one time and later find him/herself hoarse. (6) illustrates this eventuality:



They suggest that the same temporal relation holds for other examples in (4)(4).

However, RH&L's (2001) account on simple/complex event structure cannot always adequately capture the temporal (in)dependence of subevents described by resultative constructions. Compare (7a, b):

- (7) a. He is starving himself to death.  
b. He is starving to death.

[Nakau and Nishimura (1998: 183)]

According to RH&L's (2001) view, (7a, b) are to be distinguished as having different event structures: a reflexive resultative (7a) has a complex event structure, in which his starving event and his dying event need not be temporally dependent.<sup>2</sup> A bare XP resultative (7b), on the other hand, has a simple event structure, where the verb *is starving* lexically indicates a change of state, and the RP *to death* further specifies this state. This seems not to be the case. Nakau and Nishimura (1998) argue that the subject *he* in (7a) intentionally keeps himself from eating, in order to, for example, lose weight, and it results in his state of starvation. In contrast, (7b) describes an event in which the subject cannot help starving under some unavoidable situation. Thus, RH&L's (2001)

account needs to be modified to capture such a contrast.

Also, examples like (8) pose a question on their event structural account:

- (8) [...] the East Wind blowing through the naked branches of the cherry-trees in the Lane. The trees themselves, turning and bending in the half light, looked as though they had gone mad and *were dancing their roots out of the ground.*

[P. L. Travers, *Mary Poppins*, italics are mine]

(8) illustrates a scene where the trees are moving to and fro in the strong East Wind. Here, the resultative sentence has a metaphorical meaning: the swaying trees bare a close similarity to dancing people—their branches look like arms, and their roots resemble legs. In actuality, (8) need not imply that the wind causes the roots of the trees to come out of the ground. Similarly, RH&L's examples (4a) and (4c) have a potential ambiguity. In (4a), it is possible to assume the pavement becomes thin because of many joggers' running on it, but this inference is not obligatory. (4c) allows both literal and emphatic reading: the drinkers may drink all the bottles in the pub, but we can say (4c) to indicate that they are drinking too much, with the stock of the pub irrelevant. Thus, RH&L's (2001) generalization about reflexive/unselected DP resultatives at most holds for the cases like (4b)/(6), which express the literal change of state of the fake object.<sup>3</sup>

## 2.2 Goldberg and Jackendoff [G&J] (2004)

G&J (2004) analyze resultative constructions as “constructional idioms,” which are composed of a family of subconstructions. On their constructional view, G&J (2004) categorize every example sharing the same surface syntactic structure as the identical subclass of resultatives. For example, (9a-d) share the

same surface syntactic pattern—NP-V-NP-AP—and thereby correspond to the same semantic meaning:

- (9) a. They made him angry. (verbal resultative)  
b. Bill broke the bathtub into pieces. (selected transitive resultative)  
c. They drank the pub dry. (unselected transitive resultative)  
d. We yelled ourselves hoarse. (fake reflexive resultative)

[cf. G&J (2004: 536)]

G&J (2004) argue that the interpretation of the events described in (9a-d) is generalized as in (10).<sup>4</sup>

(10) Causative property resultative:

Syntax: NP<sub>1</sub> V NP<sub>2</sub> AP/PP

Semantics: X<sub>1</sub> CAUSE [Y<sub>2</sub> BECOME Z<sub>3</sub>] [G&J (2004: 538)]

The constructional view, however, abstracts away from syntactic/semantic properties of the predicate verbs and the RPs themselves. Particularly, the adequacy of their “constructional” generalization appears doubtful in that (10) ignores the difference between change of state verbs, transitive verbs that do not imply any change of state, and intransitive verbs. This results in their theory’s inability to capture some contrastive behaviors which are seen within the “same” subconstruction. Kageyama (2007) points out that there is a great deal of disparity in the acceptance of its result phrase’s movement:

- (11) a. It was dark green that they painted their house.  
b. ??It was wide awake that she shook her husband.  
c. \*It was flat that they watered the tulips.

[cf. Kageyama (2007: 55-56)]

All of the underlying resultative sentences of (11) share the same surface syntactic

pattern: NP-V-NP-AP (*They painted their house dark green. / She shook her husband wide awake. / They watered the tulips flat.*), and they match the constructional semantics posited as in (10). Nevertheless, (11) shows that they do not always behave in the same manner. According to Kageyama (2007), RPs can be cleft from inherent resultatives without any problem,<sup>5</sup> while extraction from derived resultatives is impossible. Inherent resultatives contain a change of state verb, and the result of the action is closely related to its lexical property. In (11(11)a), for instance, the predicate verb *paint* is a change of state verb, which implies its direct object's change of the color. The RP *dark green* is thus included in the verb's lexical information (LCS, in Kageyama's (2007) term). The verbs of derived resultatives, on the other hand, do not entail the resultant state that necessarily occurs as a consequence of the action: in (11c), the tulips' becoming flat is the event that *accidentally* happens by watering them. The marginal acceptability of (11b) can be captured by its semi-inherent resultative property: the action of *shaking* does not specify *the* resultant state. Some people may be *awake* by being shaken, but others may not.<sup>6</sup> Constructional approach, not referring to verbal semantics, cannot provide an adequate explanation for gradable acceptability of the cleft sentences in (11).

