

Resultatives and Language Variations: Result Phrases and VV Compounds*

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1. Introduction

In this paper, I will examine the characteristics of the resultative construction and some language variations seen in this construction. Typical examples of resultatives are given in (1), where a result phrase is italicized.

- (1) a. Mary painted the wall (*red*).
- b. Susan pounded the metal (*flat*).
- c. Bill swept the dust **(into the corner)*.
- d. The joggers ran the Nikes **(threadbare)*.

What is interesting in this construction is that with the presence of a result phrase the argument structure of a predicate seems to change and even intransitives can host an object as seen in (1d). (Cf. Jackendoff (1990), Carrier and Randall (1992), Levin

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and Rappaport Hovav (1992), Goldberg (1995) to just mention a few.) Furthermore, as Kageyama (1993, 1996) and Washio (1997) observe, languages differ with respect to what types of predicates allow a result phrase and what construction type a language employs to express resultatives. English makes use of a result phrase such as AP and PP as in (1) and it forms resultatives rather freely irrespective of predicate types. Romance languages, however, neither transitives nor intransitives can involve a result phrase. That is, as shown in (2), French counterparts of (1) are all not allowed. In Japanese, on the other hand, only the counterpart of (1a) can be expressed with a result phrase, as seen in (3a), but the counterparts of the other examples in (1), i.e., (3b-d), are not grammatical. Thus, only inherent accomplishment predicates or change-of-state predicates can make grammatical phrasal resultatives in Japanese. However, Japanese has another construction that expresses resultatives. Namely, V-V serialization, which involves a change-of-state or accomplishment verb for the second verb of a VV compound. This is shown in (4). Ungrammatical (3b) and (3d) become grammatical once the accomplishment verbs, *nobas-u* 'extend' in (4a) and *yose-ru* 'move.to' in (4b), attach to the verbs.

- (2) a. *J'ai peint le mur rouge.
'I painted the wall red.'
- b. *Jean a martelé le métal plat.
'John hammered the metal flat.'
- c. *Il a marché les jambes raides.
'He walked his legs off (lit., stiff).'
- (Washio 1997)
- (3) a. Hanako-ga kabe-o akaku nut-ta.
Hanako-NOM wall-ACC red paint-past
'Hanako painted the glass red.'
- b. ?*Hanako-ga kinzoku-o taira-ni tatai-ta.
Hanako-NOM metal-ACC flat pound-past
'Hanako pounded the metal flat.'
- c. ?*Taro-ga gomi-o heya-no-sumi-ni hait-ta
Taro-NOM dust-ACC room-GEN-corner-to sweep-past
'Taro swept the dust into the corner of the room.'
- d. *Rannaa-ga kutuzoko-o usuku hasit-ta.
runner-NOM shoe soles-ACC thin run-past
'The runners ran the shoe soles thin.'
- (4) a. Hanako-ga kinzoku-o taira-ni tataki-nobasi-ta.
Hanako-NOM metal-ACC flat pound-spread-past
'Hanako pounded the metal flat.'

- b. Taro-ga gomi-o heya-no-sumi-ni haki-yose-ta.
 Taro-NOM dust-ACC room-GEN-corner-to sweep-move.to-past
 'Taro swept the dust into the corner of the room.'

In what follows, I will provide an analysis that accounts for these facts. The analysis I will propose is along the lines of Hale and Keyser (1993) and Chomsky (1995), incorporating some aspects of the lexical conceptual structure into syntactic structure.

2. Resultatives and Verb Meanings

Before getting into a syntactic account of these facts, let us consider what type of eventuality the resultative construction expresses. To do so, I borrow the notation of Lexical Conceptual Structure (LCS). In (5), the four types of verbs in the sense of Vendler (1967) are represented in terms of LCS. Given these notations, the predicates with the result phrases in (1) may be expressed as in (6) (cf. Kageyama (1996), Rappaport Hovav and Levin (1996)).

