

A Three-Way Distinction of English Resultatives and Its Implication for Resultative Typology*

Chao Li

College of Staten Island, CUNY

Through a questionnaire study of English resultatives, this paper provides statistical evidence for a three-way distinction of the resultative construction, namely subcategorized weak resultatives, subcategorized strong resultatives, and unscategorized strong resultatives. It argues that the degree of difficulty in native speakers' accepting these three types of resultatives can be accounted for by the amount of effort involved in integrating the causing predicate, the result component, and the entity being predicated of by the result component. This explanation can also be extended to account for two implicational universals about the resultative construction. In addition, the paper also investigates the possibility of proposing a fine-grained typology of languages on the basis of this three-way distinction, and points out that the finding of Japanese as a language that does not allow unscategorized resultatives but allows subcategorized weak and subcategorized strong resultatives is one significant result of this fine-grained typology.

Key words: strong resultative, weak resultative, subcategorized, implicational universal, resultative construction, typology

1. Introduction

This paper concerns the types of the resultative construction in English and the typologization of languages that have this construction. Following Li (2008, 2009), I define the resultative construction as a complex predicate composed of two free components in a single clause, with the eventuality denoted by one component causing a change in a certain entity as a result, a change that is denoted by the other component. "Eventuality" in this definition is a cover term for Vendler's (1957) four types of verbs: states, activities, achievements and accomplishments. "Free" used in the definition refers to the fact that each of the two components in a resultative can be used as a free morpheme when employed alone.

It should be pointed out that the definition of the resultative construction adopted in this paper is different from Thepkanjana & Uehara's (2009:589-590) broad semantic characterization of resultatives as any linguistic forms that "express a state and a previous event," including result clauses and simplex words like *broken*.

* I am grateful to all the subjects and consultants who contributed one way or another to this study, which was partly funded by a PSC-CUNY Research Award (Award No: 60166-38 39). Thanks also go to Fang Liu and Yiyi Wang for their help with statistical analyses. Moreover, I am thankful to two anonymous reviewers for their constructive comments, which have led to the refinement and clarification of several important aspects of the paper.

Abbreviations: ACC=accusative; COMP=complementizer; DCL=declarative; GEN=genitive; NOM=nominative marker; PERF=perfective aspect; TOP=topic marker.

Moreover, the scope of the resultative construction as defined in this paper is also different from Nedjalkov & Jaxontov's (1988:3) scope of resultatives, which refer to all forms "that may be used to describe a state in the paradigm of dynamic verbs of action and process." More specifically, Nedjalkov & Jaxontov's resultatives are "those verb forms that express a state implying a previous event" (p. 6) in their narrow sense and refer to "all verb forms and regular deverbal derivatives that may express states, i.e. both resultatives and statives" (p. 7) in the broad sense of the term. Crucially, resultatives as construed by Nedjalkov & Jaxontov are really verb forms with an inflectional or derivational affix, as seen in the papers in the volume edited by Nedjalkov (1988), including Jaxontov's chapter on Chinese "resultatives" that involve the use of the suffix *-zhe*.

In typologizing resultatives, Washio (1997a, 1997b, 1999, 2002) makes a distinction between "strong resultatives" and "weak resultatives." In strong resultatives, "the meaning of the verb and the meaning of the adjective are completely independent of each other" (Washio 1997b:7) (cf. Washio 1997a:227, 1999:685-686, 2002:373); that is, in strong resultatives the kind of state in which the Causee comes to be cannot be predicted from the semantics of the verb denoting the causing eventuality, as shown in (1). Furthermore, Washio (1997a:227, 1997b:8, 1999:686, 2002:374) claims that unergative resultatives, as shown in (2), are necessarily strong resultatives.