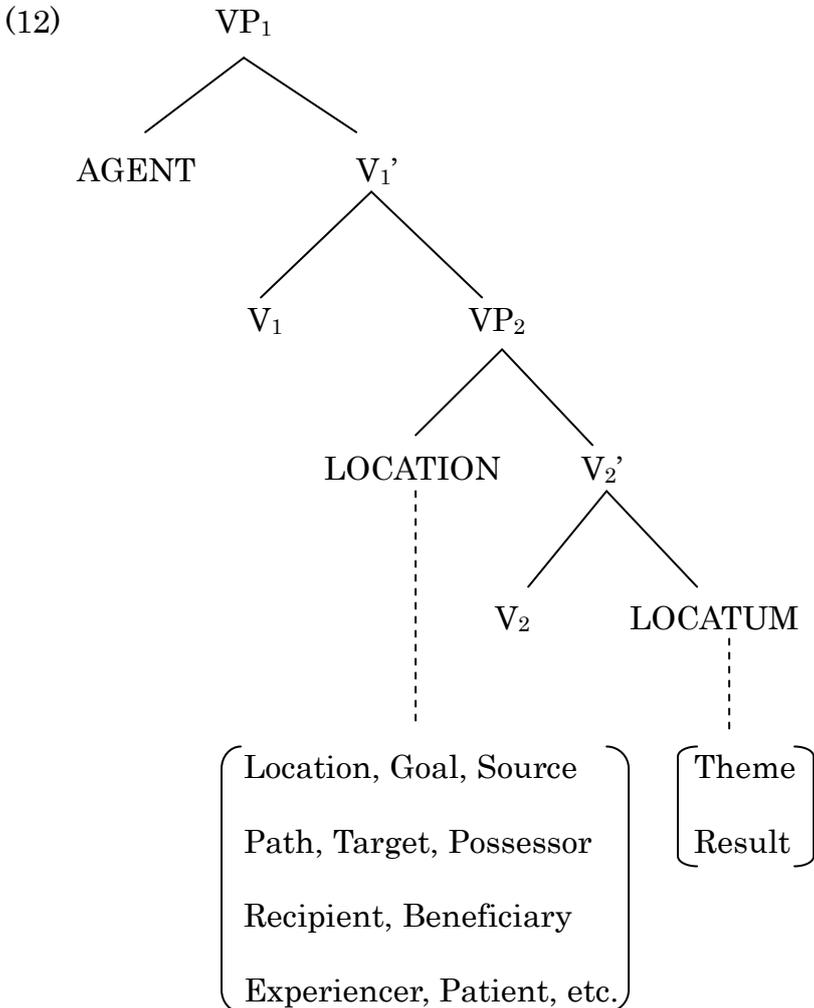
As was pointed out above, the central line of the approaches suggested by RH&L (2001) and G&J (2004) is based only on the surface syntactic structure; but both of them are insufficient to capture the whole picture of resultative constructions. For the purpose of giving a clearer picture of resultatives, it seems therefore necessary to closely look at properties of the predicate verb itself, and to explore the exact syntactic/semantic status of the RPs. In the next section, adopting Kageyama's (2007) classification of inherent/semi-inherent/derived

resultatives and Kaga’s (1999, 2007a, b) structural analysis of macro-roles, we will investigate the interface between verbal semantics and the syntactic structure of resultative constructions.

**3. Thematic Structure and the Semantics of Verbs**

This section carefully investigates the thematic structure of verbs and the subtypes of resultative constructions. On the basis of Kageyma’s (2007) classification, we will explore the syntactic/semantic properties of each subclass of resultatives (inherent, semi-inherent, and derived resultatives) in turn.

Here we adopt the following verb phrase structure proposed by Kaga (1999, 2007a, b):<sup>7</sup>



[Kaga (2007a: 9)]

Based on this thematic structure, we offer the following proposals:

(13) a. Inherent resultatives:

This subclass involves a change of state verb, which lexically licenses a LOCATUM element.

b. Semi-inherent resultatives:

Verbs of this construction lexically subcategorize a LOCATION alone; the addition of an RP is licensed with the aid of an “empty V<sub>2</sub>” that selects the LOCATUM phrase.

c. Derived resultatives:

Verbs appearing in this class lexically select no LOCATUM phrase. Resultatives are constructed via conflation of the verb and an empty V. Here, it may take not only a LOCATUM argument but also a LOCATION argument, when the main verb is unergative.

### 3.1 Inherent Resultatives

As briefly mentioned in section 2.2, inherent resultatives involve a change of state verb. A verb of this type contains in its lexical semantics the notion that can be specified by its RP. Thus in (14), the predicate verb “*paint*” itself contains the notion “color” in its lexical semantics. In (14a), this notion is incarnated in the RP *dark green*, but even when the RP is missing as in (14b), we can imply that the color of the house changes into some color:

(14) a. They painted their house dark green.

b. They painted the house.