- (5) a. activity [*x* ACT (ON *y*)]
 b. state [*x* BE state / at place]
 c. achievement [BECOME [*x* BE state / at place]]
 d. accomplishment
 [*x* CAUSE [BECOME [*y* BE state / at place]]]
 [[*x* ACT (ON *y*)] CAUSE [BECOME [*y* BE state / at place]]]
- (6) a. [[*x* ACT ON<paint> *y*] CAUSE [BECOME [*y* BE red]]]
 b. [*x* ACT ON<pound> *y*] →
 [[*x* ACT ON<pound> *y*] CAUSE [BECOME [*y* BE flat]]]
 c. [*x* ACT ON<sweep> *y*] → [[*x* ACT <sweep>(ON *y*)] CAUSE
 [BECOME [*z* BE into the corner]]]
 d. [*x* ACT<run>] →
 [[*x* ACT<run>] CAUSE [BECOME [*y* BE thin]]]

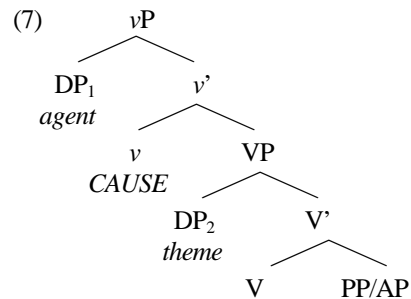
That is, though the original predicate types may vary, the resultative sentences in (1) have the LCS on the right of the arrows, expressing accomplishment eventualities. Some verbs, such as *paint* and the transitive use of *break* and *freeze*, are inherently of the accomplishment type, which is the case of (6a). Other predicates, such as *pound*, *sweep* and *run*, are originally activity predicates but they become accomplishment predicates with the presence of a result phrase. We would like to explore how this generalization expressed in terms of LCS can be captured in syntax. To do so, I would like to adopt Hale and Keyser's (1993) view that θ -roles and lexical relations are syntactically represented.

3. The Syntactic Representation of Resultatives

3.1 Lexical Relation and VP-Shell

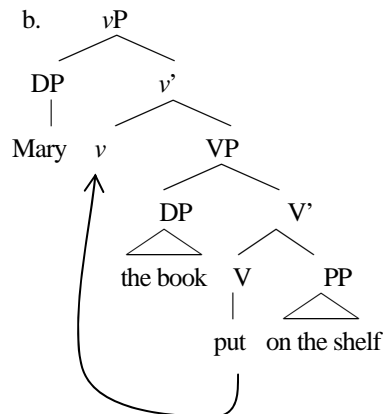
According to this view, an accomplishment eventuality and relevant θ -roles are

structurally represented as in (7):



In this structure, *v* and VP are in a causal relation and *v* is a kind of a causative predicate that always implies a dynamic event expressed by the VP. The specifier (DP₁) of the causative *v* (with a VP complement) is identified as agent or causer and the specifier (DP₂) of the lower predicate V is taken to be a theme or patient argument, being involved in the event expressed by VP. The complement of V, if it is a PP, indicates a location where the theme DP₂ is placed as a result of the event VP and if it is an AP, it indicates a state achieved as a part of the event. Thus, sentence (8a) with *put*, for example, is derived in the way shown in (8b) (see also Chomsky (1995)).

- (8) a. Mary put the book on the shelf.



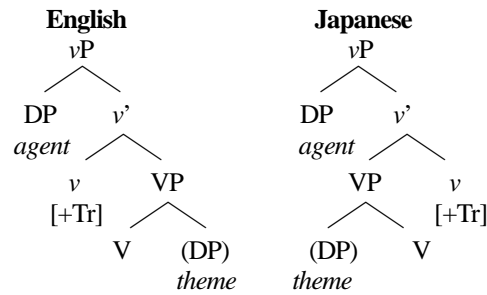
The verb *put*, which is under V, head-moves to *v* and the chain (or compound) of *v*-V is associated with the three arguments of *put*; namely, Agent *Mary*, Theme *the book* and resultant location *on the shelf*.