- (1) a. The horses **dragged** the logs **smooth**. (Jackendoff 1990:226, Washio 1997b:39, Washio 1999:689)
 b. The jockeys **raced** the horses **sweaty**. (Washio 1999:689)
- (2) a. The joggers **ran** the pavement **thin**. (Randall 1982:86, Washio 1997a:228, Washio 1999:686, Washio 2002:374)
 b. The planes **flew** the ozone layer **thin**. (Washio 1997a:228, 1997b:33, 1999:686, 2002:374)

As for weak resultatives, the verb responsible for the causing eventuality has "a 'disposition' towards certain states" (Washio 1997b:10) and indicates "a potential 'directed change'" (1997b:16). In Washio's view, the two examples in (3) are both weak resultatives.

- (3) a. He **wiped** the table **clean**.
 b. He **sharpened** the pencil **pointy**. (Washio 1997a:227, 1999:689)

Note that, in the case of weak resultatives, Washio does not require the causing predicate to imply or entail a certain change. This can be seen from the fact that *wipe*, in Washio's view, "does not imply any result state" (1997b:12) though the sentence in (3a) is analyzed by him as a weak resultative. However, to make the distinction between strong and weak resultatives useful, it is necessary to require that the causing predicate of a weak resultative entail or imply an entity's undergoing a certain change and that the result component be a (further) specification of that change or direction of change undergone by the same entity. Without such a requirement, researchers might come to different conclusions as to whether a resultative is strong or weak. For example, to Washio (1997b, 1999), (3a) is an instance of weak resultative, as mentioned above. However, while adopting Washio's distinction between strong and weak resultatives, Kaufmann & Wunderlich (1998:41) regard the sentence in (3a) as a strong resultative. Nevertheless, if the above requirement with respect to weak resultatives is adopted, then (3a) should be analyzed as a weak resultative, given that a wiping event strongly implies an entity's becoming clean or dry and that the result component in (3a) clearly specifies that change undergone by the entity being wiped.

Thus, to be a weak resultative both of the following two conditions must be met: (i) the result component is a (further) specification of the change or direction of change implied or entailed by the causing predicate and (ii) the entity that the result component is predicated of must be the same entity as the one that undergoes the change implied or entailed by the causing predicate. To avoid any misunderstanding, it should be pointed out that the change or direction of change implied or entailed by the causing predicate is something that typically or necessarily results from the eventuality denoted by the causing predicate, regardless of the specifics of the entity that undergoes this change (i.e. the entity in question is only required to be a reasonable one involved in the eventuality denoted by the causing predicate). When the causing predicate is transitive and implies or entails a change, the implied or entailed change is also typically an intended result. To illustrate what is meant by the implied or entailed change or direction of change, let's take *wipe* and *paint* as examples. A wiping action implies that the entity being wiped, whether a table, a wall or something else, becomes clean or dry. Similarly, painting at least strongly implies a change of color of the entity being painted. For another example, freezing at least implies that the entity that is being frozen becomes hard or solid.

With the above definition of weak resultatives in mind, it would be interesting to consider whether examples like (4) below are weak resultatives or not.¹ Weeping or crying at least implies that the eyes of the person weeping or crying will become wet.

¹ Thanks to an anonymous reviewer for bringing to my attention interesting and challenging examples that are very similar to (4).

However, the entity that became wet in (4) is the handkerchief, a different entity from the one that got wet in the implication associated with the weeping or crying action. Because of this, the two examples in (4), on the basis of our definition of weak resultatives, are not true weak resultatives. Related to this, it is not surprising that, when I presented (3a) and (4b) to eight friends or colleagues who are not linguists but are native speakers of English, all of them rated (3a) as “Acceptable.” However, as for (4b), three of them rated it as “Unacceptable,” two rated it as “Neither So Acceptable Nor So Unacceptable,” and only three rated it as “Acceptable.”