In the VP shell structure illustrated in (12), the three arguments in (14a) are associated with the following structure (at some intermediate stage of derivation).

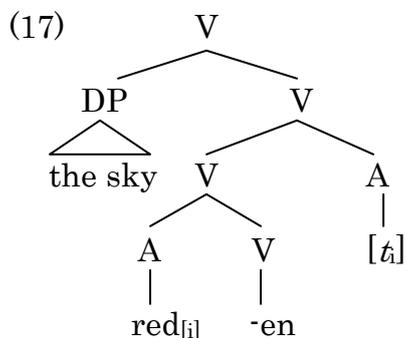
(15) [VP<sub>1</sub> They [V<sub>1</sub> V<sub>1</sub> [VP<sub>2</sub> their house [V<sub>2</sub> paint (V<sub>2</sub>) dark green]

This structure assigns the AGENT role to [DP they], who deliberately participate in the “painting event”; the LOCATION to [DP their house], which is interpreted as the subject of change of state (Patient), and the LOCATUM (Result) role to [AP dark green]. Since a change of state verb lexically selects an RP, (14b) should be analyzed as having the same structure as (16), with its LOCATUM position occupied by a covert element.

(16) [VP<sub>1</sub> They [V<sub>1</sub> V<sub>1</sub> [VP<sub>2</sub> their house [V<sub>2</sub> paint<sub>i</sub> (V<sub>2</sub>) Ø<sub>i</sub>]

In the structure (16), we describe the fact that the verb *paint* lexically involves the notion of “color” by coindexing it with an empty LOCATUM element (Ø).<sup>8</sup>

The correlation between a verb and a LOCATUM argument can also be addressed by a theory of conflation, proposed by Hale and Keyser (2002). Following their assumptions, deadjectival verbs like *clear/redden*, which describe ‘change of state’ and the adjectives denote the (resultant) state, are morphologically made up of composition. The structure for *the sky reddened* (at some intermediate stage of derivation) is depicted as in (17):

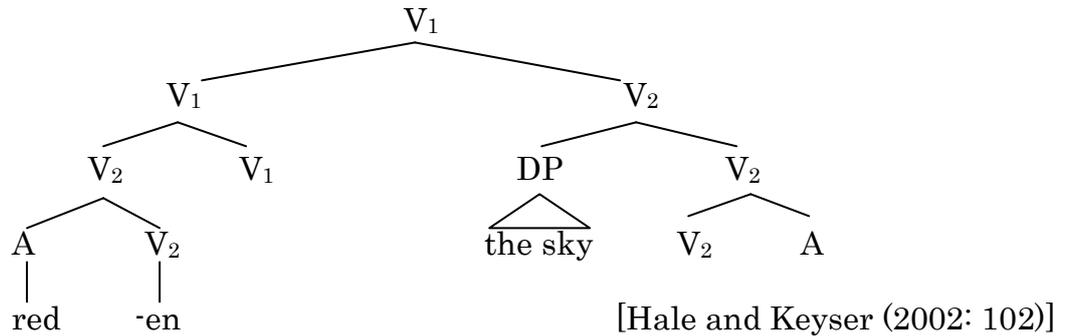


[Hale and Keyser (2002: 101)]

Here, the adjectival complement head-moves to V and makes a composite verb *redden*, leaving a trace at the original position. They suggest that “the zero-derivation cases, like *clear*, *narrow*, and *thin*, differ from the *redden* type only in that the V component is empty” (Hale and Keyser (2002: 101)). The

transitive use of *redden* as in (18) is formed by verb raising:

(18) The setting sun reddened the sky.<sup>9</sup>



The structures (17-18) suggest that Kageyama’s (2007) coindexing notion is supported not only from a semantic but also from a syntactic viewpoint. That is, the semantic affinity between a change of state verb and its RP is captured by an assumption that such verb heads are syntactically (or morphologically) related to the adjectival/prepositional complement in some way or another.<sup>10</sup>

### 3.2 *Semi-inherent Resultatives*

Traditionally, resultatives are classified in a twofold way—inherent (weak) or derived (strong). Semi-inherent resultatives, proposed by Kageyama (2007), behave as a cross between them, and our approach suggests that their syntactic/semantic properties are indeed their neutralization.

According to Kageyama (2007), examples such as (19a-c) are defined as semi-inherent resultatives.