Here, I would like to extend this analysis further along the lines of Collins (1997b) and assume that *v* is considered to be a functional category and it can be active or inactive: I use the notation [+Tr] for active *v*'s and they assign an external

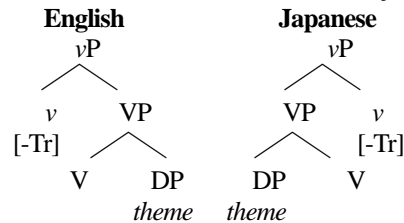
θ -role to DP₁ and checks accusative Case of DP₂; [-Tr] is for inactive v 's and they neither assign an external role nor check accusative Case.¹

In this system, the three types of predicates, transitives, unergatives, and unaccusatives, are assumed to have the structures in (9). Transitives and unergatives involve a v with the feature [+Tr] and unaccusatives have a v with [-Tr]. The lower verb V moves to v in both cases. With [+Tr] v , an agent external role is generated at the Spec of v . Here, I omit the structure above v P (i.e., TP) but I assume that the agent DP moves to Spec of TP and its nominative Case is checked by Tense before Spell Out. Furthermore, the object Case feature of the theme DP is checked covertly by v . When v is [-Tr], it does not assign an external role (i.e., there is no external agent argument) nor checks the object Case of the theme DP. The theme DP moves to Spec of TP overtly and its nominative Case is checked there:

- (9) a. *activity predicates (transitives and unergatives)*
 v [+Tr]: with external role, Obj Case checking



- b. *unaccusative predicates*
 v [-Tr]: no external role, no Obj Case checking

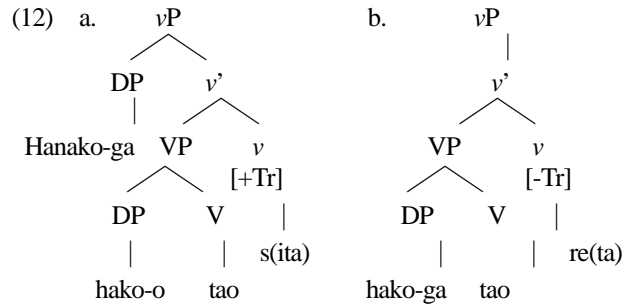


Within this system, the intransitive-transitive alterations of Japanese verbs exemplified in (10) are captured in terms of what morpheme resides at v . The pair in (11), for example, is syntactically represented as in (12), where the stem V *tao-* is accompanied by the v [+Tr] element, *-s-*, for the transitive (11a) and by the v [-Tr] - *re-* for the intransitive (11b).

¹ Collins (1997) uses Tr and TrP instead of v and v P, respectively. Although I essentially follow Collins' system, I will continue to use v and v P in the following.

(10)	v [-Tr]: Intransitive	v [+Tr]: Transitive	
a.	-e- yak-e-ru or-e-ru war-e-ru	ϕ yak-u or-u war-u	'burn' 'fold' 'break'
b.	-re- tubu-re-ru tao-re-ru kowa-re-ru	-s- tubu-s-u tao-s-u kowa-s-u	'crush' 'cut-down' 'destroy'
c.	-ar- ag-ar-u sim-ar-u mag-ar-u	-e- ag-e-ru sim-e-ru mag-e-ru	'rise/raise' 'close' 'bend'
d.	ϕ ak-u tizim-u tat-u	-e- ak-e-ru tizim-e-ru tat-e-ru	'open' 'shrink' 'stand'

- (11) a. Hanako-ga hako-o taosi-ta. (tao-s-ita)
Hanako-NOM box-ACC push=down-past
'Hanko pushed down the box.'
- b. Hako-ga taore-ta. (tao-re-ta)
Hanako-NOM fall-down-past
'The box fell down.'



