

Resultative Predicates in Japanese

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Abstract

Washio (1997; 1999) observes that resultative predicates are divided into two different groups, strong and weak resultatives, depending on ‘patienthood’ of the object. This typology of resultatives seems to capture a point of crosslinguistic variation in resultatives; Japanese has weak but not strong resultatives, while English has both. Washio also observes that there is another group of examples that bears a superficial resemblance to resultatives but constitutes a different phenomenon, hence spurious resultatives. The difference between weak and strong resultatives is made in terms of the ‘affectiveness’ of the verb. Thus the typology of resultatives proposed by Washio is semantically grounded. In this paper, I propose: (i) a fine-grained distinction for Washio’s weak resultatives: (ii) a syntactic analysis of the different resultative types. On the basis of syntactic evidence, I argue that there are two types of weak resultatives, an adjunct of VP and a complement of VP within the *v*P projection. I also argue that spurious resultatives are structurally higher than weak resultatives in Japanese.

1. Two-way distinction of resultative predicates: Washio (1997)

Washio’s strong/weak distinction of resultatives is motivated by the lexical semanticists’ idea of resultatives. The lexical semantic approaches (e.g., Levin and Rappaport Hovav 1988; 1995) assume that the lexical semantics of the verb and the lexical semantics of the adjective in a resultative construction are independent of each other. Therefore, it is possible to have an adjective that has a completely independent semantic value from that of the verb as a resultative predicate, as exemplified in (1).

- (1) The horses dragged the logs smooth.

In (1) the meaning of the adjective *smooth* is not part of the meaning of the verb *drag*, indicating that the resultative predicate is independent of the verb in its lexical semantics.

Washio classifies the resultative in (1) as a strong resultative, in which the meaning of the verb and the meaning of the adjective are completely independent of each other. More examples of strong resultatives are given

* I would like to thank Peter Svenonius and Minjeong Son for their insightful comments, suggestions and corrections.

in (2).¹ In (2c), the meaning of the verb ‘pound’ does not entail that the object that is pounded results in a conventional state.

- (2)
- a. The joggers ran the pavement thin.
 - b. He cried his handkerchief soggy.
 - c. John pounded the metal thin.
 - d. *Rannaa-ga asufaruto-o usu-ku hashitta.
runner-NOM asphalt-ACC thin-KU run.PAST
‘The joggers ran the pavement thin’
 - e. *Taro-ga hankachi-o gushogusho-ni naita.
Taro-NOM handkerchief-ACC soggy-NI cry.PAST
‘Taro cried his handkerchief soggy’
 - f. *Taro-ga kinzoku-o taira-ni tataita.
Taro-NOM metal-ACC flat-NI pound.PAST
‘Taro pounded the metal thin’

On the other hand, weak resultatives, as exemplified in (3), involve adjectives whose meanings are closely related to the lexical semantics of the verbs. The lexical semantics of the verb entails that the object of the verb results in a conventional state which is described by weak resultatives. In (3a), the meaning of the verb ‘polish’ entails that the object ‘the metal’ that is polished results in a conventionally expected ‘shiny’ state. (The examples in (3e, f) are taken from Washio 1997: 9 with minor modifications).

- (3)
- a. John polished the metal shiny.
 - b. Mary rolled the dough thin
 - c. John broke the glass into pieces.
 - d. Taro-ga kinzoku-o pikapika-ni migaita.
Taro-NOM metal-ACC shiny-NI polish.PAST
‘Taro polished the metal shiny’
 - e. Taro-ga pan kiji-o usu-ku nobashita.
Taro-NOM bread dough-ACC thin-KU spread.PAST
‘Taro spread the dough thin’
 - f. Taro-ga gurasu-o konagona-ni kowashita.
Taro-NOM glass-ACC fragment-NI break.PAST
‘Taro broke the glass into pieces’

In addition to strong and weak resultatives, Washio observes that there is another class of predicates that bear a superficial resemblance to weak resultatives. He calls this third type ‘spurious’ resultatives.

- (4)
- a. John tied his shoelaces tight.
 - b. He spread the butter thick.

¹The following abbreviations are used in this paper: NOM: nominative, ACC: accusative, GEN: genitive, TOP: topic, HON: honorific, PAST: past tense, PRES: present tense, and COPL: copula

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- (5) a. Taro-ga kutuhimo-o kata-ku musunda.
Taro-NOM shoe.lace-ACC tight-KU tie.PAST
 ‘Taro tied his shoelaces tight’
 b. Taro-ga pan-ni bataa-o atu-ku nutta.
Taro-NOM bread-LOC butter-ACC thick-KU spread.PAST
 ‘Taro spread the butter thick on the bread’

Predicated of a theme object NP, a spurious resultative such as *kata-ku* ‘tight’ in (5a) resembles a resultative predicate. It is, however, a separate phenomenon. A paraphrase test distinguishes weak resultatives from spurious resultatives. Weak resultatives are predicated of an object that typically undergoes a change of state. Therefore, it is possible to paraphrase the weak resultative sentence in (6a) with (6b).

- (6) a. Taro-ga gurasu-o konagona-ni kowashita.
Taro-NOM glass-ACC fragment-NI break.PAST
 ‘Taro broke the glass into pieces’
 b. Garasu-ga konagona-ni natta.
glass-NOM fragment-NI become.PAST
 ‘The glasses went to pieces’ (entailed by (6a))

Spurious resultative constructions, however, cannot be paraphrased in the same way.

- (7) a. Taro-ga kutuhimo-o kata-ku musunda.
Taro-NOM shoe.lace-ACC tight-KU tie.PAST
 ‘Taro tied his shoelaces tight’
 b. Kutuhimo-ga kata-ku natta.
shoe.lace-NOM tight-KU become.PAST
 ‘The shoelaces became tight’ (not entailed by (7a))

There are other characteristics that distinguish spurious resultatives from true resultatives: (i) spurious resultatives can be replaced with the corresponding adverbs without changing the meaning significantly, and (ii) they typically permit both adjectives in an antonym pair.

- (8) Taro-ga kutuhimo-o kata-ku/ yuru-ku musunda.
Taro-NOM shoe.lace-ACC tight-KU/ loose-KU tie.PAST
 ‘Taro tied his shoelaces tight/loose’

Since both ‘activity’ verbs such as *migaku* ‘polish’ in (3d) and ‘accomplishment’ verbs such as *kowasu* ‘break’ in (3f) permit weak resultatives, Washio argues that the acceptability of these types of resultative predicates in Japanese is not determined by whether the predicate is a ‘change of state’ predicate. Adopting the notion of ‘patienthood’ (e.g., Jackendoff 1990, Goldberg 1995), Washio proposes that it is the ‘patienthood’ of the entity that undergoes a change of the state that determines the type of re-

sultative predicates. In his system, a resultative with the object that holds the most ‘patienthood’ becomes a weak resultative in Japanese.