- (19) a. She scrubbed/wiped the floor shiny clean.  
 b. She shook the dirt off her shoes.  
 c. He pulled the drawer open. [Kageyama (2007: 38)]

The typical verbs that appear in this type of resultative are verbs of exerting force. They express an action of the subject’s surface contact with the direct object, and

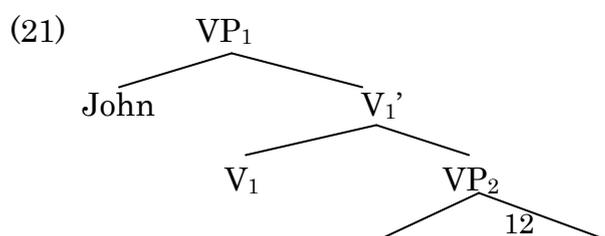
the action is usually interpreted as being conducted with a certain objective. Following Kageyama (2007), it is the verbs' *telic role*: "purpose that an agent has in performing an act" (Pustejovsky (1995: 86)), that guarantees the "(semi-)inherent" resultative property of this subclass. On the other hand, verbs in this class, unlike change of state verbs, do not imply the accomplishment of their telic role. Compare (20a, b):

- (20) a. I hit the window with a hammer. It didn't faze the window, but the hammer shattered.
- b. \*I broke the window with a hammer. It didn't faze the window, but the hammer shattered.

[Kageyama (2001: 200)]

As discussed in 3.1, a change of state verb lexically specifies its Result role, even when it is not overtly expressed. (20b) is out because its second sentence conflicts with the lexical information of *break*. *Hit* in (20a), in contrast, only covers the meaning that the agent exerted his/her force on *the window*. It does not imply how the window changed. In fact, the state of the window need not change at all, as shown in (20a).

On the basis of the discussion above, predicate verbs of semi-inherent resultatives appear to project no LOCATUM role by themselves. We suggest that Kaga's (1999, 2007a, b) syntactic structure associated with these verbs helps us capture their lexical property. For example, a surface-contact verb *hammer* in "*John hammered the metal.*" is assigned the following structure:



the metal            hammered (V<sub>2</sub>)    [cf. Kaga (2007a: 72)]

The structure (21) shows us that verbs of exerting force do not lexically specify the result of the action: there is no place for an RP to be projected. Kaga (2007a) suggests that in order for resultatives with this subclass of verb to be generated, an empty V (e<sub>v</sub>) head should be merged with the verb in a lower V (V<sub>2</sub>) position. In a semi-inherent resultative sentence (22), the e<sub>v</sub> functions as a licencer of the LOCATUM phrase:

(22) a. John hammered the metal flat.

b. [VP<sub>1</sub> John [V<sub>1</sub>' V<sub>1</sub> [VP<sub>2</sub> the metal [V<sub>2</sub>' hammered·e<sub>v</sub> flat]]]]

[Kaga (2007b: 185)]

An “empty” V head is not literally empty, however; although it is *phonologically* empty, there seem to be some unique properties associated to it. We propose that it has its own LCS, depicted as follows:

(23) e<sub>v</sub>: [e<sub>v</sub> Y BECOME STATE]<sup>11</sup>

Verbs of exerting force, whose brief LCS is [X ACT ON Y], are glued to (23). The LCS of the resultant complex verb is illustrated as in (24):

(24) V<sub>2</sub>-e<sub>v</sub>: [V<sub>2</sub> X ACT ON Y [e<sub>v</sub> Y BECOME STATE]]<sup>12</sup>

As is shown in (23), e<sub>v</sub> itself does not specify its resultant state in any concrete way. The RP of complex verb V<sub>2</sub>-e<sub>v</sub> is determined by the telic role of the predicate verb taken into account. The RP *flat* in (22b) is therefore closely related to the aim of *hammering a metal*. Note that the RP is obligatory here, because it does not have a direct relation with *hammer* itself. Without an overt RP, it becomes impossible to infer from the semantics of the main verb the state into which the LOCATION element turned. To summarize, such an RP is introduced by an “empty” verb and semantically related to the predicate verb. The contrast

between inherent and semi-inherent resultatives is thus illustrated.

### 3.3 Derived Resultatives

Kageyama (2007) defines this subclass as ones whose RP is not included in the lexical information of the main verb. For example, (25a-d) are categorized as derived resultatives, because the semantics of each RP is completely independent of lexical information of the verbs:

- (25) a. The dog barked the neighbors awake.  
 b. We yelled ourselves hoarse. [= (4b)/(9d)]  
 c. They drank the pub dry. [= (4c)/(9c)]  
 d. They watered the tulips flat.

[(25a, d) are from Kageyama (2007: 55)]

The predicate verbs of (25a-d) are not change of state verbs, nor are the actions named by the verbs intended to cause the state expressed by the RPs. Notice that the postverbal DPs in (25a-c) are unselected objects, while *tulips* in (25d) is selected by the verb:

- (26) a. \*The dog barked the neighbors.  
 b. \*We yelled ourselves.  
 c. \*They drank the pub.  
 d. They watered the tulips.

(25a, b) are resultatives with unergative intransitives: *bark* and *yell*.

