

Resultative Phrases in Japanese as Modifiers

Tsuneko Nakazawa
University of Tokyo

1. Introduction

This paper investigates resultative phrases in Japanese and shows that their behaviors are more consistent with modifiers than with obligatorily controlled predicates as proposed by some authors. It is shown that, as expected of modifiers, Japanese resultative phrases iterate, and do not always take a predetermined argument of the main verb as the semantic subject or as the antecedent of a reflexive. A constructional account is given, which analyzes resultative phrases as adverbials selected by the head verb.

2. Resultatives in Japanese

Resultative phrases in Japanese are object-oriented, i.e. they describe a resultant state of the referent of object NP, in transitive sentences as in (1), and are subject-oriented, i.e. describe a resultant state of the referent of subject NP, in unaccusative intransitive sentences as in (2). (In the following examples, resultative phrases are underlined while the semantic subjects of resultative phrases are italicized.)

(1) Taro-ga *kabin-o* konagona-ni kowasi-ta.
Taro-NOM vase-ACC pieces-NI break-PAST
"Taro broke a vase to pieces."

(2) *hune-ga* huka-ku sizun-da.
ship-NOM deep-KU sink-PAST
"A ship sank deep."

While the order of the nominative NP, the accusative NP, and the resultative phrase in examples (1) and (2) is the unmarked one, the other linear orders are also possible as long as the verb remains at the end of sentences.

Although the patterns exemplified in (1) and (2) are fairly productive, resultative phrases are subject to sortal restriction imposed by the semantics of the main verbs. That is, resultative phrases must have the meaning generally predictable from the semantic properties of the main verbs. Thus, *kirei-ni arau* "wash (something) clean" is possible while *kitana-ku arau* "wash (something) dirty" is not. Washio (1997) calls these resultative phrases with predictable meaning "weak resultatives," and according to him, Japanese has only weak resultatives while English allows "strong resultatives" as well. In "strong resultatives," the meaning of resultative phrases and the meaning of main verbs are completely independent as exemplified by resultatives with "fake reflexives" in unergative intransitive sentences in English, e.g. *I laughed myself sick* (Simpson 1983). Japanese lacks those resultatives in which the semantic subject of resultative phrases is not an argument subcategorized by the main verb.

The head of resultative phrases in Japanese can be a noun as *konagona-* "pieces" in (1), an adjective as *huka-* "deep" in (2), or an "adjectival noun" as *kirei-* "clean." The syntactic and semantic functions of adjectival nouns are the same as those of adjectives, but their declension is rather similar to that of nouns than to adjectives: hence, they are traditionally called adjectival nouns. As shown in examples above, nouns and adjectival nouns are suffixed by *-ni*, and adjectives are suffixed by *-ku* in resultative phrases. These morphological forms, however, are not unique to the resultative construction, and they mark coordinate and subordinate clauses, and adverbials as well as resultatives. In other words, Japanese does not have a morphological form specific to resultatives, and the following example is ambiguous between resultative reading and adverbial reading.

(3) onna-no *ko-wa* yasasi-ku sodate-ru-beki-da.
woman-GEN child-TOP gentle-KU raise-NONPAST-should-be
"One should raise a girl to be gentle./ One should gently raise a girl."

The adjective *yasasi-* "gentle" in (3) can be interpreted as the way a girl should turn out to be (the resultative meaning), or the manner in which a girl should be raised (the adverbial meaning). The rest

of this paper argues that the head of resultative phrases in Japanese has the same lexical specification as adverbs, and that the resultative interpretation is determined by the construction.

3. Distribution of resultative phrases

Wechsler and Noh (2001) analyze resultative phrases in English and Korean as unsaturated complements whose unrealized subject is structure-shared by an argument of the main verb (see also Mueller (2002) for a similar, but not identical, analysis for German resultatives). Transitive verbs which subcategorize for a resultative phrase have a lexical specification exemplified in (4), which is similar to that of object-control verbs whose object index is shared by the (unrealized) subject of an infinitival VP complement.