Jackendoff (1990) suggests that patients are divided into two types: grammatical patients whose patient role is assigned by the verb of the sentence itself and discourse patients whose patient role is given by virtue of discourse or pragmatics. Washio further divides grammatical patients into three groups, Patient 2, Patient 3 and Patient 4, depending on how much the object is affected by the action denoted by the verb.

- (9) (least affected) Patient 1 > Patient 2 > Patient 3 > Patient 4 (most affected)

Patient 1 is not a grammatical patient but a discourse patient which is least affected by the action denoted by the verb ((10a)). Patients 2, 3 and 4 are all grammatical patients; Patient 2 is necessarily affected in a certain way by the action denoted by the verb, although it is not guaranteed that the affected object would necessarily undergo a change of state ((10b)). Patient 4, on the other hand, is the argument of the verb that encodes both affectedness and change of state in the verb’s semantics, thus the object necessarily undergoes a change of state ((10d)). Patient 3 is something in the middle; it is necessarily affected by the action denoted by the verb, but it does not necessarily undergo any change of state ((10c)). As for the difference between Patient 2 and 3, Washio notes that Patient 3 is the object that undergoes a change of state in certain fixed directions, if it may undergo the change. Patient, 2, on the other hand, does not specify how the object changes.

- (10) a. They ran the pavement *(thin). (Patient 1)
 b. The horses dragged the logs smooth. (Patient 2)
 c. He wiped the table clean. (Patient 3)
 d. He sharpened the pencil pointy. (Patient 4)

Washio claims that Patient 3 and 4 form a natural class in that the verbs they cooccur with say something about the changes that the patient may or must undergo. Resultatives with these patients fall into weak resultatives. Thus, cross-linguistic differences between weak versus strong resultatives can be attributed to the patienthood; in Japanese resultatives, the NP that the resultative is predicated of must be a Patient 3 or Patient 4, whereas in English resultatives, the NP can be a patient of any type.

Washio’s observations that resultatives are divided into finer groups in terms of ‘patienthood’ seem to be real. However, the notion of ‘patienthood’ that is the source of distinguishing any type of resultatives from another combines with lexical semantic and discourse notions. Under Washio’s approach, Patient 3 and Patient 4 are grouped into weak resultatives. I claim that these two resultatives are not syntactically homogeneous but they have different syntactic structures. In the next section, I present some evidence

that suggests resultatives with Patient 3 and those with Patient 4 are structurally different.

2. Two types of weak resultatives

As Washio observes, Japanese allows only weak resultatives, which take either Patient 4 which necessarily undergoes a change of state or Patient 3 which is necessarily affected but may not undergo a change of state. The examples of weak resultatives are repeated in (11).²

- (11) a. Taro-ga pan kiji-o usu-ku nobashita.
Taro-NOM bread dough-ACC thin-KU spread.PAST
 ‘Taro spread the dough thin’
- b. Taro-ga yuka-o kirei-ni migaita.
Taro-NOM floor-ACC clean-NI polish.PAST
 ‘Taro polished the floor clean’

Usu-ku in (11a) is an instance of the resultative that appears with Patient 4 (henceforth ‘spread’ resultatives) and *kirei-ni* in (11b) is an instance of the resultative that appears with Patient 3 (henceforth ‘polish’ resultatives). I show in the next section that these ‘spread’ resultatives and ‘polish’ resultatives display different behaviour in terms of syntactic diagnostics such as honorification and ‘again’ modification, indicating that they have different syntactic structures.

2.1. Honorification

Honorification in Japanese can be expressed by the complex verb form *o-V-ni naru* that consists of the honorific prefix *o*, the verb stem, a morpheme *ni* and the verb *naru* ‘become,’ as illustrated by the examples in (12).

- (12) a. Tanaka sensei-ga seeto-o o-home-ni natta.
Tanaka teacher-NOM pupil-ACC HON-praise-NI become.PAST
 ‘Mr. Tanaka praised his pupil’

²*Ku* and *ni* that follow the resultative in (11a) and in (11b) are functional markings that mark conjugated forms of the verbal adjective *usu-i* and the nominal adjective *kirei-na*, respectively. The conjugated forms ‘adjective-*ku*’ and ‘adjective-*ni*’ can also function as adverbs, as illustrated by the examples in (i):

- (i) a. Taro-ga haya-ku hashitta.
Taro-NOM quick-ADV run.PAST
 ‘Taro ran quickly’
- b. Taro-ga shizuka-ni hashitta.
Taro-NOM quiet-ADV run.PAST
 ‘Taro ran quietly’

I assume that resultative phrases followed by *ku* or *ni* are not instances of (manner) adverbs but adjectives, although they are morphologically identical.

- b. *Seeto-ga Tanaka sensei-o o-home-ni natta.
pupil-NOM Tanaka teacher-ACC HON-praise-NI become.PAST
 ‘The pupil praised Mr. Tanaka’

In both sentences, the event of ‘praising’ denoted by the VP honours ‘Mr. Tanaka.’ However, only the example in (12a) is grammatical. The contrast between (12a) and (12b) in grammaticality indicates that the honorific complex verb is associated with the subject but not with the object.

Subject honorification is also found in Small Clauses and in nominalizations. When honorification is put into these clauses, there is no verbal complex *ni naru* following the adjectival predicate.³

- (13) a. Taro-wa ohimesama-o totemo o-utsukushi-ku omotteiru.
Taro-TOP princess-ACC very HON-beautiful-KU think.PRES
 ‘Taro considers the princess very beautiful’
 b. *Taro-wa Mary-o totemo o-utsukushi-ku omotteiru.
Taro-TOP Mary-ACC very HON-beautiful-KU think.PRES
 ‘Taro considers Mary very beautiful’

The contrast between (13a) and (13b) in grammaticality indicates that honorification holds between the SC subject and the SC predicate.

If weak resultatives constitute a homogeneous group, we predict that honorification applies to both ‘spread’ type resultatives and ‘polish’ type resultatives equally well. To test this, I choose a verb *sodateru* ‘raise’ and *migaku* ‘polish’ as an example of ‘spread’ and ‘polish’ resultatives, respectively. The paraphrase tests show that examples in (14) are instances of weak resultatives.