Kaga (2007a) assigns such verbs the single VP<sub>1</sub> structure as in (27):

- (27)
- |         |                 |   |                          |
|---------|-----------------|---|--------------------------|
|         | VP <sub>1</sub> |   |                          |
| The dog | /               | \ |                          |
|         |                 |   | barked (V <sub>1</sub> ) |
| We      |                 |   | yelled (V <sub>1</sub> ) |
- [cf. Kaga (2007a: 62)]

Here again, we assume that an empty  $V_2$  head plays a key role in deriving a resultative construction. Since unergative verbs require only an AGENT argument and its LCS correspond to [x ACT], it is the  $e_v$  ( $V_2$ ) that licenses both a LOCATION and a LOCATUM arguments in this case. As a result, (25a), for example, is analyzed as in (28)—legal in so far as the three macro-role positions are appropriately occupied.<sup>13</sup>

(28) [<sub>VP1</sub> The dog [<sub>V1'</sub> barked [<sub>VP2</sub> the neighbors [<sub>V2'</sub>  $e_v$  ( $V_2$ ) awake]]]]<sup>14</sup>

Resultatives with an unselected object, like (25c), are captured in the same manner. In (25c), we assume that the main verb *drink* is generated in the upper  $V_1$  position, for it is not *the pub* that was drunk, but some unspecified liquors stocked at the pub. In this sense, *drink* in (25c) is interpreted as an unergative verb with an unspecified object. (25c) thus results in the following structure: (see also Kaga (2007a: 88))

(29) [<sub>VP1</sub> They [<sub>V1'</sub> drank [<sub>VP2</sub> the pub [<sub>V2'</sub>  $e_v$  ( $V_2$ ) dry]]]]

Nakau and Nishimura (1998) argue that unergative verbs, whose action is self-sufficient in their canonical use, acquire some extended interpretation under a resultative construction: the action named by the verb is performed in such an extreme way that it functions as a causative factor which influences the fake/reflexive object. Following this line of argument, we propose the ultimate LCS of the complex verb  $V_1$ - $e_v$ , which results from the composition of an unergative  $V_1$  and an empty lower  $V_2$  head as follows:

(30)  $V_1$ - $e_v$ : [<sub>V1</sub> X CAUSE [<sub>V2(ev)</sub> Y BECOME STATE]]<sup>15</sup>

The discussion above helps us capture the difference between (7a) and (7b), repeated below as (31a, b):

(31) a. He is starving himself to death. [= (7a)]

b. He is starving to death. [= (7b)]

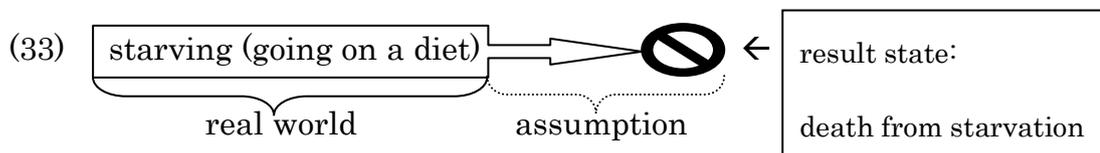
In (31b), *he* is arguably an instance of a macro-role LOCATION, in that it functions as the subject undergoing a change of state event—a process of losing life. In contrast, *he* in (31a) occupies the AGENT position, and *starve* in (31a) is interpreted as an unergative verb. See (32):

(32) a. [VP<sub>1</sub> He [V<sub>1</sub>' is starving (V<sub>1</sub>)-e<sub>vi</sub> [VP<sub>2</sub> himself [V<sub>2</sub>' t<sub>i</sub> to death]]]]

b. starve-e<sub>v</sub>: [*He* CAUSE [himself BECOME to death]]

As discussed in 2.1, (31a) describes a situation under which the subject intentionally avoids eating. This interpretation follows from the thematic role assignment (32a), and the LCS of the predicate (complex) verb (32b). Our framework claims that the contrast between (31a) and (31b) is not caused by the notion of temporal independence, but by the difference in use of the predicate verb and in the thematic role assigned to each argument.

Also, the hypothetical LCS as in (32) helps us capture the tendency that derived resultatives are often used as an exaggeration. As was pointed out by Nakau and Nishimura (1998), actions described by the verbs of resultatives with an unselected object (i.e. V<sub>1</sub>-e<sub>v</sub> in our term) are executed in an extraordinary manner. Given that “change of state” can be regarded as a process directed at a certain result state (see (6) for example), it is reasonable for (derived) resultatives to express some fictional process which their fake objects are assumed to undergo, caused by the action performed in an unusual way. For example, the subject of (31a) is not actually dead; he is on a starving diet, and the speaker assumes that it could result in his death if he carried on. See (33) for an illustration:



(33) shows that the “change of state” is occurring only in the speaker’s hypothetical world. Nevertheless, this schema corresponds to the general “change of state” process, hence the resultatives with emphatic implication share “resultative” properties with prototypical ones.

The last type of derived resultatives is (25d): *They watered the tulips flat*. the predicate verb *water* does subcategorize the object, but this is slightly distinct from semi-inherent resultatives. Here, the resultant state occurs accidentally, and thus the RP is lexically independent of the verb. We propose that this type shares the same properties as semi-inherent resultatives syntactically, but from the semantic viewpoint, this should be regarded as an instance of derived resultatives. Note that even though RPs in derived resultatives are not strictly related to the lexical information of the predicate verbs, this is not to say that they are *completely* independent. Considering the shape of tulips and what is likely to happen when one waters them too much, the resultant state of “tulips’ becoming flat” seems quite reasonable. Likewise, in (25a) for example, it commonly happens that someone wakes up because of a dog’s barking, although the dog itself is not barking with the intention of waking up people.

