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A Syntactic Approach to the Resultative Construction

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1. Introduction

This paper analyzes the syntactic structure of the resultative construction, examples of which are shown below in (1).

- (1) a. John hammered the metal flat.
 - b. The lake froze solid.
 - c. He ran his shoes threadbare.

There are several approaches to the resultative construction. In this paper, we focus on the theta-role assignment and the telicity of the construction. This paper is organized as follows. Section 2 reviews previous studies. Section 3 presents a new analysis for the resultative construction. Section 4 indicates the type of predicates that can be resultative predicates. Section 5 provides an intermediate summary. Section 6 and Section 7 include the Italian and Japanese data to verify the universality of my study. Section 8 presents further implications. Section 9 states the conclusion.

2. Previous studies

In this section, we review some previous studies of the resultative construction.

2.1 Hasegawa (1998)

Hasegawa proposes the structure shown in (2) for the resultative construction.



According to her, the basic function of Res is to represent a state, which is similar to what BE does in the Lexical Conceptual Structure (LCS) approach. However, Res serves an additional purpose: it connects the eventuality expressed by Vs to the state or location represented by AP/PP. Hasegawa also assumes that the Res head moves to the higher predicate V and that the resultative construction emerges only after this transfer takes place. However, Takamine (2007) argues that this analysis is flawed. According to her study, the object is basegenerated under the specifier of VP (Spec,VP), whereas the verb that assigns the theta-role to the object is base-generated under Res. Assuming that the theta-role assignment obeys strict locality conditions and is restricted to sisters, the theta role assignment of the verb to the object across the ResP boundary violates the locality conditions.

2.2 Takamine (2007)

Takamine divides Washio's (1997, 1999) classification of the resultative construction into two types; *Spread* resultative and *Polish* resultative. Examples are shown in (3).

(3) a. Spread resultative

Taro-ga moti-o taira-ni nobasita. Taro-NOM rice.cake-ACC flat-NI spread.PAST

"Taro spread the rice cake flat."

b. Polish resultative

Taro-ga kinzoku-o pikapika-ni migaita. Taro-NOM metal-ACC shiny-NI polish.PAST "Taro polished the metal shiny."

Takamine argues that these two types of resultatives display different behavior in terms of syntactic diagnostics such as honorification.

(4) a. Zizyuu-ga ohimesama-o totemo o-utukusi-ku sodateta. chamberlain-NOM princess-ACC very HON-beautiful-KU raise. PAST

'The chamberlain raised the princess very beautiful.'

b. Ohimesama-ga tume-o (*o-)kirei-ni migaita. princess-NOM nail-ACC HON-beautiful-NI polish.PAST 'The princess polished her nails beautiful.'

She argues that the *spread* reusltative *sodateru* allows the honorific morpheme *o*- to be prefixed to the resultative adjective, but in the *pol-ish* type resultative *migaku* does not. Based on Ramchand (2008), she proposed the structures presented in (4) as their base structures.



Takamine argues that the spread resultative is generated as a complement of Res, while the polish resultative is generated as an adjunct of VP. Using this structure, we can capture the theta-assignment by a verb to an object.

However, if we extend the analysis to the fake object resultative construction in English, we cannot capture the theta-assignment. For example, consider the sentences in (6). According to Bruzio's generalization in (7), a verb that can assign agent theta-role to its subject can assign Case to its object. In Takamine's analysis, the verb assigns the case and the theta-role to its argument. The postverbal argument can be assigned Case, but it cannot be assigned any theta-role because the verb is not capable of assigning theta-role.

- (6) a. He ran his shoes threadbare. (=(1c))
 - b. Mary cried herself sick.
- (7) Burzio's Generalization

A verb can Case-mark its object if and only if the verb theta-marks the subject.

Therefore, Takamine's study reflects shortcomings in the crosslinguistic view. Also, Hasegawa's analysis has the same shortcomings because she also says that the verb assigns a theta-role to its object.

3. Proposal

This section presents a new study of the resultative construction. We consider the structure in a minimalist framework (cf. Chomsky 1995, 2001, and 2008). I basically follow Hasegawa, and add some modifications to her analysis. I use Res(ult)-head. Hasegawa (1998) and Ramchand (2008) use this head, but the function of this head is not totally the same as mine.

(8) a. John hammered the metal flat in 10 minutes.

b. *John hammered the metal flat for 10 minutes.

c. John hammered the metal for 10 minutes.