- (14) a. Zizyuu-ga ohimesama-o totemo utsukushi-ku
chamberlain-NOM princess-ACC very beautiful-KU
sodateta.
raise.PAST
 ‘The chamberlain raised the princess very beautiful’
 b. Ohimesama-ga totemo utsukushi-ku natta.
princess-NOM very beautiful-KU become.PAST
 ‘The princess became very beautiful’ (entailed by (14a))
 c. Ohimesama-ga tsume-o kirei-ni migaita.
princess-NOM nail-ACC beautiful-NI polish.PAST
 ‘The princess polished her nails beautiful’

³Note that the lack of *ni naru* in (13a) is not due to the lack of transitivity. This is shown by the fact that *o-V-ni naru* appears with unergative verbs.

- (i) Tanaka sensei-ga o-naki-ni natta.
Tanaka teacher-NOM HON-cry-NI become.PAST
 ‘Mr. Tanaka cried’

- d. Ohimesama-no tsume-ga kirei-ni natta.
princess-GEN nail-NOM beautiful-NI become.PAST
 ‘The princesss nails became beautiful’ (entailed by (14c))

The prediction concerning honorification, however, is not borne out.

- (15) a. Zizyuu-ga ohimesama-o totemo o-utsukushi-ku
chamberlain-NOM princess-ACC very HON-beautiful-KU
 sodateta.
raise.PAST
 ‘The chamberlain raised the princess very beautiful’
 b. Ohimesama-ga tsume-o (*o-)kirei-ni migaita.
princess-NOM nail-ACC HON-beautiful-NI polish.PAST
 ‘The princess polished her nails beautiful’

The ‘spread’ resultative *sodateru* allows the honorific morpheme *o-* to be prefixed to the resultative adjective in (15a), but the ‘polish’ resultative *migaku* does not, as in (15b). The ungrammaticality of (15b) is not due to the combination of ‘her nail’ and honorific predicate *o-kirei*, since this combination is fine independently.

- (16) Ohimesama-no tsume-ga o-kirei da.
princess-GEN nail-NOM HON-beautiful COPL
 ‘The princess’s nails are beautiful’

Thus, the differences between (15a) and (15b) in grammaticality should be attributed to the type of resultatives that is put into honorification: a ‘spread’ resultative but not a ‘polish’ resultative survives honorification, indicating that these two resultatives have different structures.

2.2. Ambiguity of ‘again’: Repetitive vs. restitutive reading

When the adverb *mata* ‘again’ modifies causative predicates such as *akeru* ‘empty (transitive),’ it gives rise to ambiguity between a repetitive reading and a restitutive reading.⁴

- (17) Taro-ga gomibako-o mata aketa.
Taro-NOM garbage.bin-ACC again empty.PAST
 a. ‘The garbage bin was empty sometime before. It is now full and Taro restored the garbage bin into the empty state, by emptying it’ (restitutive)
 b. ‘Taro emptied the garbage bin sometime before, and he repeated the same event’ (repetitive)

As the translations in (17) indicate, the restitutive reading presupposes that the garbage bin was empty some time before but it is not required

⁴See Son (in press) for a similar observation with causative predicates in Korean.

that anyone had caused it to be empty before. The repetitive reading presupposes that Taro had already emptied the garbage bin before, and he has done it again.

In Japanese the ambiguity between the repetitive reading and the restitutive reading can be eliminated by word order. When *mata* appears right in front of the verb, the sentence is ambiguous, as shown by the translations in (17). When it appears in front of the object, only the repetitive reading is available.

- (18) Taro-ga mata gomibako-o aketa.
Taro-NOM again garbage.bin-ACC empty.PAST
 (i) *(restitutive)
 (ii) (repetitive)

As in (18), when *mata* appears in front of the object *gomibako*, the sentence only presupposes that Taro's emptying event of the garbage box has already taken place before. Thus, the position of *mata* seems to be directly related to the reading that is available.

'Spread' resultatives and 'polish' resultatives have different readings when they are modified by *mata*.

- (19) a. Taro-ga kabe-o mata pinku-iro-ni nutta.
Taro-NOM wall-ACC again pink-color-NI paint.PAST
 (i) 'The wall was pink before, and Taro restored the wall to the pink state, by painting' (restitutive)
 (ii) 'Taro painted the wall pink before, and he repeated the event' (repetitive)
- b. Taro-ga yuka-o mata kirei-ni fuita.
Taro-NOM floor-ACC again clean-NI wipe.PAST
 (i) *'The floor was clean before, and he restored the floor to the clean state, by wiping' (restitutive)
 (ii) 'Taro wiped the floor clean, and he repeated the same event' (repetitive)

In (19a), the 'spread' resultative *nuru* with 'again' is ambiguous between a restitutive and a repetitive reading, but the 'polish' resultative in (19b) has only a repetitive reading. Assuming that the availability of the restitutive /repetitive readings is related to the structural position of *mata*, the contrast between (19a) and (19b) implies that these two resultatives involve different structures. The next section presents an analysis of resultatives that accounts for the aforementioned differences between the two types of weak resultatives.

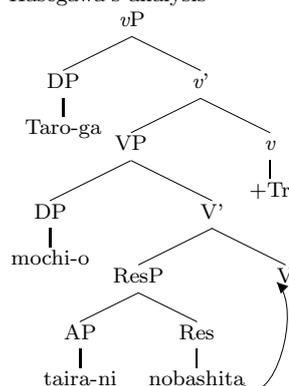
3. Analysis: A predication and an adjunction

Hale and Keyser (1991; 1993) take the view that argument structure is directly reflected in syntactic structure. Under this view, the theta roles and the lexical relations that belong to argument structure are identified and expressed by particular syntactic positions. Based on such a view, Hasegawa (1999) and Ramchand (in press) propose that there is an independent result predicate projection Result P (ResP) under which resultatives are generated. Both Hasegawa and Ramchand argue that ResP is located below V.⁵

⁵The main difference between Hasegawa's analysis and Ramchand's is: (i) that the resultative-taking verb appears under the Res node in Hasegawa's analysis, while it appears under V in Ramchand's analysis, and (ii) that the resultative and the object that it is predicated of constitutes a SC in Ramchand's analysis. Hasegawa's analysis contains some shortcomings, however. Theoretically, it seems problematic in terms of theta role assignment. Under her analysis, an object is generated under the specifier of VP, whereas the verb that seems to theta assign the object is generated under Res, as in (i).

- (i) Taro-ga mochi-o taira-ni nobashita.
 Taro-NOM rice.cake-ACC flat-NI spread.PAST
 'Taro spread the rice cake flat'

- (ii) Hasegawa's analysis



Assuming that the theta assignment obeys strict locality conditions and is basically restricted to sisters (Chomsky 1981), the theta role assignment of the verb to the object across the ResP boundary violates the locality conditions.