- (4) a. I wept my handkerchief wet. (Higginbotham 2009:118)
 b. Freddy cried the handkerchief wet. (Vanden Wyngaerd 2001:61)

As for strong resultatives, I propose that any resultative that does not meet one or both of the two conditions for a weak resultative will be analyzed as a strong resultative. In this regard, it should be pointed out that in the case of strong resultatives the causing predicate may or may not imply or entail a change or direction of change. When the causing predicate of a resultative does not imply or entail a change or direction of change (e.g. *laugh* in *He laughed himself silly*), it will not meet the first condition for weak resultatives. This is because, if there is no change or direction change implied or entailed by the causing predicate, it is impossible for the result component to (further) specify a change or direction of change implied or entailed by the causing predicate. The result is that, when this happens, we have an example of strong resultative. On the other hand, when the causing predicate of a resultative does imply or entail a change or direction of change, the result can still be a strong resultative when one or both of the two conditions for weak resultatives are not met. Such examples are seen in (4). For another example, (5) would be a strong resultative because, although the wiping action implies a change or direction of change (i.e. the wiped entity’s becoming dry or clean), being dirty is not a (further) specification of the change or direction of change implied by the wiping action. As can be seen below, the fact that, without further context, (5), as a strong resultative, sounds odd or unacceptable and requires more accommodation is consistent with the fact that strong resultatives in English are generally harder to process and less acceptable than weak resultatives like (3a).²

² Another anonymous reviewer wondered whether the following two examples should be analyzed as weak resultatives or strong resultatives:

- (i) He ran himself tired.
 (ii) Ta la-duan-le shengzi.
 he/she pull-snap-PERF rope
 ‘He/she pulled the rope and as a result it snapped.’

(5) ?John wiped the table dirty.

In addition to the distinction between strong and weak resultatives made by Washio, Li (2008) also makes a distinction between subcategorized and uncategorized resultatives, the latter of which correspond to Goldberg & Jackendoff's (2004) "unselected transitive resultatives" and Rappaport Hovav & Levin's (2001) "uncategorized" resultatives. In subcategorized resultatives, the result component serves as the predicate of an overt syntactic argument which is subcategorized for by the causing predicate; in uncategorized resultatives, the result component serves as the predicate of an overt syntactic argument that is not subcategorized for by the causing predicate. This distinction between subcategorized and uncategorized resultatives can be said to correspond to Wechsler's (1997, 2005) distinction between "control" and ECM ("exceptional case-marking") resultatives (see also Carrier & Randall 1992). According to Wechsler (1997:309, 2005:257-258), control resultatives involve a resultative phrase "whose predication subject is a semantic argument of the matrix verb" and ECM resultatives involve a resultative phrase "whose predication subject is NOT a semantic argument of the matrix verb."

By taking into consideration distinctions between strong and weak resultatives and between subcategorized and uncategorized resultatives, Li (2008) proposes a three-way distinction of resultatives, namely uncategorized strong resultatives, subcategorized strong resultatives, and subcategorized weak resultatives.³ Subcategorized strong resultatives and subcategorized weak resultatives are exemplified by (1) and (3), respectively. As for uncategorized strong resultatives,

On our account, both examples are strong resultatives. If (i) is acceptable at all, it is a strong resultative because, although running arguably implies a change of location of the runner, the result component specifies a state and is by no means a (further) specification of the implied change of location. In the case of (ii), a pulling action does not imply or entail any change or direction of change when the entity being pulled is unspecified. As a result, the result component cannot be a (further) specification of the change or direction of change implied or entailed by the causing predicate. As neither example meets both of the conditions for weak resultatives, both examples are instances of strong resultatives even though (ii) is readily acceptable in Mandarin. Related to this, it should be pointed out that the acceptability difference with respect to different types of resultatives in Mandarin does not seem to be as clear or robust as in English. However, more systemic investigation is needed to confirm or disprove this (see also note 9).