The sentences in (8a-b), a common example the resultative construction, express a telic event, while the sentence in (8c) shows that the sentence without the resultative predicate can be an atelic event. Therefore, the resultative predicate makes the event telic. And, in my proposal, Res head is the source of the telicity, and the telicity is ensured when the Spec,Res position is filled with an argument interpreted as a resultee.

(9) a. John hammered the metal flat.



The postverbal argument *the metal* externally merges to the Spec, ResP position, and it ensures the telicity of the sentence there. The verb *hammer* assigns the accusative case to the argument. And it internally merges to Spec, VP.

Next, we consider the structure of the fake resultative construction. It is show in (10). As in the structure in (9), also in the fake resultative construction, the postverbal argument *his shoes* externally merges to the Spec, ResP position. The intransitive verb has the ability to assign the accusative case to the argument if we assume Bruzio's Generalization in (7). As for its theta-role, the Res-head assigns the theta-role *Resultee* to the postverbal argument.



If we assume that the Res-head really assigns the theta-role to the argument, in the transitive resultative sentence like in (9a), the postverbal argument has two theta-role, and it may violate the theta-criterion in (11), leading to ungrammaticality.

(11) theta-criterion

Given the structure S, there is a set K of chains, $K=\{C_i\}$, where $C_i=(\alpha_1{}^i...\alpha_n{}^i)$, such that:

(i) if α is an argument of S, then there is a $C_i \in K$ such that $\alpha = \alpha_i^{i}$ and a theta-role is assigned to C_i by exactly one position P, and,

(ii) if P is a position of S marked with the theta-role R, then there is a $C_i \in K$ to which P assigns R, and exactly one α_i^{i} in C_i is an argument.

However, according to Jackendoff (1990), this formal version of the theta-criterion does not require a one-to-one match. In the resultative construction with a transitive verb such as in (9a), *the metal* is α in (11), and C_i is a chain of an argument *the metal*. It is assigned a theta-role *Patient* by the verb in its complement position P. This criterion does not say that an argument is assigned only one theta-role by only one theta assigner. Therefore, as Jackendoff (1990), an argument can be assigned another theta-role.

4. Predicates that Res head can take

In English, APs, PPs, and a few NPs can be resultative predicates.

However, not every item of these categories can be the predicate. In this section, following Wechsler (2005), we particularly focus on adjectives and identify what kind of items can be resultative predicates.

4.1 Adjectives

Based on Krifka (cf. 1987) and Kennedy and McNally (2005), Wechsler argues that there are two classes of adjectives; gradable and nongradable. The gradable adjectives can be modified with modifiers such as *very*, *quite*, and *extremely*, but the non-gradable adjectives cannot, as shown in (12).

(12) a. gradable adjectives

very/ quite/ extremely {flat/ long/ expensive/ straight/ full/ dull}

b. non-gradable adjectives

?? very/ quite/ extremely {dead/ triangular/ invited/ sold}

Moreover, gradable adjectives can be used as comparatives as shown in (13).

(13) flatter, longer, more expensive, straighter, fuller, duller However, non-gradable adjectives cannot be used as comparatives, as observed in (14).

(14) ??more dead/ triangular/ invited/ sold

In addition, gradable adjectives can be divided into two types; open and closed-scale. The primary difference between the two is that the former does not have an inherent point, while the latter does. This is observed in (15).

a. open-scale adjectives ??completely {long/ wide/ short/ cool} b. closed-scale adjectives

completely full/ empty/ straight/ dry

Open-scale adjectives lack inherent maxima: therefore they must rely on the context for their standard. Closed-scale adjectives, on the other hand, supply an inherent standard that serves as a default. Furthermore, Wechsler argues that there is another type of adjective: a closed -scale adjective with minimal maxima. This type of adjective immediately reaches its positive value, or the value of the endpoint is equivalent to the starting value, and it can be considered as a *de facto* openscale adjective such as *wet*, *damp*, and *stained*. Following Wechsler, I assume that only predicates that have an endpoint or maxima can be resultative predicates. As for the adjectives, only the closed-scale adjectives can be the resultative predicates, implying that only these adjectives with minimal maxima cannot be used as resultative predicates because the inherent standard of such adjectives is too low to be useful.

(15) He wiped the table clean/ dry/ smooth/ *damp/ *dirty/ *stained/ * wet

Boas (2003) indicates there are 77 examples using the resultative predicate *dry* and none with *wet*.