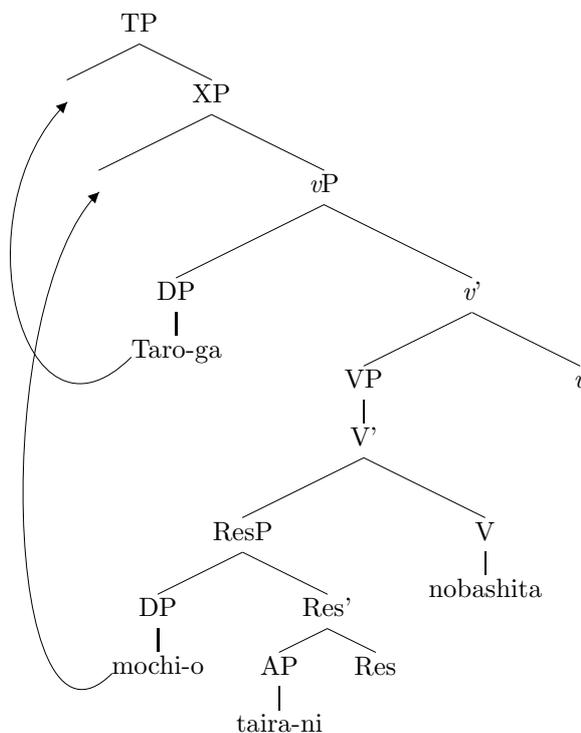
Even if the theta assignment is somehow taken care of by the V-V complex as a result of the head movement of the verb from Res to V, there is a problem in transitivity. Kageyama (1996) argues that a V-V complex in Japanese is sensitive to the argument structure of the predicates and only the same types of verbs can be combined, i.e. transitive verb + transitive verb and intransitive verb + intransitive verb. There are however, some pairs in which an intransitive verb combines with a transitive verb, as in (iii):

- (iii) *fuki-kobosu* 'blow-spill,' *tare-nagasu* 'drip-pour,' *hane-kaesu* 'bounce-return,' etc.

In a verb complex such as *fuki-kobosu*, V1 has only one theta role, whereas V2 has two. Kageyama claims that these exceptional V-V complexes are created by the morphological process of back-formation. Namely, they are derived from the intransitive-intransitive counterparts by intransitivization. It is, however, not clear how the internal argument is

In this paper, I adopt Ramchand's (in press) Small Clause (SC) analysis of locative/resultative constructions for Japanese and argue that the 'spread' type resultative is generated as a complement of Res, while the 'polish' resultative is generated as an adjunct of VP. Under the SC analysis adopted here, the two types of resultative constructions in (20) are represented as (21) and (22). In (21), the 'spread' resultative *nobasu* and the object *mochi* that it is predicated of form a small clause under ResP.

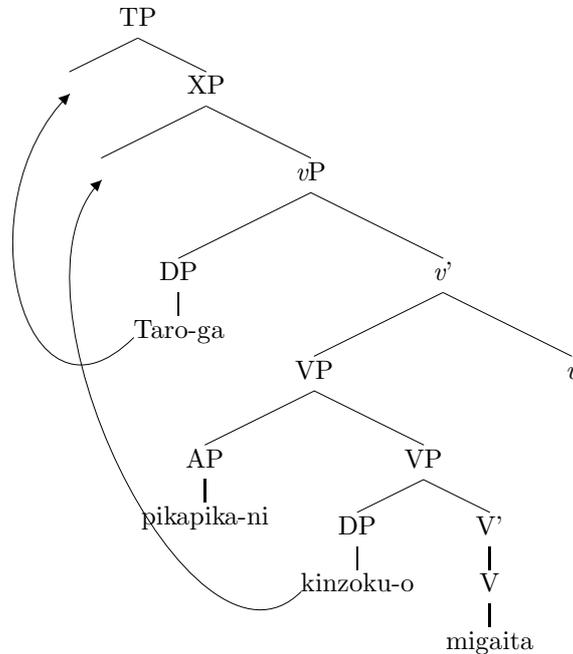
- (20) a. Taro-ga mochi-o taira-ni nobashita.
Taro-NOM rice.cake-ACC flat-NI spread.PAST
 'Taro spread the rice cake flat'
 b. Taro-ga kinzoku-o pikapika-ni migaita.
Taro-NOM metal-ACC shiny-NI polish.PAST
 'Taro polished the metal shiny'
- (21) 'spread' resultatives (= (20a))



The 'polish' resultative *pikapika-ni* in (20b) is adjoined to VP.

introduced in these cases of back-formation. Under Hasegawa's analysis, if it is the case that the V1+V2 complex assigns the theta role to the object, there will be a mismatch in theta assignment.

(22) ‘Polish’ type resultatives



With regard to the category of the ‘polish’ resultative *pikapika-ni*, it seems neither to be a VP, since it does not combine with tense morphemes, nor to be an NP, since it appears neither with demonstratives nor with case markers. It is not a PP, either, since typical PPs like locative expressions do not appear with the verb that takes ‘polish’ resultatives.

(23) *Taro-ga heya-no sumi-ni chiri-o haita.
Taro-NOM room-GEN corner-NI dust-ACC sweep.PAST
 ‘Taro swept dusts into the corner of the room’

By elimination, the category of the ‘polish’ resultative then must be either an AP or an AdvP. I assume that ‘polish’ resultatives are APs and not AdvPs. Supporting evidence comes from a morphological difference between resultative predicates and manner adverbs. Like canonical adjectives, mimetic words such as *pikapika* ‘shiny’ and *bechobecho* ‘wet’ can be used as prenominal modifiers.

(24) a. *Pikapika-no mado.*
shiny-GEN window
 ‘A shiny window’
 b. *Bechobecho-no taoru.*
wet-GEN towel
 ‘A wet towel’

When these mimetic words are used as resultatives, the genitive *no* that follows the mimetic words must be replaced with *ni*, as illustrated by the examples in (25).

- (25) Mado-garasu-o bechobecho-ni/*to fuku.
window-glass-ACC wet- NI/ TO wipe.PAST
 ‘(I) wiped the window wet’

In (25), as the translation shows, *bechobecho* describes the result state of the window being wet. The sentence does not mean that the event of wiping is done in the ‘wet’ manner.