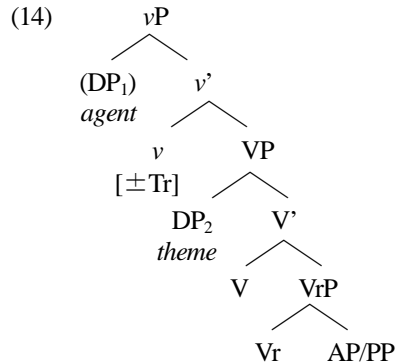
Given this system, the resultative construction can be structurally represented just like the *put* case in (8). That is, a result phrase takes place as a complement of the predicate V, designating an accomplishment event in collaboration with the V. However, there is one problem to be solved. That is, if the syntactic presence of a result phrase is the factor that determines whether a sentence conveys a resultative or accomplishment eventuality, there seems to be no way to distinguish true accomplishment verbs, such as *break* and *paint*, from activity verbs, such as *pound* and *sweep*, when there is no result phrase generated as a complement of VP. To put differently, the problem is how to distinguish the difference observed in (13): (13a) implies an accomplishment eventuality even without a result phrase, while without a result phrase (13b) only has an activity reading.

- (13) a. Mary broke the glass.
b. Susan pounded the metal.

Another problem to be solved is how to account for language variations. Recall that in Japanese, phrasal resultatives are possible only with true change-of-state predicates like *nur-u* ‘paint’ but not with activity predicates like *tatak-u* ‘pound’. This means that the occurrence of a result phrase in structure (8) is not free but must be licensed in a specific way. What needs to be done is to develop a system in which a result phrase is freely allowed in English but restricted only to true change-of-state verbs in Japanese.

3.2 Proposal

I would like to propose that the structure that gives rise to accomplishment eventuality is (14), rather than (8). That is, there is an independent result predicate projection (say, VrP with Vr as a head) between V and a result phrase and this projection is responsible for connecting the result phrase and the verb V. I assume that the presence of VrP is universally available to accomplishment or change-of-state verbs but not to activity predicates. Let me elaborate this:

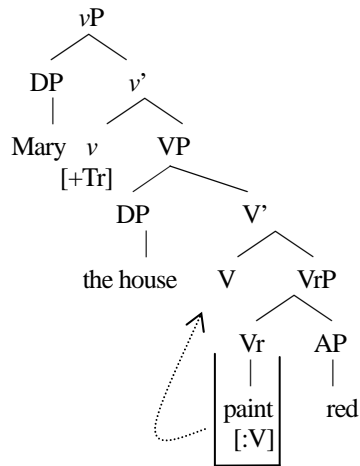


The basic function or meaning of Vr is to represent a resulting state, which is basically the same as what the semantic predicate BE does in the LCS representation. But Vr has more than the function of BE in LCS. It connects the eventuality that V expresses and the state or location that AP/PP represents. Only when VP and AP/PP are connected by way of Vr or VrP, the resultative construction obtains. In order to connect these two, the mere presence of Vr or VrP is not enough. I assume that Vr head-moves to the higher predicate V and only when this Vr→V operation takes place, the resultative construction is given rise to.

The fact that true change-of-state verbs can take a result AP/PP freely both in English and in Japanese suggests that Vr→V raising always takes place for such predicates. This is captured if the derivation of inherent accomplishment verbs is what is shown in (15b).

(15) a. Mary painted the house red.

b.