5. Intermediate summary

In this paper, I propose a structure for the resultative construction that captures the telicity requirement and theta-role assignment. A resultative predicate includes the endpoint in its scale, and the type of predicate is called closed-scale in Wechsler (2005). The postverbal argument which is interpreted as a Resultee is externally merges to Spec, Res position, and ensures the telicity of the sentence in this position. Also, the Res head assigns the theta-role to it, and the verb assigns the case. In the transitive resultative sentence, the postverbal argument has two theta-roles, but following Jackendoff (1990), it does not lead to ungrammaticality. In the following section, we observe Italian

and Japanese data to verify the crosslinguistic validity of my study.

6. Italian data

In this section, we examine the resultative construction in Italian to verify the universality of my study.

6.1 Napoli (1992)

Napoli (1992) argues that the resultative constructions with AP predicates are common in both English and Italian, though there are restrictions.

(17) Ha dipinto il palazzo rosso.

"He painted the wall red."

This sentence is correct, but those in (18) are ungrammatical. Therefore Napoli proposes a rule of interpretation for the Italian resultative in (19).

(18) a. *Ho stirato la camicia [pitta].

"He ironed the shirt [flat]."

- b. ?*Hanno riscaldato l'acqua [bollente]."They heated the water [boiling]."
- c. ?*Ha strappato la lettera [fine].

"He ripped up the letter [fine] (in small pieces)."

(19) Resultative Interpretation

In a sentence with a resultative AP, the primary predicate must be interpreted as focusing on the endpoint of the activity denoted by that predicate. If the resultative sentence is sufficiently modified to draw attention to the endpoint, the inappropriate sentences will improve.

According to Napoli, this is shown in (20). These sentences are accepted by many of her informants.

(20) a. Ho stirato la camicia [pitta pitta].

"I have ironed the shirt [flat flat]."

- b. Hanno riscaldato l'acqua [tanto calda che non ci si poteva]. "They heated the water [so hot that no one could get in.]"
- c. Ha strappato la lettera [fine fine].

"He ripped up the letter [very fine (fine fine)]."

In (20), all of the resultative predicates are arranged to focus on the endpoint.

6.2 Analysis

In this subsection, I analyze Napoli's data, using the structure that I proposed in the previous section. I assume that Italian resultative predicates such as '*pitta*' and '*bollonte*' cannot license the Res head because these predicates cannot focus on the endpoint, thus leading to ungrammaticality. If the resultative predicate is sufficiently intensified, the predicate can be generated in the Res head because it focuses on the endpoint.

(21) a. Ho stirato la camicia [pitta pitta]. (=(20a))



As in English, the postverbal argument *la camicia* is externally merges to Spec, ResP position, and it ensures the telicity of the sentence. The mechanism of case and theta-role assignment is the same

with English: Res-head assigns theta-role, and the verb *stiro* assigns the case to the argument.

7. Japanese data

In this section, we consider some resultative constructions in Japanese, especially the data in Takamine (2007).

7.1 Data

In this subsection, we observe some data and consider what is the source of the telicity. First, we focus on the data in Takemine (2007).

(22) a. Taro-ga moti-o taira-ni nobasita. (=(3a)) Taro-NOM rice.cake-ACC flat-NI spread.PAST "Taro spread the rice cake flat."
b. Taro-ga kinzoku-o pikapika-ni migaita. (=(3b))

Taro-NOM metal-ACC shiny-NI polish.PAST

"Taro polished the metal shiny."

As shown in (23), these sentences show the telicity, but the sentences without the resultative predicate express atelic events as in (24).

(23) a. Taro-ga moti-o 10-hun-de taira-ni nobasita Taro-NOM rice.cake-ACC 10-miniute-in flat-NI spread.PAST "Taro spread the rice cake flat in 10 minutes."

- b. *Taro-ga moti-o 10-hun-kan taira-ni nobasita Taro-NOM rice.cake-ACC 10-minute-for flat-NI spread.PAST "Taro spread the rice cake flat for 10 minutes."
- c. Taro-ga kinzoku-o 10-hun-de pikapika-ni migaita. Taro-NOM metal-ACC 10-minutes-in shiny-NI polish.PAST "Taro polished the metal shiny in 10 minutes."
- d. *Taro-ga kinzoku-o 10-hun-kan pikapika-ni migaita. Taro-NOM metal-ACC 10-hun-for shiny-NI polish.PAST "Taro polished the metal shiny for 10 minutes."

- (24) a. Taro-ga moti-o 10-hun-kan nobasita Taro-NOM rice.cake-ACC 10-minute-for spread.PAST "Taro spread the rice cake for 10 minutes."
 - b. Taro-ga kinzoku-o 10-hun-kan migaita. Taro-NOM metal-ACC 10-hun-for polish.PAST "Taro polished the metal for 10 minutes."