When *bechobecho* is used as a manner adverb, it must be followed by a different particle *to*, as illustrated by the examples in (26):

- (26) a. Inu-ga bechobecho-to/*ni oto-o tate-te
dog-NOM wet- TO/NI sound-ACC make.noise-TE
 esa-o tabeta.
food-ACC eat.PAST
 ‘The dog ate the dog food, making a noise in a wet manner’
 b. Hoshi-ga pikapika-to/*ni hikate iru.
star-NOM shiny- TO/NI twinkle-TE is
 ‘Stars are twinkling in a glittering manner’

Thus, resultatives such as *bechobecho-ni* are at least not manner adverbs.

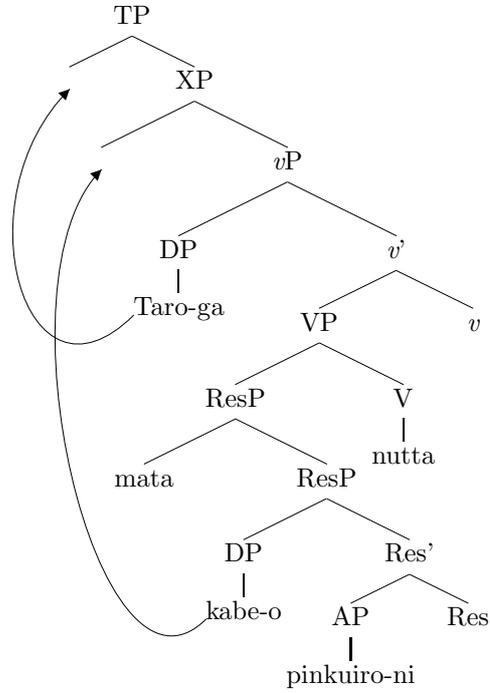
Under our analysis, the fact that ‘spread’ resultatives but not ‘polish’ resultatives are put into honorification is accounted for. In the previous section, we saw that subject honorification holds between a SC subject and a SC predicate. In our analysis, the object and the ‘spread’ resultative forms a SC constituent under ResP. Hence it is correctly predicted that honorification holds between the object and the ‘spread’ resultative. A ‘polish’ resultative, on the other hand, is an adjunct and there is no predicational relationship between the object and the ‘polish’ resultative. Hence a ‘polish’ resultative cannot be put into honorification.

In the previous section, we saw that ‘spread’ resultatives allow both a restitutive and a repetitive reading with ‘again’ modification, but ‘polish’ resultatives allow only a repetitive reading. Under our analysis, this contrast in ‘again’ modification between the two resultatives is also accounted for. Here, the ambiguity is due to the additional predicational phrase ResP to which *mata* ‘again’ can adjoin, as in (27).

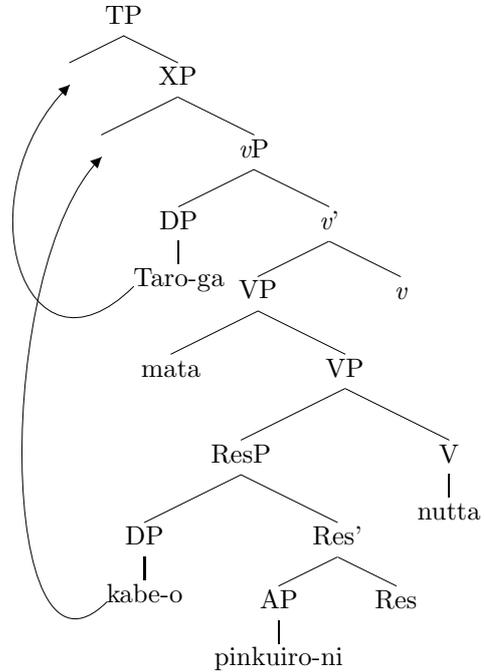
- (27) Taro-ga kabe-o mata pinkuiro-ni nutta.
Taro-NOM wall-ACC again pink-NI paint.PAST
 ‘Taro painted the wall pink again’ (restitutive /repetitive)

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(28) Restitutive reading



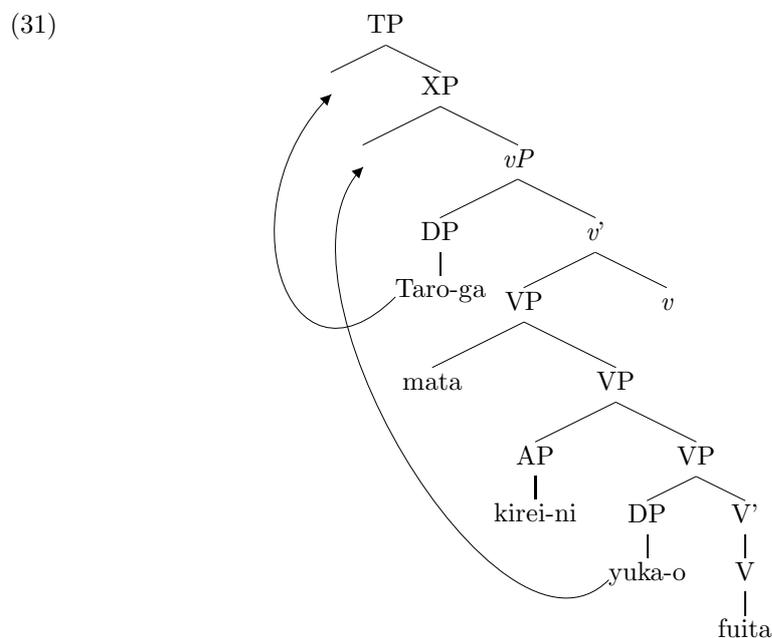
(29) Repetitive reading



As seen above, the adverb *mata* in the ‘spread’ resultative adjoins either to ResP, as in in (28), or to VP, as in (29). Therefore, the two different attachment sites available for *mata* explains the ambiguity between a restitutive and a repetitive reading; both the result state of the wall becoming pink and the event of painting can be modified by *mata*, the former being available due to the possibility of the resultative adjective forming a predicational relation with the object.

In the case of the ‘polish’ resultative in (30), *mata* can adjoin only to VP. There is no ResP available in this structure. Thus, *mata* can only modify the event of wiping, hence no ambiguity.

- (30) Taro-ga yuka-o mata kirei-ni fuita.
Taro-NOM floor-ACC again clean-NI wipe.PAST
 ‘Taro wiped the floor clean again’ (*restitutive/repetitive)



Thus, our analysis explains the different behavior between ‘spread’ resultatives and ‘polish’ resultatives in terms of honorification and scope ambiguity of ‘again.’