³ In principle, there should also be uncategorized weak resultatives. However, in reality such resultatives are hard to find. This is because in the case of uncategorized resultatives the entity undergoing the change denoted by the result component is not subcategorized for by the causing predicate. On the other hand, the change or direction of change entailed or implied by the causing predicate is normally about a subcategorized argument. In this case, it is difficult and literally impossible to have a scenario in which the causing predicate implies or entails a change undergone by the same entity that the result component is predicated of, thus making it literally impossible for uncategorized resultatives to meet both of the conditions proposed for weak resultatives. As a result, there are literally no uncategorized weak resultatives and thus such resultatives are not discussed in the body of this paper.

they are illustrated by (2) above and (6) below. The fact that *his razor* in (6a) and *himself* in (6b), for example, are not subcategorized arguments of the causing predicates can be seen from the ungrammaticality of the sentences in (7) (for the use of the same diagnostic, see, for example, Goldberg 1995, Rappaport Hovav & Levin 2001, Goldberg & Jackendoff 2004). The two examples, however, differ in that (6b), but not (6a), involves the use of a “fake reflexive” (see, for example, Simpson 1983, Levin & Rappaport Hovav 1995).

- (6) a. Bill shaved his razor dull. (Jackendoff 1990:227, Kim & Maling 1997:191)
 b. Jack drank himself sleepy. (Boas 2003:120)
 c. The tourists walked themselves tired. (Levin & Rappaport Hovav 2004:478)
- (7) a. * Bill shaved his razor.
 b. * Jack drank himself.

Li (2008) notices that there is some gradience in speakers’ judgments as to the acceptability of (1-3). That is, to native speakers of English subcategorized weak resultatives are more acceptable than subcategorized strong resultatives, which in turn are more acceptable than unsubcategorized strong resultatives. However, what is lacking is some substantial evidence for Li’s observation, particularly experimental and statistical evidence. Moreover, Washio’s (1997b) distinction between strong and weak resultatives also lacks experimental and statistical evidence.

The purpose of the current study is to fill the above gap and to see whether there is any statistical evidence for Li’s (2008) proposal of a three-way distinction of English resultatives. Meanwhile, this study is also intended to determine, on the basis of statistical results, the validity of Washio’s (1997b) distinction between strong and weak resultatives. More importantly, as will become clear below, this study has interesting implications as to the typology of languages with respect to the resultative construction.

It should be pointed out that the distinction between strong and weak resultatives adopted in this paper is a further explication and development of Washio’s (1997b) intuition with respect to that distinction. Moreover, this adopted version differs from Li’s (2008) because the latter defines weak resultatives as resultatives in which the change denoted by the result component is either implied or entailed by the causing predicate. As for strong resultatives, Li (2008) defines them as resultatives whose causing predicate must neither imply nor entail the change denoted by the result predicate. Such a distinction, however, seems to lead to undesirable results because examples like *He painted the house red*, though being prime examples of weak

resultatives, should be analyzed as strong resultatives instead, given Li's (2008) definition and the fact that painting, though at least strongly imply a change of color, does not imply or entail that the color is red. This said, it is also necessary to point out that Li (2008) (and Washio (1997b)) do analyze examples like *He painted the house red* as weak resultatives and that the examples given in (8-10) below would also conform to their intuition, on the basis of the examples and analyses given by Li (2008) and Washio (1997b). That is, both Li and Washio would consider the examples in (8) to be weak resultatives and those in (9-10) to be strong resultatives. This paper, however, explicates their intuition with respect to the distinction between strong and weak resultatives and places the definition of these two types of resultatives on a more sound basis.

The paper is organized as follows. Section 2 presents a questionnaire study of native English speakers' acceptability judgments as to the three types of resultatives, and finds that there is statistical evidence for the distinction of the different types. Section 3 discusses the implications of this questionnaire study for the formulation of resultative implicational universals and for the typology of languages with respect to the resultative construction. The final section summarizes the findings of this paper.