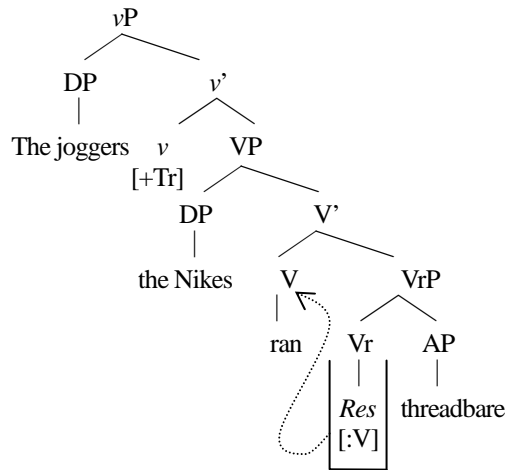


The category of true change-of-state or accomplishment verbs is Vr rather than V and they are generated under Vr and move to V . That is, these verbs universally undergo Vr - V movement. Assuming that movement is triggered by features, the feature responsible for the movement of Vr to V is a feature given to accomplishment verbs. I use the notation $[:V]$ to indicate such a feature. Predicates with this feature are sort of bound morphemes and they must be raised to V . That is, the feature $[:V]$, which needs to be checked off against the category V , forces the predicate with it to move to V . Accomplishment verbs are such predicates.

Let us now consider the case of activity predicates. Recall that language variations are observed as to whether activity predicates allow a result phrase: English freely forms the resultative construction with activity predicates, while Japanese does not. As discussed in relation to (13), activity predicates do not imply a result state without a result phrase. To express this fact, I propose that activity predicates are generated under V , not under Vr , and they do not have the feature $[:V]$. Thus, unless something mediates the activity V and a result phrase AP or PP , resultatives are not possible. In the case of Japanese, no such mediator is available and activity predicates cannot host a result phrase. But in English, there must be a mediator. Let us assume that English has an independent but abstract predicate, say *Res*, which occurs under Vr and raises to V , where the activity predicate resides. The derivation of resultatives with an activity predicate is shown in (16b), taking (1d), repeated here as (16a), as an example.

(16) a. The joggers ran the Nikes threadbare.

b.



Thus, the difference between accomplishment verbs and activity verbs is not merely whether a result PP/AP takes place. What matters is at which predicate position a verb starts out. Activity verbs start out at *V* and accomplishment verbs at *Vr*. These two predicate types possess different feature specifications (with or without the feature *[:V]*) and only accomplishment verbs require head raising to *V*. To sum, the *Vr*→*V* operation is universally involved in change-of-state verbs, which explains why Japanese also exhibits resultatives with such predicates. Activity predicates, on the other hand, are generated under *V* and do not involve *Vr*. Hence, they do not license a result phrase. However, some languages such as English have an independent (abstract) predicate *Res*, which is *Vr* and can host a resultative phrase. Activity predicates can appear with a result phrase only when *Res* is available. Since Japanese lacks *Res*, *Vr*→*V* movement never takes place and phrasal resultatives are not observed with activity predicates.

Given this analysis, we can now account for the contrast in (13): accomplishment (13a) implies a result state without a result phrase, whereas (13b), which involves an activity verb, does not. As proposed above, accomplishment verbs always start out from *Vr*. Then even if no result phrase phonetically takes place, *Vr* is involved and the involvement of *Vr* means that it expresses an accomplishment eventuality regardless of whether a result phrase is present. This is the case of (13a). Activity verbs, on the other hand, do not start out at *Vr* but are generated under *V*. They can express an accomplishment eventuality only when the abstract predicate *Res* takes place under *Vr* and moves and adjoins to *V*. I would like to assume that the abstract independent *Res* must be accompanied by (is subcategorized for) a phonetically realized result phrase. The absence of a result phrase in (13b) indicates that the abstract *Res* is not present, either. Hence, (13b) expresses only an activity eventuality.