#### 4. An Account of the Cross-linguistic Variation in Resultative Constructions

As illustrated in (2), repeated here as (34), resultatives show the parametric variation among various languages:

(34) a. English: He walked *his legs* off. [= (2a)]

b. Japanese: <sup>??</sup>Kare-ga *asi-o* boo-ni aruita. [= (2b)]

he-Nom leg-Acc stiff walk-Past

This paper suggests that this difference between the English type and the

Japanese type of resultatives can be associated with more general parametric variations between these languages—conflation diagrams.

Talmy's (2000) investigation of conflation in motion events made a clear distinction between "satellite-framed" and "verb-framed" languages. According to Talmy (2000), Indo-European (except for post-Latin Romance languages) is classified as the former, while Romance and Japanese as the latter. In satellite-framed languages like English, a verb expresses at once both Motion and Co-event (usually either the manner or the cause of the Motion). The predicate verb *kick* in (35) is an instance of such "lexical doublets" (Talmy (2000: 31)):

(35) I *kicked* the ball across the field (with my left foot).

[cf. Talmy (2000: 32)]

In this case, the meaning of the verb *kick* includes the agent's impacting his/her foot into the ball, together with the motion of the ball. Conversely, in verb-framed language, Manner or Cause, if present, is not expressed by the main verb root. See (36), Spanish expression of (agentive) Motion, for example:

(36) Metí el barril a la bodega rodándolo.

I-AMOVED-in the keg to the storeroom rolling-it

"I rolled the keg into the storeroom." [Talmy (2000: 51)]

Note that the verb *kick* does not lexically presuppose the object's moving.

(37) I kicked a big rock, but it wouldn't budge.

We therefore treat this verb as a verb of exerting force, grouping it together with verbs such as *hammer*, *push*, *pull* etc. We analyze, then, that *kick* in (35) is a complex verb: *kick-e<sub>v</sub>* and it is the *e<sub>v</sub>* that undertakes the role to introduce the idea of Motion.<sup>16</sup> What Talmy (2000) calls "verb-framed languages," on the other hand, appears not to allow this kind of conflation. In other words, such

languages do not license an empty verb at the  $V_2$  position. As illustrated in (36), in verb-framed languages, a verb that bears the notion of Motion occupies  $V_2$ , and Manner or Cause of the Motion should be expressed in an independent constituent (in Spanish, by a gerund).

Kaga (2007b) claims that the parametric variation as in (34) can be attributed to the typological characteristics of conflation diagrams. That is, languages which allow Co-event conflation accept semi-inherent and derived resultatives, as well as inherent resultatives, while languages in which Motion event and Co-event are expressed individually only accept inherent resultatives. The comparison between English (satellite-framed) and Japanese (verb-framed) clarifies our point:

- (38) a.  $[VP_1 \text{ Mary } [V_1' [VP_2 \text{ the dress } [V_2' \text{ dyed}_i \text{ pink}_i]]]]$   
 b.  $[VP_1 \text{ John } [V_1' [VP_2 \text{ the metal } [V_2' \text{ hammered-e}_{vi} \text{ flat}_i]]]]$   
 c.  $[VP_1 \text{ They } [V_1' \text{ run-e}_{vi} [VP_2 \text{ their shoes } [V_2' t_i \text{ into pieces}]]]]$

[examples from Kaga (2007b: 177-179)]

- (39) a.  $[VP_1 \text{ Mary-ga } [V_1' [VP_2 \text{ doresu-o } [V_2' \text{ pinku-ni}_i \text{ some-ta}_i]] V_1]]$   
 b.  $??[VP_1 \text{ John-ga } [V_1' [VP_2 \text{ kinzoku-o } [V_2' \text{ petyanko}_i\text{-ni tatai-ta-}\cancel{e}_{vi}]] V_1]]$   
 c.  $*[VP_1 \text{ Karera-ha } [V_1' [VP_2 \text{ kutunosoko-o } [V_2' \text{ boroboro-ni } t_i]] \text{ hasit-ta-}\cancel{e}_{vi}]]$

[cf. Kaga (2007b : 187)]

In Japanese (among other verb-framed languages), inherent resultatives are accepted, since they involve no conflation of an  $e_v$  with the main verb root. Semi-inherent and derived ones, in which the presence of an  $e_v$  is required, are not possible in languages of this type.