Under Ramchand’s decompositional approach to phrase structure, the availability of resultative predicates is determined by the presence of the feature [R] specified in the verb’s lexical semantics. If a verb has [R], then the verb has a Result P, giving rise to a resultative predicate. Adopting this idea for Japanese, I claim that only verbs that contain the [R] feature in their lexical entry select a ‘spread’ resultative. What kind of verbs contain [R] in Japanese, then? It seems that there is a natural class of verbs

that select ‘spread’ resultatives, namely a group of verbs that undergo a causative/inchoative alternation.

- (32)
- a. Koppu-o konagona-ni waru.
cup-ACC pieces-NI break.PRES
‘(I) break the cup into pieces’
 - b. Koppu-ga konagona-ni wareru.
cup-NOM pieces-NI break.PRES
‘The cup breaks into pieces’
 - c. Pan kiji-o usu-ku nobasu.
bread dough-ACC thin-KU spread.PRES
‘(I) spread the dough thin’
 - d. Pan kiji-ga usu-ku nobiru.
bread dough-NOM thin-KU spread.PRES
‘The bread dough spreads thin’

In contrast, ‘polish’ resultatives do not undergo the alternation.

- (33)
- a. Kuruma-o pikapika-ni migaku.
car-ACC shiny-NI polish.PRES
‘(I) polish the car shiny’
 - b. *Kuruma-ga pikapika-ni migaku.
car-ACC shiny-NI polish.PRES
‘The car polishes shiny’
 - c. Yuka-o kirei-ni haku.
floor-ACC clean-NI sweep.PRES
‘(I) sweep the floor clean’
 - d. *Yuka-ga kirei-ni hakeru.
floor-ACC clean-NI sweep.PRES
‘The floor sweeps clean’

It is argued that the verb’s alternation between causative and inchoative is characteristic of most change of state verbs (e.g., Levin and Rappaport Hovav 1991). Since the Japanese verbs that select ‘spread’ resultatives undergo the alternation, they are change of state verbs. This is consistent with Washio’s (1997) claim that weak resultatives that appear with Patient 4 are ‘obligatorily affected and undergo change of state.’ Thus, we may conclude that the verbs that contain [R] are change of state verbs (or at least verbs of change) in Japanese. ‘Polish’ resultatives are VP adjuncts. Concerning the strong resultatives, I speculate that they are adjoined somewhere in the higher domain of *vP*, and the resultative interpretations obtain due to discourse properties.

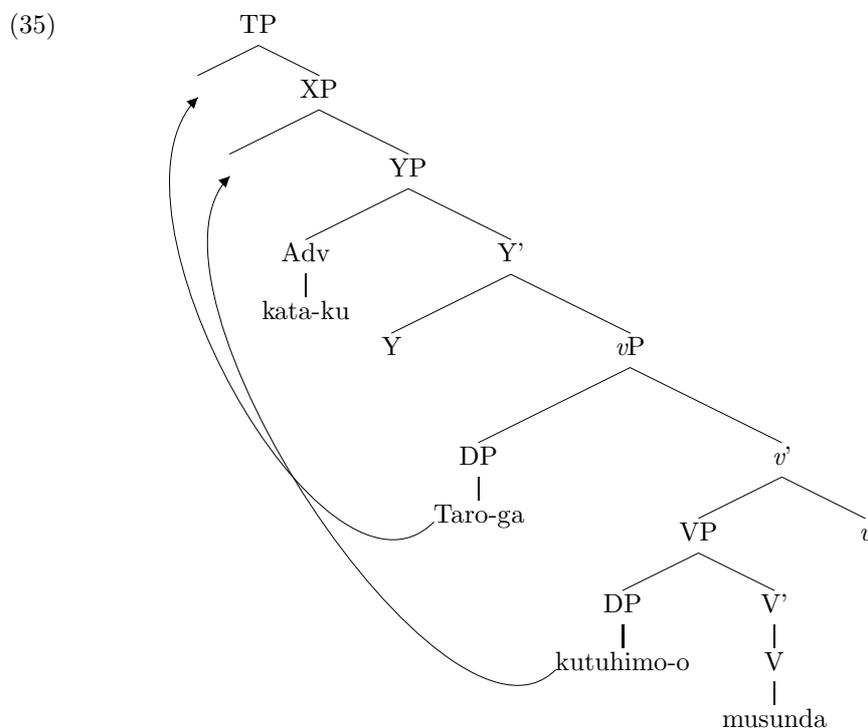
In addition to weak/strong resultatives, Washio (1999) observes that there is another group of resultatives that bear superficial resemblance to weak resultatives. In the following section, I will show that spurious resultatives are syntactically different from both ‘spread’ and ‘polish’ resultatives,

which originate in the higher domain of *vP* as adjuncts.

4. Spurious resultatives

According to Washio (1997), spurious resultatives are distinguished from weak/strong resultatives. In this section, I argue that a spurious resultative is generated at an adjunct position above *vP*. A spurious resultative like ‘tie shoelaces tight’ will be assigned the following structure in (35).

- (34) Taro-ga kutuhimo-o kata-ku musunda.
Taro-NOM shoe.lace-ACC tight-KU tie.PAST
 ‘Taro tied his shoelaces tight’



I will present two pieces of evidence to support the structure for spurious resultatives in (35).

4.1. Nominalization

The facts from nominalization demonstrate that spurious resultatives are syntactically different from weak resultatives. When a VP is nominalized in Japanese, case markers such as *ga* and *o* do not survive and must be replaced with a genitive marker *no*, as illustrated by the example in (36b).

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- (36) a. Taro-ga kuruma-o koonyuu-shita.
Taro-NOM car-ACC purchase-do.PAST
 ‘Taro bought a car’
- b. Taro-no kuruma-no koonyuu-wa ashita da.
Taro-GEN car-GEN purchase-TOP tomorrow COPL
 ‘Taro’s purchase of the car is tomorrow’
- c. *Taro-ga-(no) kuruma-o-(no) koonyuu-wa ashita
Taro-NOM-GEN car-ACC-GEN purchase-TOP tomorrow
 da.
 COPL
 ‘Taro’s purchase of the car is tomorrow’

In case of the goal morpheme *ni*, it must be replaced with *e* followed by genitive *no* in nominalization.