2. Questionnaire study with respect to the three-way distinction of resultatives

To test the validity of both the three-way distinction of resultatives proposed by Li (2008) and the two-way distinction made by Washio (1997b), a questionnaire study that consists of ten subcategorized weak resultatives, ten subcategorized strong resultatives, and twelve unscategorized strong resultatives was conducted. All the sentences were drawn from the literature. Wherever possible, Washio's examples were used for the sake of better testing the validity of his distinction between strong and weak resultatives.⁴ The sentences used are shown in (8-10). For ease of reference, subcategorized weak resultatives, subcategorized strong resultatives, and unscategorized strong resultatives are called Type A resultatives, Type B resultatives, and Type C resultatives, respectively.

⁴ As the English resultative construction is a phenomenon of partial productivity or semi-productivity (see, for example, Boas 2000, 2003, 2005; Goldberg & Jackendoff 2004, 2005), it would not be a surprise to me if readers who are native speakers of English do not find all the examples in (8-10) as equally acceptable although they are all used in the respective works as acceptable and grammatical examples. Readers' different judgments are in fact something expected, given the motivation for this study. Meanwhile and more importantly, the paper also expects native English readers to find the examples in (8) **generally** easier to process and accept than those in (9) and judge the examples in (9) to be **generally** easier to process and accept than those in (10).

- (8) Type A: Subcategorized weak resultatives (10 altogether)
- a. John painted the house red. (Snyder 1995a:458)
 - b. The maid ironed the sheets smooth. (Randall 1982:86)
 - c. He sharpened the pencil pointy. (Washio 1997a:227, 1999:689)⁵
 - d. She cleaned the porch spotless. (Washio 1997a:227, 1999:689)
 - e. They wiped the table clean. (Hoekstra 1988:117)
 - f. Mary dyed the dress pink. (Washio 1997b:10)
 - g. Tom had swept the room clean. (Boas 2003:1)
 - h. I froze the ice cream solid. (Washio 1997b:10, Okamoto 1998:69)
 - i. The workers loaded the truck full. (Washio 1997b:26)
 - j. They leveled the road flat. (Washio 1997a:237, 1999:682)
- (9) Type B: Subcategorized strong resultatives (10 altogether)
- a. Mary shakes John awake. (Dowty 1979:221, Wechsler 2005:259)
 - b. The principal scolded the boy sullen. (Randall 1982:86)
 - c. The horses dragged the logs smooth. (Jackendoff 1990:226; Washio 1997b:39, 1999:689)
 - d. The jockeys raced the horses sweaty. (Washio 1999:689)
 - e. The lion's roar scared him stiff. (Washio 1997b:11)
 - f. The wind blew the wet laundry stiff. (Washio 1997b:11)
 - g. He pulled his tie tight. (Washio 1999:685)
 - h. Jack hammered the metal flat. (Washio 1997b:26)
 - i. She pinched her cheek red. (Washio 1999:685)
 - j. They cooked the chicken dry. (Hoekstra 1988:117)
- (10) Type C: Unsubcategorized strong resultatives (12 altogether)
- a. The alarm clock ticked the baby awake. (Randall 1982:81)
 - b. Fred cooked the stove black. (Jackendoff 1990:227, Kim & Maling 1997:191)
 - c. Bill shaved his razor dull. (Jackendoff 1990:227, Kim & Maling 1997:191)
 - d. The planes flew the ozone layer thin. (Washio 1997a:228, 1997b:33, 1999:686, 2002:374; cf. Randall 1982:81)
 - e. Stefan ate his plate clean. (Boas 2003:113)

⁵ One reviewer wondered whether (8c) was a true weak resultative. On the definition of weak resultatives proposed in this paper, (8c) indeed qualifies as a weak resultative as it meets both of the conditions for weak resultatives. First, the sharpening action at least strongly implies something (i.e. the entity being sharpened)'s becoming sharp as a result of its being sharpened. The result component *pointy* is a (further) specification of the state after the pencil was sharpened. This is because to sharpen something is to make it sharp and being sharp means "having a thin edge that is able to cut things or a fine point that is able to make a hole in things" (<http://www.merriam-webster.com/dictionary/sharp>; accessed June 22, 2014). Second, in this specific example the pencil is not only the entity the result component is predicated of but also the very entity sharpened by the Agent "he" and the very entity undergoing the change implied by the sharpening action.