(4) lexical entry for *hammer* (Wechsler and Noh 2001)

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The lexical entry for *hammer* in (4) accounts for the interpretation of a sentence *We hammered the metal flat*, in which the resultative phrase *flat* describes the resultant state of the referent of object, *the metal*. Subject-oriented resultatives in unaccusative intransitive sentences, e.g. *The puddle froze solid*, are accounted for in a similar lexical entry for *froze*, except that the unrealized subject of the resultative phrase *solid* is index-shared by the subject of *froze*.

Although Wechsler and Noh (2001) give evidence that Korean resultatives are unsaturated predicates, and not adverbs, the applicability of their analysis is questionable in the case of Japanese resultatives. Japanese resultatives exhibit behaviors similar to adjuncts rather than to controlled complements: as stated before, Japanese allows no fake objects, and sentences containing resultative phrases are grammatical without resultative phrases, i.e. resultative phrases are syntactically optional.

Furthermore, resultative phrases iterate as expected of adjuncts, but not of controlled complements subcategorized by the main verb, as shown in (5).

(5) Taro-ga *kabe-o* siro-ku kirei-ni nut-ta.
 Taro-NOM wall-ACC white-KU beautiful-NI paint-PAST
 "(lit.) Taro painted a wall white and beautiful."

Both resultative phrases *siro-* "white" and *kirei-* "beautiful" describe the state of the wall as a result of Taro's painting it. Since Japanese does not require an overt conjunction in a coordinate structure, it may be possible that these phrases are conjuncts of a coordinate structure rather than iterated adjuncts. A resultative phrase and a phrase which apparently describes the manner of painting, however, cooccur as shown in (6).

(6) Taro-ga *kabe-o* siro-ku *zyozu-ni* / *zyozu-ni* siro-ku nut-ta.
 Taro-NOM wall-ACC white-KU skillful-NI skillful-NI white-KU paint-PAST
 "Taro skillfully painted a wall white."

If (5) and (6) were analyzed as an instance of a coordinate structure, the analysis of the resultative phrase as a subcategorized complement would have to account for the coordination of two incompatible syntactic functions: a subcategorized predicate *siro-* "white" and a manner adverb *zyozu-* "skillfully." Analyzing a resultative phrase as adjunct requires no special treatment for (5) and (6) either as iteration or as a coordinate structure.

Resultative phrases as adjunct is further supported by the examples which express a resultant state induced by the event denoted by the main verb, but is not predicated of an argument of the main verb.

(7) Taro-ga *kutu-no* *himo-o* kata-ku musun-da. (taken from Washio 1997:18)
 Taro-NOM shoe-GEN lace-ACC tight-KU stiff-PAST
 "Taro tied his shoelaces tight."

In (7), the resultative phrase *kata-* "stiff" describes the tightness of a knot of shoe laces, but not of shoe laces: **kutu-no himo-ga kata-i* "(intended) The shoe laces are stiff." If it were to be analyzed as controlled complement, it would entail that the unrealized subject of the resultative phrase would be the shoe laces which become stiff as a result of tying them. It might be possible to argue that the use of the resultative phrase is adverbial and (7) is not an instance of the resultative construction, as Wechsler and Noh (2001) would. In either way, however, the fact remains that the phrase still describes the resultant state of the referent of theme argument in some way.

A binding fact provides another piece of evidence for resultative phrases not as controlled complements. In Japanese, a binder of anaphor *zibun* must be a subject, but the anaphora relation between a binder and the anaphor is not clause-bound. Thus, in a causative sentence (8), *zibun* in the embedded VP (indicated by brackets) is bound either by the matrix subject or the embedded (unrealized) subject.

- (8) Taro_i-ga yoso-no ko_j-ni [zibun_{i,j}-no ie-de gohan-o tabe-] sase-ta.
 Taro-NOM other-GEN child-DAT self-GEN house-at meal-ACC eat- cause-PAST
 "Taro had someone else's child eat a meal at Taro's/the child's house."

The antecedent of *zibun* is ambiguous between *Taro*, the matrix subject, and the causee *ko* "child," which is the controller of the embedded VP, as predicted by the binding principles for Japanese. However, *zibun*, which appears in the resultative phrase in (9), does not behave in the same way as that in the controlled complement in (8).