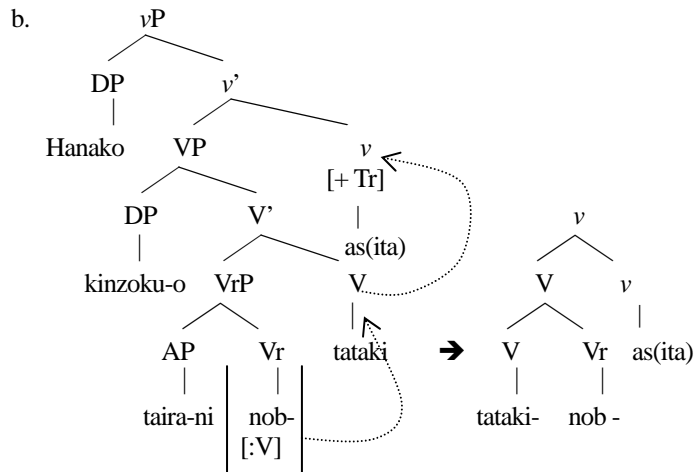
3.3 An Account of VVCs in Japanese

The VrP analysis of resultatives presented above can be extended to resultative VVCs in Japanese. As discussed, Japanese lacks the independent abstract predicate *Res*. However, I would like to claim that accomplishment or change-of-state verbs in Japanese can function similarly to *Res* of English. Note that typical VVCs such as the examples in (17) consist of an activity verb as the first element and a change-of-state verb as the second element (cf. Kageyama (1993, 1996), Li (1993), Matsumoto (1996), Nishiyama (1998)).

- (17) *osi-hirak-u* 'push-open'
tataki-nobas-u 'pound-spread'
uti-koros-u 'shoot-kill'
arai-otos-u 'wash-remove'

Thus, it is reasonable to assume that VrP is involved for the second verb of VVCs. All we have to assume now for VVCs is that the second verb, the predicate that expresses a result state, starts out at Vr and the first verb, the one that stands for an activity or motion, is generated at V. What distinguishes VVCs and phrasal resultatives is whether V hosts an actual lexical item and whether Vr is abstract. In VVCs, V hosts a lexical item, which becomes the first verb of the VVC and Vr is not abstract but hosts a lexical item, which appears as the second verb in the compound. The initial structure and derivation for the sentence (4a), repeated here as (18a), are shown in (18b).

- (18) a. Hanako-ga kinzoku-o taira-ni tataki-nob-as-ita.
 Hanako-NOM metal-ACC flat pound-spread-transitive-past
 'Hanako pounded the metal flat.'



The derivation in (18b) resembles both the derivation of the accomplishment (15b) and that of the activity (16b). It is like (15b) in that the accomplishment (or change-of-state) verbs, *nob(as-ita)* ‘spread’ in (18b) and *paint* in (15b), are generated under Vr and they head-move to V (and to *v*). In (15b), however, V is empty, whereas in (18b) V is occupied by the activity verb *tataki* ‘pound’ and the VVC *tataki-nob-as-u* is formed when Vr adjoins to V (and then to *v*). The derivation of (18b) is similar to that of (16b) in that two separate predicates, namely an activity V and a resultative Vr, are involved. The difference is that in (18b), Vr is not an abstract predicate but an actual change-of-state verb, whereas in the English example (16b), Vr is occupied by the abstract *Res*. That is, change-of-state verbs in Japanese can play the role of what the abstract *Res* of English plays.

As we saw, Japanese does not have the abstract *Res*; however, the examples in (19b) and (19c) with the verb *kom-u* ‘go.in’ suggest that Japanese does have an independent lexical Vr predicate, which is like *Res* but with a phonetic matrix. That is, *kom-u* is a lexical counterpart of *Res*:

- (19) a. *Hanako-ga daigaku-ni kon-da.
Hanako-NOM university-to go.in-past
- b. Hanako-ga baggu-ni hon-o osi-kon-da.
Hanako-NOM bag-DAT book-ACC push-go.in-past
‘Hanako pushed the book into her bag.’
(b’.*Hanako-ga baggu-ni hon-o osi-ta.)
- c. Taro-ga gakkoo-ni donari-kon-da.
Taro-NOM school-to yell-go.in-past
‘Taro stormed into school (to complain).’
(c’.*Taro-ga gakkoo-ni donat-ta.)