- f. The joggers ran the pavement thin. (Randall 1982:86; Washio 1997a:228, 1999:686, 2002:374)
- g. The dog barked the neighbor awake. (Rappaport Hovav & Levin 1996:1)
- h. Christian drank his glass dry. (Boas 2003:113)
- i. He laughed himself sick. (Hoekstra 1988:115, Washio 1997a:223)
- j. The tourists walked themselves tired. (Levin & Rappaport Hovav 2004:478)
- k. Veronica sang herself crazy. (Jackendoff 1990:227)
- l. Jack drank himself sleepy. (Boas 2003:120)

Seventy-six undergraduate students, all native speakers of English, participated in this study. They were presented with sixty-five sentences, thirty-three of which were fillers. The fillers were roughly the same length as the test items and were all independently determined by two native speakers of English to be natural and grammatical. The final participants of the study did not include these two speakers of English. The seventy-six participants of the study were presented with the questionnaire containing the sixty-five English sentences and were asked to choose the answer that best fit their acceptability judgment of each sentence. Three choices were given for each sentence, “acceptable,” “neither so acceptable nor so unacceptable,” and “unacceptable.” The middle category of “neither so acceptable nor so unacceptable” was used to accommodate the fact that an acceptability judgment is not always black and white but rather often has a gray area and can be fuzzy at times. In fact, this middle choice is equivalent to a category of “neutral,” which is commonly included in studies of acceptability judgment. In the case of this study, each participant’s responses to the thirty-two test items (i.e. non-fillers) were recorded. Their responses to the fillers were also examined to determine the reliability of their judgments. As it turned out, two participants’ responses were not reliable because they kept rating the grammatical fillers as unacceptable. Another participant skipped one of the test items. Consequently, the results presented in Table 1 below are based on the ratings of seventy-three participants.

Table 1. Frequency counts of the three types of responses with respect to the three types of resultatives

	Acceptable	Neither So Acceptable Nor So Unacceptable	Unacceptable
Type A	369 (50.5%)	191 (26.2%)	170 (23.3%)
Type B	244 (33.4%)	229 (31.4%)	257 (35.2%)
Type C	115 (13.1%)	309 (35.3%)	452 (51.6%)

To determine whether the frequency counts shown in Table 1 are statistically significant or not, a chi-square test was performed (i) between subcategorized weak resultatives (Type A) and subcategorized strong resultatives (Type B), (ii) between subcategorized weak resultatives (Type A) and uncategorized strong resultatives (Type C), and (iii) between subcategorized strong resultatives (Type B) and uncategorized strong resultatives (Type C). Table 2 shows the results of the three tests. As the *p* value in each case is less than .0005, the acceptability judgments with respect to the three types of resultatives are all statistically significant.

Table 2. Chi-square results of the different comparisons of the three types of resultatives

Comparison	Chi-square Results
Type A Vs. Type B	$\chi^2 (2, N=1460) = 46.65, p < .0005$
Type A Vs. Type C	$\chi^2 (2, N=1606) = 278.02, p < .0005$
Type B Vs. Type C	$\chi^2 (2, N=1606) = 99.43, p < .0005$

The statistical significance of the participants’ judgments with respect to the three types of resultatives seen in Table 2 is actually also reflected in the fact that the judgments are not random. As Table 1 shows, most participants judged Type A resultatives to be acceptable and judged Type C resultatives to be unacceptable. With respect to Type B resultatives, there were roughly the same number of “Acceptable” and “Unacceptable” responses. If we assign a score of “3” to a response of “Acceptable,” “2” to a response of “Neither So Acceptable Nor So Unacceptable,” and “1” to a response of “Unacceptable,” we can again see the pattern that Type A resultatives are more acceptable than Type B resultatives, which in turn are more acceptable than Type C resultatives.⁶ This is reflected in the mean scores with respect to the three types of resultatives in Table 3 below.