Interestingly, the verb *paint* and its Japanese counterpart *nuru* behave in a slightly different way. In Japanese, *nuru* can take either micro-role Theme or

Result, as shown in (40):

- (40) a. Kabe-o siroku nuru.  
wall-Acc white paint  
“(to) paint the wall white”
- b. Kabe-ni penki-o nuru.  
wall-Dat paint-Acc paint  
“(to) put paint on the wall”

Since the English verb *paint* (and French counterpart: *peindre*) derives from the noun *paint/peinture*, they lexically specify the material that is painted: without further specification,<sup>17</sup> these verbs refer to the agent’s application of *paint* on the surface of something. The Japanese verb *nuru*, on the other hand, does not lexically specify the material to be painted. Thus such an expression as (40b) is commonly used. Also, such materials can be involved in a sentence as an Instrument phrase, with the particle “-*de*.”

- (41) penki/enogu/kureyon/-de gayoushi-o kuroku nuru  
paint/pigment/crayon-with drawing paper-Acc black paint  
“(to) paint the drawing paper black with paint/pigment/crayon”

Notice that Theme and Result arguments cannot show up simultaneously, because this results in the doubly-filled LOCATUM position, which is ill-formed:

- (42) a. \*Penki-*o* siroku/kuroku/akaku/aoku/kiroku nuru/nut-ta.<sup>18</sup>  
paint-Acc white / black / red / blue / yellow paint/painted  
“(I) put the paint white/black/red/blue/yellow.”
- b. Penki-*de* siroku/kuroku/akaku/aoku/kiroku nuru/nut-ta.  
paint-with white / black / red / blue / yellow paint/painted  
“(I) painted (something) white/black/red/blue/yellow with paint.”

The examples in (42a) are ruled out because a Theme and a Result occupy the same syntactic position:

(43) \*[VP<sub>2</sub> [LOCATION (kabe-ni) [V<sub>2</sub>' [LOCATUM penki-o, shiroku] nuru/nut-ta]]

The contrasts illustrated above (*paint* vs. *nuru* / *penki-o* vs. *penki-de*) provide further motivation for investigation on resultative constructions focusing upon the correspondence between the syntactic structure proposed by Kaga (1999, 2007a, b) and the lexical semantics of each predicate verb. We expect that this line of analysis enables us to capture various contrastive behaviors observed cross-linguistically, not only in the resultative constructions but also in other constructions.

## 5. Conclusion

This paper has examined resultative constructions, dealing with the parametric variation between English type and French/Japanese type resultatives. Our account is based on the idea that the verb semantics plays the key role to capture the typological universality and idiosyncrasy of each instance of a certain construction. We pointed out that such approaches that abstract away from the properties of a single predicate verb have some certain insufficiency for revealing the whole matter of the resultative constructions. We proposed a way to classify the resultatives into three subtypes, through looking closely at the relationship between the thematic structure of verbs and their arguments. Our conclusion is that English-type languages allow conflation of an empty verb head with a main verb root, while French/Japanese-type languages cannot utilize such an empty verb. The former can therefore generate semi-inherent and derived resultatives through conflation; in the latter, only

inherent resultatives, predicated by a verb that lexically involves a specific resultant state, are acceptable. It seems possible that this line of approach is a ladder that leads to the Minimalist Program's proposal which assumes that "the lexicon provides the optimal coding for 'exceptions'" (Chomsky (1995: 241))—in other words, the significant variation of languages is restricted to morphological properties. A serious investigation into this proposal, however, has to be left to future research.

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#### FOOTNOTES:

<sup>1</sup> Although RH&L (2001) treat (3b) as a kind of "resultative" construction, Kaga (2007b) insists that "resultative constructions" and "motion constructions" (such examples that describe the subject's "change of location" (ex. (3b)) should be distinguished. It remains therefore controversial whether we can regard (3b) and other motion constructions as a kind of resultative construction. To avoid such an unsolved matter, the discussion in this paper focuses mainly on sentences which describe change of state.

<sup>2</sup> RH&L (2001) claim that a complex event structure which reflexive/unselected DP resultatives have *need not* be temporally dependent. It is therefore not surprising that (7a) happen to have an event structure in which two subevents unfold on the same temporal axis. However, the critical difference between (7a, b) is not in the temporal property of their subevents, but in the subject's responsibility for the starving/dying event. It is difficult to capture this kind of contrast by the notion of temporal dependence in RH&L's (2001) sense.

<sup>3</sup> In fact, RH&L's analysis illustrated as in (5) seems to apply only to the discourse like (i):  
(i) Sam sang enthusiastically during the class play. He woke up hoarse the next day and said, 'Well, I guess I've sung myself hoarse.'

[RH&L (2001: 775)]

Their notion of temporal dependence does not clarify why we should treat (4b) as a 'complex event,' even when the subject becomes hoarse as soon as he/she yells.

Moreover, emphatic reading is possible in almost all the cases of a reflexive/unselected DP pattern. We can say that (4b) describes that '*they*' are yelling so enthusiastically that they become hoarse, even before they really hoarsen themselves.