- (9) a. Taro_i-ga yoso-no ko_j-o zibun_{i,*j}-no oya-yori zyoubu-ni sodate-ta.
 Taro-NOM other-GEN child-ACC self-GEN parent-than healthy-NI raise-PAST
 "Taro raised someone else's child healthier than Taro's parent."
 b. yoso-no ko_j-ga zibun_j-no oya-yori zyoubu-da.
 other-GEN child-NOM self-GEN parent-than healthy-be
 "Someone else's child is healthier than his parent."

The resultative phrase in (9a) describes the state where somebody else's child has become healthier than Taro's parent but cannot mean healthier than the child's parent, a reading which would be expected if the resultative phrase were controlled by the object *ko* "child," and is equivalent to example (9b), where *ko* appears as the overt subject and binds the reflexive *zibun*.

Although it seems to be a cross linguistic pattern that a resultative phrase is object-oriented in transitive sentences and subject-oriented in unaccusative intransitive sentences, not all resultative phrases in Japanese follow the pattern. The resultative phrase in (10) describes a resultant state of *Taro*, i.e. the referent of subject, rather than the object, of a transitive verb *tabetukusi-* "eat up".

- (10) Taro-ga sakana-o hara-ippai-ni tabetukusi-ta.
 Taro-NOM fish-ACC stomach-full-NI eat-PAST
 "Taro gorged himself on fish."

As a result of eating fish, it is the subject *Taro*, not the object *sakana* "fish", that is full. The verb *tabetsukusi-* in (10) cannot be considered as a special verb which imposes an idiosyncratic control pattern on the resultative phrase since an object-oriented resultative phrase is equally possible as in (11).

- (11) Taro-ga sakana-o hone-dake-ni tabetukusi-ta.
 Taro-NOM fish-ACC bone-only-NI eat up-PAST
 "Taro ate fish down to the bare bones."

The resultative phrase *hone-dake-* "the bare bones" unmistakably describes a state of the referent of object *sakana* "fish." Thus, there are cases where resultative phrases describe a resultant state of either the referent of object or the referent of subject, of a transitive verb. Furthermore, unlike

English, resultative phrases sometimes describe a resultant state of the referent of indirect object as well (examples are not given due to space limitation).

Above data indicate that resultative phrases in Japanese do not behave as expected of controlled complements, but rather behave as adjuncts, but cleft sentences show that they are not exactly the same as typical adverbial modifiers, either. Example (3) demonstrated that some resultative phrases are ambiguous between descriptions of a resultant state, and of a manner in which the event expressed by a VP is carried out. When a resultative phrase is isolated from a VP in a cleft construction such as (12), however, it can only be interpreted as description of a manner.

- (12) *yasasi-ku su-bekinano-wa onna-no ko-o sodate-ru-koto-da.*
gentle-KU do-should-TOP woman-GEN child-ACC raise-NONPAST-COMP-be
"(lit.) What one should gently do is raise a girl."

The phrase *yasasi*- "gentle" loses its resultative reading when separated from the VP *onna-no ko-o sodate-* "raise a girl" in (12), and it can only express the manner of raising a girl. When an unambiguous resultative phrase such as (1) appears in a similar cleft construction, the sentence is senseless.

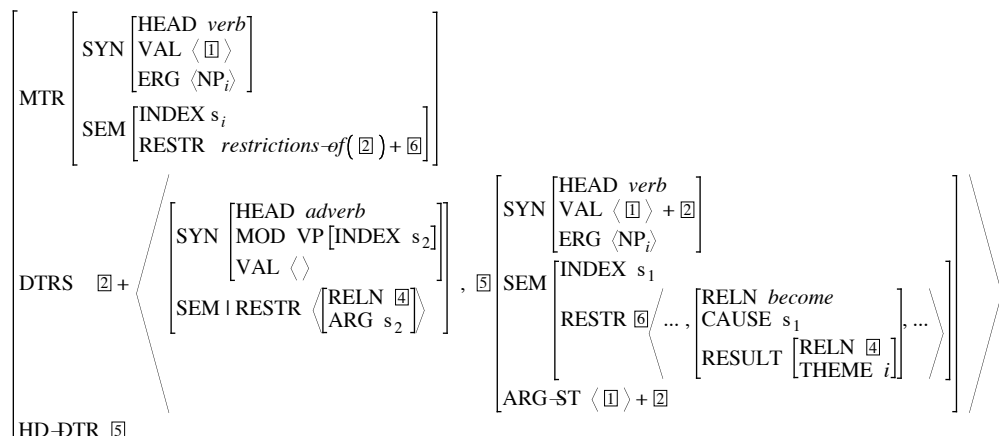
- (13) **Taro-ga konagona-ni sitano-wa kabin-wo kowasu-koto-da.*
Taro-NOM pieces-NI do-TOP vase-ACC break-COMP-be
"(lit.) What Taro did to pieces is break a vase."