The sentences without resultative predicates can express telic events. In their literal meaning, they do not seem to contain the resultative predicates. However, in their implied meaning, these sentences in (25) express the result state.

(25) a. Taro-ga moti-o 10-hun-de nobasita Taro-NOM rice.cake-ACC 10-miniute-in spread.PAST (Literally)"Taro spread the rice cake in 10 minutes." (Implied) "Taro spread the rice cake flat in 10 minutes."
b. Taro-ga kinzoku-o 10-hun-de migaita. Taro-NOM metal-ACC 10-minutes-in polish.PAST (Literally)"Taro polished the metal in 10 minutes." (Implied) "Taro polished the metal shiny in 10 minutes."

Therefore, these are the resultative constructions: they contain the resultative predicates in their structures. And, as in English, the source of the telicity of the resultative construction In Japanese is the resultative predicate.

7.2 Analysis

In this subsection, we analyze the structure of the Japanese resultative constructions. I assume that this construction has the same structure as that of English. We consider the structure in (26) below.

(26) a. Taro-ga mocha-o taira-ni nobashita.



The postverbal argument *moti-o* externally merges in the Spec, ResP position, and it ensures the telicity of the sentence there. Also, the argument is assigned the theta-role Resultee by Res. The verb *nobasu* agrees with the argument and values its case as the accusative. And it internally merges to Spec, VP. As for the sentences in (25), I assume that the complement of Res is filled with a null element. Their structures are the same as in (26).

8. Further implications

In this section, we consider the further implications of my proposal. In the proposal, the postverbal argument is analyzed as a resultee in the event described by the verb. We can capture the events whose preverbal argument is considered as a resultee with my proposal. Examples are presented in (27).

(27) a. Alice entered the room.

b. He followed the star out of Bethlehem.

In addition, these sentences are telic.

(28) a. Alice entered the room in a minute.

- b. *Alice entered the room for a minute.
- c. He followed the star out of Bethlehem in an hour.
- d. *He followed the star out of Bethlehem for an hour.

In my proposal, the Spec,Res position is filled with the resultee element. In (28), the preverbal arguments of these sentences are considered as resultees, thus the arguments license the telic features of the sentences. The preverbal argument *Alice* enxternally merges with Spec, ResP, and licenses the telic feature of the sentences, and is interpreted as the resultee of the sentence. Then it internally merges to the Spec, vP.

(29)



The case is the same with the sentence in (28b).



In the structure, the preverbal argument externally merges with

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Spec, ResP because it is interpreted as the resultee of the sentence. The argument needs to merge to Spec, vP, but the postverbal argument the star is closer to Spec, vP. Therefore, the preverbal argument cannot internally merge there if this goes on. However, if we take the Equidistance discussed in Chomsky (1995: 185), this problem is solved.



In Chomsky (1995: 185), he state as follows:

In the abstract case [(31)], if Y adjoins to X, forming the chain (Y, t) with the minimal domain {Spec₁, Spec₂, ZP}, then Spec₁ and Spec₂ are *equidistant* from ZP (or anything it contains), so that raising of (or from) ZP can cross Spec₂ to Spec₁.

As for the minimal domain, it is the complement and the specifier of the element. Therefore, before Y internally merges to X, its minimal domain is {Spec₂, ZP}. After the merge, its minimal domain extends to {Spec₁, Spec₂, ZP}. In the configuration in (30), from Spec, *v*P, the postverbal argument *the star* is closer than the preverbal argument *he* before the merge. After the verb *follow* internally merges to small *v*, the minimal domain of the verb is {Spec, *v*P, Spec, VP, ResP}, and the raising from the ResP is possible. Therefore, the merge from the Spec, ResP is not blocked because it is the minimal domain of V, and the postverbal argument and the preverbal argument is equidistant from the Spec,*v*P.

9. Conclusion

In this paper, I propose a structure that captures the thetaassignment and telicity in the resultative construction. The resultee in the event is externally merges to Spec, ResP, and the telicity is ensured there. Also, the argument is interpreted as a resultee. If the argument is postverbal, it internally merges to Spec, VP. By contrast, if the argument is preverbal, it internally merges to Spec, vP. Also, if the sentence with the preverbal resultee has a postverbal argument, the preverbal resultee can cross the postverbal argument because they are equidistant from Spec, vP. With regard to the resultative predicate, the predicate that includes an inherent endpoint in its scale can be used as a resultative predicate.

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