The ungrammaticality of (19a) shows that *kom-u* cannot be used independently and it has to be always used as the second verb of a VVC. What *kom-u* does is host a goal phrase that is a kind of a result phrase (cf. Kageyama (1993, 1996)). This in fact is essentially what the independent *Res* does. Note that *os(u)* ‘push’ in (19b) and *donar(u)* ‘yell’ in (19c) are activity verbs and they alone cannot take a goal role, as the ungrammaticality of the parenthesized examples, (19b’) and (19c’), indicate. The existence of predicates like *kom-u* seems to clearly indicate that the predicate *Res* under Vr is not a mere artifact but real: *kom-u* in Japanese is a lexical *Res* and English employs an abstract version of *kom-u*, namely, non-lexical *Res*.

3.4 Resultatives in Romance

This analysis of resultatives provides a way to describe Washio’s (1997) generalization discussed in relation to (2), which is repeated here as (20). That is, in Romance languages, the occurrence of a result phrase is restricted and even accomplishment verbs do not allow a result phrase. Along with the French sentences in (20), Spanish examples in (21) are also ungrammatical.

- (20) a. *J’ai peint le mur rouge.
‘I painted the wall red.’

- b. *Jean a martelé le métal plat.
'John hammered the metal flat.'
 - c. *Il a marché les jambes raides.
'He walked his legs off (lit., stiff).'
- (21) a. *Juan pintó la pared blanca
'John painted the wall white.'
- b. *Juan martilleó el metal plano
'John hammered the metal flat.'

Note that the Japanese example (22) is grammatical, which corresponds to the (a) examples of (20) and (21):

- (22) Taro-ga kabe-o akaku nut-ta.
Taro-NOM wall-ACC red paint-past.
'Taro painted the wall red.'

We have so far assumed that accomplishment verbs universally involve Vr and are to be generated at Vr and raised to V. If this is true, accomplishments in Romance must also involve Vr and be able to move to V. Then, the (a) examples in (20) and (21) must be allowed along with (22) in Japanese. The ungrammatical status of these examples suggests either of the following two: (i) Romance accomplishments are not true accomplishments but activity verbs or (ii) they behave just as in English and Japanese but the operation of Vr→V is not enough for a resultative to be licensed. It is hard to imagine that (i) holds, since the concept of "accomplishment" refers to a particular type of eventuality and it must be universally consistent. (ii), on the other hand, is quite probable, since there is a clear syntactic difference between Romance languages and English/Japanese; i.e., a result phrase in Romance must agree with the DP that it is predicated of. Though details must be worked out more carefully, I would like to assume here that whatever property Vr has as part of an accomplishment predicate is not good enough to mediate the agreement between a result phrase and a DP. Vr functions similarly to the semantic predicate BE of LCS but it is not identical with the lexical copulative *be* after all, which can mediate the agreement between a DP and a predicative adjective. This may appear rather stipulatory; however, there is evidence that suggests that agreement has to do with the ungrammaticality of (20) and (21). Compare the Spanish examples in (23) with (21a).²

- (23) a. Juan pintó la pared de blanco /en blanco.
Juan painted the wall of white in white
'Juan painted the wall white.'
- b. Juan rompió el vaso en pedazos.
Juan broke the glass in pieces
'Juan broke the glass into pieces.'

² These examples are due to Kimi Hoshino (personal communication). See also Hoshino (1996) for relevant discussion on resultatives in Japanese, English and Spanish.

(21a) and (23a) are identical except that ungrammatical (21a) has the agreeing adjective *blanca* ‘white’ while in (23a) the result phrase is in the form of PP *de blanco* or *en blanco* and there is no agreement between the PP and the DP *la pared*. Similarly in (23b), a result phrase is allowed with the accomplishment *rompió* ‘break’, if it is in the form of PP. Thus, even in Romance, accomplishment verbs can take a result phrase as long as no agreement is involved. The reason for the ungrammaticality of (20a) and (21a) is not due to the restriction on the occurrence of a result phrase but is due to the inability of Vr to mediate agreement between the result phrase and the DP that undergoes state changes. In this way, we can maintain the claim that change-of-state or accomplishment predicates universally involve Vr and a result phrase is licensed by the movement of Vr→V.

4. Summary

My proposal is summarized in the boxes below.