<sup>4</sup> G&J (2004) claim that although their constructional approach provides some generalizations about the resultatives under the same subconstruction, there is also a number

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of idiosyncratic properties involved in each example. For instance, verbal resultatives uniquely allow not only APs but NPs as their resultative phrase:

- (i) They made him president/angry. [G&J (2004: 539)]

Also, verbal resultatives do not accept ‘means’ paraphrase:

- (ii) \*They caused him to become angry by making him.  
(iii) They caused the tulips to become flat by watering them. [ibid]

<sup>5</sup> Needless to say, in order for an RP to be focused as X in ‘it is X that...’ frame, it needs some informational weight. Also, the focused element in a cleft sentence is interpreted as having a unique property. Thus, what we mean by ‘without any problem’ here presupposes the satisfaction of such semantic conditions.

<sup>6</sup> See Kageyama (2007) for more detailed discussion on the relationship between three subgroups of resultatives and the acceptability of movements of their RPs.

<sup>7</sup> Following Kaga (1999, 2007a), we describe the macro-roles with all letters in capitals, while the micro-roles with only the initial letter in capitals.

<sup>8</sup> This notion of coindexing is due to Kageyama (2007). Following his proposal, [AP dark green] in (17) should also be coindexed with the verb. Kageyama (2007) suggests the following syntactic structure on resultatives, which is similar to Kaga’s (1999, 2007a), but different in that he postulates a functional element (V<sub>BECOME</sub>):

- (i) [VP paint<sub>i</sub> [VP [NP the house] [v' V<sub>BECOME</sub> Ø<sub>i</sub> [AP/XP white<sub>i</sub>]]]]

Here, we do not presuppose an empty functional verb (V<sub>BECOME</sub>) at the syntactic level; our approach hypothesizes that the meaning of [(X CAUSE) Y BECOME Z] is stored as *lexical* information of a change of state verb itself, and it is base-generated at the lower-V<sub>2</sub> position. In this way we can distinct inherent resultatives from semi-inherent and derivational ones, in which we do presuppose the existence of an empty V.

<sup>9</sup> *The setting sun* in (18) does not volitionally turn the sky red, and hence it seems unlikely to be an Agent. So we cannot directly trace the structure in (18) to Kaga’s (2007) VP-shell structure, assuming that [the setting sun] corresponds to the AGENT, [the sky] to the LOCATION, and the empty (or the trace of) A to the LOCATUM. Perhaps we can posit a micro-role like ‘Causer’ under the macro-role AGENT, but we leave to future research the discussion on the precise status of this argument.

<sup>10</sup> Hale and Keyser (2002) treat deadjectival verbs and denominal verbs in a slightly different manner, assuming that the latter involves a kind of antecedent binding, through which a denominal verb bears a selectional relation to the nominal object of its complement PP (for more detail, see Hale and Keyser (2002, chapter 3)). This paper does not go deep into this distinction, however; what concerns us here is that their syntactic approach provides some evidence for our assumption that a change of state verb lexically licenses an RP, which may be nonovert.

<sup>11</sup> In this sense, our e<sub>v</sub> is quite similar to what Kageyama (2007) calls V<sub>BECOME</sub> (see also fn.8). The difference lies in that we do not assume such an empty element to occupy a syntactic position (our V<sub>2</sub> position) individually, suggesting instead that it merges with the predicate verb, which originally base-generated at the V<sub>2</sub> position.

<sup>12</sup> At the syntactic level, the argument corresponding to Y is related to a single element which appears in the LOCATION position.

<sup>13</sup> For more detailed derivation process from (27) to (28), see Kaga (2007a: Ch.3)).

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<sup>14</sup> The arrows indicate that the LOCATION/LOCATUM arguments are introduced by the lower empty  $V_2$ , not by the upper  $V_1$ .

<sup>15</sup> RH&L's (2001) event structural account on reflexive/fake object resultatives is attributed to this LCS: this type of resultatives involves an event described by the main verb itself and another which an empty verb head yields. The temporal dependency between them, however, is not clear-cut. It may be true that an event introduced by an  $e_v$  is caused by verbal subevent, there are many cases where these two subevents unfold coextensively, or else the constructional subevent does not become a reality.

<sup>16</sup> In our sense, the LCS of this  $e_v$  is loosely sketched as in (i):

- (i)  $e_v$ : [ $z$  MOVE  $y$ ] ( $y$  = LOCATION /  $z$  = LOCATUM)

A precise examination of the status of empty verbs presented in this paper ( $e_v$ : [ $y$  BECOME STATE] /  $e_v$  [ $z$  MOVE  $y$ ]) is in need, but we leave this issue to future research.

<sup>17</sup> There are cases where *paint* does include information about the material to be painted:

- (i) Paint the shed with water-resistant paint. [OALD<sup>6</sup>]

In (i), *paint* somewhat redundantly selects the Instrument element, in order to specify what kind of paint should be applied.

<sup>18</sup> In fact, a Google search returned the total number of nine hits that match (44a):

- (i) Penki-o shiroku nuru/nut-ta. (4+2 hits)  
(ii) Penki-o kuroku nuru/nut-ta. (1+2 hits)

However, when the particle “-o” (Acc) is replaced to “-de” (with), the number of total search result increased considerably (2,378 total matches to examples in (42b)). We thus regard the nine cases in (i, ii) as a marginal exception and maintain the unacceptability of (42a).

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