Examples (12) and (13) suggest that resultative phrases are syntactically closer to a VP than manner adverbs are, and assuming that a cleft construction dislocates a VP as a whole, they are in fact part of the VP.

4. An analysis of resultatives as modifiers

The following is a constructional analysis of Japanese resultatives as modifiers, loosely cast in the framework of Sag (2007) and Sag et al. (2003).

- (14) Resultative Construction \Rightarrow



Feature description (14) is a resultative construction for a VP, which dominates, as indicated by the DTRS list, complements coindexed as [2], a resultative phrase, and the head verb coindexed as [5]: e.g. *kabin-o konagona-ni kowasi-ta* "broke a vase to pieces" in (1). In order to appear in this construction, the head verb [5] must describe an event which involves a change of state, as generally assumed to be a necessary condition for a resultative construction; this required semantic property of the head is represented in terms of the *become* RELN (relation) in the RESTR(iction) list coindexed as [6]. In other words, since the *become* RELN of the head's semantics makes an occurrence of a resultative phrase possible, the head "selects for" a resultative phrase in a sense of Bouma et al. 2001 (where adverbials are included in the DEPS (dependents) list of the head) while the head does not subcategorize for a resultative phrase: i.e. resultative phrases are syntactically optional.

The *become* RELN takes arguments for CAUSE and RESULT. Feature CAUSE takes as its value the situation index s_i of the event described by the head verb, and RESULT takes a relation [4] expressed by the resultative phrase. The THEME value of RESULT is constructionally specified to be the individual index i of the singleton member of ERG value of the head verb. Feature ERG is a valence feature originally proposed by Pollard (1994) and Kathol (1994) to analyze passivization facts in German. It isolates the subject NP in lexical entries of unaccusative intransitive verbs, or the direct object NP in transitive verbs, i.e. the theme argument, which plays the role of semantic subject of resultative phrases. The feature, however, will have to be extended to cover those cases where the semantic subject of resultative phrases is the subject of a transitive verb as in (10), or an indirect object, under a more general notion of "affected theme" (Koizumi 1994). The specification of the head verb states that the verb expresses an event which causes a change of state, and as a result of the change, the referent of theme argument is in the state specified by a resultative phrase.

The second member of the DTRS list is a resultative phrase analyzed syntactically as an ordinary adverbial phrase, rather than as controlled arguments. The theme of a resultant state will not appear on the VAL list of the head adverb (derived from an adjective), and hence not on the ARG-ST. Consequently, the semantic subject of the resultative phrase will not enter the binding relation with a reflexive in the resultative phrase reflecting the lack of binding demonstrated in (8).

The RESTR value of the MTR (mother) collects semantic relations expressed by its daughters except for that of the resultative phrase. The semantic relation expressed by the resultative phrase is indirectly incorporated into the semantics of the VP as part of the head daughter's RESTR value coindexed as [6].

5. Conclusion

This paper provides an analysis of Japanese resultatives as modifiers to reflect the data which show that they are not controlled predicates: they iterate, they do not participate in the binding relation with the semantic subject, and their semantic subjects are not the referent of a lexically predetermined argument of the head verb, but rather a theme argument in general. Semantic interpretation of resultative phrases is analyzed as constructional meaning, not derived from the obligatory control specified in the lexical entry of head verbs.

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