- (37) a. Taro-ga Mary-ni kuruma-o baikyaku-shita.
Taro-NOM Mary-NI car-ACC sale-do.PAST
 ‘Taro sold his car to Mary’
- b. Taro-no Mary-*(e)-no kuruma-no baikyaku.
Taro-GEN Mary-E-GEN car-GEN sale
 ‘Taro’s selling of his car to Mary’
- c. Taro-ga daigaku-ni itta.
Taro-NOM university-NI go.PAST
 ‘Taro went to the university’
- d. Daigaku-*(e)-no iki-kata.
university-E-GEN go-manner
 ‘The way to get to the university’

Spurious resultatives and weak resultatives behave differently in terms of nominalization. Like goal *ni* phrases in (37), weak resultatives of the ‘spread’ type may undergo nominalization with the *ni* morpheme replaced with *e*. The following examples in (38) and (39) are the instances of ‘spread’ resultatives and spurious resultatives. That (38) contains a ‘spread’ resultative is shown by the fact that (38) but not (39b) can be put into the ‘become’ paraphrase.

- (38) a. Nikon-ga kamera-o nibunnoichi-no saizu-ni
N-NOM camera-ACC half-GEN size-NI
 kogataka-shita.
miniaturization-do.PAST
 ‘Nikon miniaturized a camera into a half size’
- b. Kamera-ga nibunnoichi-no saizu-ni natta.
camera-NOM half-GEN size-NI become.PAST
 ‘The camera was miniaturized into a half size’ (entailed by (38a))

- c. Taro-ga kimono-o fukuzatu-na gara-ni
Taro-NOM kimono-ACC complicated-NA pattern-NI
 senshoku-shita.
dyeing-do.PAST
 ‘Taro dyed the kimono into complicated patterns’
- d. Kimono-ga fukuzatu-na gara-ni natta.
kimono-NOM complicated-NA pattern-NI become.PAST
 ‘The kimono was turned into complicated patterns’ (entailed
 by (38c))

In contrast, spurious resultatives in (39) cannot be put into the ‘become’ paraphrase.

- (39) a. Taro-ga moji-o tate-gata-ni haichi-shita.
Taro-NOM letter-ACC vertical-type-NI arrangement-do.PAST
 ‘Taro arranged letters into vertical shape’
- b. Moji-ga tate-gata-ni natta.
letter-ACC vertical-type-NI become.PAST
 ‘Letters became vertical shapes’ (not entailed by (39a))
- c. Taro-ga kutuhimo-o katame-ni musunda.
Taro-NOM shoe.lace-ACC tight.a.little-NI tie.PAST
 ‘Taro tied his shoelaces a little tight’
- d. Kutuhimo-ga katame-ni natta.
shoe.lace-NOM tight.a.little-NI become.PAST
 ‘The shoelaces became a little tight’ (not entailed by (39c))

Another diagnostic is that the weak resultative in (38) cannot be replaced with an antonym, but the spurious resultative in (39) can.

- (40) a. *Nikon-ga kamera-o nibai-no saizu-ni
N-NOM camera-ACC double-GEN size-NI
 kogataka-shita.
miniaturization-do.PAST
 ‘Nikon miniaturized a camera into a double size’
- b. Taro-ga moji-o yoko-gata-ni
Taro-NOM letter-ACC horizontal-type-NI
 haichi-shita.
arrangement-do.PAST
 ‘Taro arranged letters into horizontal shape’

‘Spread’ resultatives undergo nominalization, but spurious ones do not.

- (41) a. Nikon-no kamera-no nibunnoichi-no saizu-e-no
N-GEN camera-GEN half-GEN size-E-GEN
 kogataka.
miniaturization
 ‘Nikon’s miniaturization of a camera into a half size’

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- (42) b. Kimono-no fukuzatu-na gara-e-no senshoku.
kimono-ACC complicated-NA pattern-E-GEN dyeing-do.PAST
 ‘The dyeing of the kimono in complicated patterns’
- a. *Moji-no tate-gata-e-no haichi.
letter-GEN vertical-type-E-GEN arrangement
 ‘The arrangement of the letters into vertical shape’
- b. *Kutuhimo-no katame-e-no musubi-kata.
shoe.lace-GEN tight.a.little-E-GEN tie-manner
 ‘The manner of tying the shoelaces a little tight’

The ungrammaticality of the examples in (42a) and (42b) is due to the presence of the spurious resultatives: without the spurious resultatives, nominalization of (42a) and (42b) is fine.

- (43) a. Moji-no haichi.
letter-GEN arrangement
 ‘The arrangement of the letters’
- b. Kutuhimo-no musubi-kata.
shoe.lace-GEN tight-manner
 ‘The manner for of tying the shoelaces’

Thus, the fact that weak resultatives but not spurious resultatives undergo nominalization suggests that these two resultatives are structurally different.

Our analysis may account for this nominalization asymmetry. I assume that the nominalization in (41a) applies to a domain smaller than *vP*. The nominalization in (41a) cannot contain manner adverbs such as *subayaku* ‘quickly,’ as in (44a).

- (44) a. *Nikon-no kamera-no subaya-ku nibunnoichi-no saizu-e-no
N-GEN camera-GEN quick-ADV half-GEN size-E-GEN
 kogataka.
miniaturization
 ‘Nikon’s quickly miniaturization of a camera into a half size’
- b. Nikon-no kamera-no subaya-i nibunnoichi-no saizu-e-no
N-GEN camera-GEN quick-ADJ half-GEN size-E-GEN
 kogataka.
miniaturization
 ‘Nikon’s quick miniaturization of a camera into a half size’

In contrast to (44a), in which a manner adverb *subaya-ku* ‘quickly’ cannot appear in nominalization, (44b) that contains a corresponding AP *subaya-i* ‘quick’ is fine. Assuming that manner adverbs are generated as a *vP* adjunct, the non-availability of (44a) indicates that nominalization in (44b) targets a structure smaller than a *vP*.

Under our analysis, ‘spread’ resultatives are at the complement position of ResP, hence the *vP* that contains ‘spread’ resultatives undergoes nominalization. On the other hand, spurious resultatives originate in the higher domain of *vP*, and thus cannot be included inside nominalizations.

4.2. Spurious resultatives are higher than weak resultatives

In the previous subsection, I argued that spurious resultatives are generated above *vP*. In this subsection, on the basis of ordering among these resultatives, I will argue that spurious resultatives are structurally higher than both ‘polish’ and ‘spread’ resultatives.

Verbs such as *kiru* ‘cut’ may take either a ‘spread’ resultative such as *mizikaku* ‘short,’ as shown in (45a) or a spurious resultative *massugu-ni* ‘straight,’ as shown in (45b):

- (45) a. Mary-ga kami-o mizika-ku kitta.
Mary-NOM hair-ACC short-KU cut.PAST
 ‘Mary cut her hair short’
 b. Mary-ga kami-o massugu-ni kitta.
Mary-NOM hair-ACC straight-NI cut.PAST
 ‘Mary cut her hair straight’

The paraphrase test shows that *mizika-ku* in (45a) is a weak resultative, while *massugu-ni* in (45b) is a spurious resultative, since the former but not the latter can be paraphrased with a ‘become’ sentence.