- The resultative construction has a structure that involves the resultative predicate Vr, which has the feature [:V].
- The predicate with the feature [:V] is raised to V. I.e., The feature [:V] is responsible for the movement Vr→V.
- Inherent accomplishment predicates are generated under Vr and have the feature [:V].
- Activity predicates, which do not have the feature [:V], are generated under V.
- English has the abstract predicate *Res* under Vr, which has the feature [:V] and is subcategorized for a result phrase (AP/PP).
- Japanese has a lexical *Res* (e.g., *kom-u* ‘go.in’) under Vr, which has the feature [:V] and is subcategorized for a location resultative phrase (PP).

Language Variations:

English

A result phrase freely takes place irrespective of predicate types.
→ abstract *Res* exists.

Romance:

A result phrase, if it is an AP, cannot take place even with an inherent accomplishment predicate. However, if it is a PP (or a phrase that does not need to agree with the DP that it is predicated of), it is allowed.
→ no abstract *Res*.
Vr (a predicate with [:V]) does not mediate agreement.

Japanese:

A result phrase is allowed only with an inherent accomplishment.
→ no abstract *Res*

The VrP analysis with Vr-V movement thus successfully accounts not only for language variations observed in phrasal resultatives but also for the two types of resultative constructions in Japanese, VVCs and phrasal resultatives.³

References

- Carrier, Jill, and Randall Janet H. 1992. The argument structure and syntactic structure of resultatives. *Linguistic Inquiry* 23:173-234.
- Chomsky, Noam. 1995. *The minimalist program*. Cambridge, Mass.: MIT Press.
- Collins, Chris. 1997. *Local economy*. Cambridge, Mass.: MIT Press.
- Goldberg, Adele. 1995. *A construction grammar approach to argument structure*. Chicago: University of Chicago Press.
- Hale, Kenneth, and Jay Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In *The view from building 20: Essays in linguistics in honor of Sylvain Bromberger*, ed. Kenneth Hale and Jay Keyser, 53-109. Cambridge, Mass.: MIT Press.
- Hasegawa, Nobuko. 1998. The Syntax of Resultatives. In *Report (2) Researching and verifying an advanced theory of human language*, 31-57. Kanda University of International Studies.
- Hoshino, Kimi. 1996. Kekka-koobun no gainen-koozoo (the conceptual structure of the resultative construction). Master Thesis, Kanda University of International Studies, Chiba, Japan.
- Jackendoff, Ray. 1990. *Semantic structures*. Cambridge, Mass.: MIT Press.
- Kageyama, Taro. 1993. *Bunpoo to gokeisei (grammar and word formation)*. Tokyo: Hitsuji Shobo.
- Kageyama, Taro. 1996. *Dooshi imiron: gengo to ninchi no setten (verb semantics: the interface between language and cognition)*. Tokyo: Kurosio Publishers.
- Levin, Beth, and Malka Rappaport Hovav. 1995. *Unaccusativity: At the syntax-lexical semantic interface*. Cambridge, Mass.: MIT Press.
- Li, Yafei. 1993. Structural head and aspectuality. *Language* 69:490-504.
- Matsumoto, Yo. 1996. *Complex predicates in Japanese*. Tokyo: Kurosio Publishers.
- Nishiyama, Kunio. 1998. V-V compounds as serialization. *Journal of East Asian Linguistics* 7: 175-217.
- Rappaport Hovav, Malka, and Beth Levin. 1996. Building verb meanings. Paper presented at a TACL meeting, Tokyo Metropolitan University.
- Vendler, Zeno. 1967. *Linguistics in philosophy*. Ithaca, New York: Cornell University Press.
- Washio, Ryuichi. 1997. Resultatives, compositionality, and language variation. *Journal of East Asian Linguistics* 6:1-49.

³ For consequences of this analysis regarding the nature of the head movement operation proposed in this paper and the organization of grammar in terms of how so-called lexical and syntactic processes interact, see Hasegawa (1998).