- (46) a. Mary-no kami-ga mizika-ku natta.
Mary-GEN hair-NOM short-KU become.PAST
 ‘Mary’s hair became short’ (entailed by (45a))
 b. Mary-no kami-ga massugu-ni natta.
Mary-GEN hair-NOM straight-NI become.PAST
 ‘Mary’s hair became straight’ (not entailed by (45b))

The fact that *massugu-ni* but not *mizika-ku* cannot be replaced with a corresponding antonym also shows that *mizika-ku* and *massugu-ni* are a weak resultative and a spurious resultative respectively.

- (47) a. *Mary-ga kami-o naga-ku kitta.
Mary-NOM hair-ACC long-KU cut.PAST
 ‘Mary cut her hair long’
 b. Mary-ga kami-o gatgata-ni kitta.
Mary-NOM hair-ACC uneven-NI cut.PAST
 ‘Mary cut her hair uneven’

Mizikaku in (46) is a ‘spread’ resultative, since it shows ambiguity when modified by *mata* ‘again.’

- (48) Mary-ga inu-no ke-o mata mizika-ku kitta.
 Mary-NOM dog-GEN hair-ACC again short-KU cut.PAST
 ‘Mary cut the dog’s hair short’ (restitutive/repetitive)

The ‘spread’ resultative *mizika-ku* and the spurious *massugu-ni* may appear in the same clause. In that case, the word order among them is restricted. As the examples in (49) illustrate, spurious > ‘spread’ resultative order is fine, but the reversed order ‘spread’ > spurious is disallowed.

- (49) a. Mary-ga kami-o massugu-ni mizika-ku kitta.
 Mary-NOM hair-ACC straight-NI short-KU cut.PAST
 ‘Mary cut her hair short straight’
 b. ??Mary-ga kami-o mizika-ku massugu-ni kitta.
 Mary-NOM hair-ACC short-KU straight-NI cut.PAST
 ‘Mary cut her hair short straight’

Similar examples are illustrated below. *Aka-ku* in (50) is a ‘spread’ resultative, since (i) it can be paraphrased with a ‘become’ sentence, and (ii) it gives rise to ambiguity between a restitutive reading and a repetitive reading when modified by *mata*. In contrast, *kirei-ni* in (50) is a spurious resultative, since (i) it cannot be paraphrased with a ‘become’ sentence, and (ii) it can be replaced with a corresponding antonym. A ‘spread’ resultative *aka-ku* must follow a spurious resultative *kirei-ni*. The reversed order is not allowed.

- (50) a. Taro-wa doresu-o kirei-ni aka-ku someta.
 Taro-TOP dress-ACC beautiful-NI red-KU dye.PAST
 ‘Taro dyed his dress red in a beautiful manner’
 b. ??Taro-wa doresu-o aka-ku kirei-ni someta.
 Taro-TOP dress-ACC red-KU beautiful-NI dye.PAST

The examples above indicate that the order between ‘spread’ resultatives and spurious resultatives is fixed.

The order between ‘polish’ resultatives and spurious resultatives is also restricted. ‘Polish’ resultatives can be preceded but not followed by spurious resultatives.

- (51) a. Taro-ga yasai-o yawaraka-ku nita.
 Taro-NOM vegetable-ACC soft-KU boil.PAST
 ‘Taro boiled vegetables soft’
 b. Taro-ga yasai-o kirei-ni nita.
 Taro-NOM vegetable-ACC beautiful-NI boil.PAST
 ‘Taro boiled vegetables beautifully (so that the shape of the vegetables are intact)’

Yawaraka-ku and *kirei-ni* in the examples in (51) are a ‘polish’ resultative and a spurious resultative respectively. This is shown by the fact that (51a)

but not (51b) can be put into the ‘become’ paraphrase.

- (52) a. Yasai-ga yawaraka-ku natta.
vegetable-NOM soft-KU become.PAST
 ‘The vegetables became soft’ (entailed by (52a))
 b. Yasai-ga kirei-ni natta
vegetable-NOM beautiful-NI become.PAST
 ‘The vegetables became beautiful’ (not entailed by (52b))

Since (52a) can be put into the become paraphrase, *yawaraka-ku* must be either a ‘spread’ or a ‘polish’ resultative. If it is the ‘spread’ resultative, it is predicted to show ambiguity between a restitutive reading and a repetitive reading, when modified by *mata*. If it unambiguously has a ‘repetitive’ reading, it is a ‘polish’ resultative.

- (53) Taro-ga yasai-o mata yawaraka-ku nita.
Taro-NOM vegetable-ACC again soft-KU boil.PAST
 ‘Taro boiled vegetables soft again’ (*restitutive/repetitive)

We conclude that *yawaraka-ku* in (53) is a ‘polish’ resultative, since it only allows a repetitive reading.

When both *yawaraka-ku* and *kirei-ni* appear in the same resultative sentence, the order between the two must be spurious resultative>‘polish’ resultative:

- (54) a. Taro-ga yasai-o kirei-ni yawaraka-ku nita.
Taro-NOM vegetable-ACC beautiful-NI soft-KU boil.PAST
 ‘Taro boiled vegetables soft beautifully’
 b. ??Taro-ga yasai-o yawaraka-ku kirei-ni nita.
Taro-NOM vegetable-ACC soft-KU beautiful-NI boil.PAST

If the word order is reflected in the structure, the fact that spurious resultatives must precede both ‘polish’ resultatives and ‘spread’ resultatives implies that spurious resultatives are structurally higher than weak resultatives.⁶

5. Conclusion

In this paper, I presented a syntactic analysis of Washio’s observation of strong/weak resultatives. Based on the facts drawn from honorification and ‘again’ modification, I argued that weak resultatives can be syntactically divided into two types: ‘spread’ resultatives and ‘polish’ resultatives. Following Ramchand (2007), I proposed that ‘spread’ type resultatives are

⁶The order between the ‘spread’ resultatives and the ‘polish’ resultatives cannot be determined in the same manner, since it is difficult to find a verb that selects both types of resultatives.

complements of Res, while ‘polish’ type resultatives are VP adjuncts. Under this analysis, the difference between ‘spread’ resultatives and ‘polish’ resultatives with regard to honorification and ‘again’ modification is attributed to the structural difference between the two types of resultatives. I have also argued that spurious resultatives are adjuncts in the higher domain based on nominalization facts. The word order restrictions between spurious resultatives and weak resultatives also indicate that spurious resultatives are higher than weak resultatives.

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