⁶ One reviewer wondered whether there would be different results if we followed the intuition of, for example, Kaufmann & Wunderlich’s (1998) about the distinction between strong and weak resultatives and grouped the examples in (8-10) in a different way. As mentioned above, Kaufmann & Wunderlich analyze examples like (8e) as strong resultatives. Following this line of reasoning, as far as the resultatives in (8) are concerned, Kaufmann & Wunderlich very likely would also regard (8b), (8g), and (8i) as strong resultatives. In this case, if we use these four examples as representative instances of strong resultatives and use the rest of the examples in (8) as representative instances of weak resultatives, there would be no statistical difference in acceptability judgments between subcategorized strong and subcategorized weak resultatives. This can be seen from the fact that there is literally no difference in the average score with respect to the acceptability judgments of subcategorized “strong” resultatives (2.30) and subcategorized weak resultatives (2.25) (the average with reference to subcategorized weak resultatives is surprisingly smaller (translatable as “less acceptable”) than the average with reference to subcategorized “strong” resultatives). This result shows that we are on the right track when grouping all the examples in (8) together and analyzing all of them as subcategorized weak resultatives.

Table 3. Average score for each type of resultatives

Type	Mean
Type A	2.27
Type B	1.98
Type C	1.62

The question now is how to account for the difference in acceptability judgment among the three types of resultatives. Note that in this case Washio's distinction between weak and strong resultatives obscures or fails to successfully account for the gradience in speakers' judgments as to the acceptability of the three types of resultatives, particularly the contrast between Type B resultatives and Type C resultatives. This is because, using Washio's distinction, both the Type B and the Type C resultatives are instances of strong resultatives and are not expected to show a difference in acceptability.

In the spirit of Li (2008), I believe that the answer to the question raised at the beginning of the last paragraph lies in the amount of lexical information provided by the causing predicate of a resultative. In this respect, the lexical information provided by the causing predicate is to be examined with respect to the result predicate and the entity that the result component is predicated of. Note that subcategorized weak resultatives like (8a) involve more lexical information provided by the causing predicates than subcategorized strong resultatives like (9a) with respect to the formation of resultatives, because it is the former, not the latter, that lexically imply or entail a change or direction of change that is (further) specified by the result component. In turn, subcategorized strong resultatives like (9a) involve more lexical information provided by the causing predicates than uncategorized strong resultatives like (10a), because it is the former, not the latter, that involve a lexically subcategorized argument that the result component is predicated of.

I further propose that, with respect to the formation of resultatives, the more "on-stage" information causing predicates provide, the easier it is to integrate the causing predicate, the result component, and the entity predicated of by the result component and the more likely the resultatives formed with such causing predicates are acceptable. In the case of subcategorized weak resultatives like (8a), the entity undergoing the change denoted by the result component is lexically subcategorized for by the causing predicate, and the change is just a (further) specification of the change or direction of change entailed or implied by the causing predicate. This type of resultative is the easiest to process and is thus the easiest to accept among the three types of resultatives. With respect to subcategorized strong resultatives like (9a), although the entity undergoing the change is also subcategorized for by the causing predicate, the change denoted by the result component is by no means a specification

of the change or direction of change, if any, entailed or implied by the causing predicate. This makes such resultatives harder to process than subcategorized weak resultatives and thus makes them harder to accept. As for unscategorized strong resultatives like those in (10), the change denoted by the result component is again by no means a specification of the change or direction of change, if any, entailed or implied by the causing predicate. However, in the case of unscategorized strong resultatives, the causing predicate does not even subcategorize for the entity undergoing a change of state or location. In this case, both the result component and the participant which is not subcategorized for by the causing predicate but undergoes the change are “off-stage information” in the sense used by Boas (2000, 2003). As a result, this type of resultatives is the most difficult to process and the hardest to accept.⁷

If the above explanation for the difference in acceptability judgments among the three types of resultatives is on the right track, it also predicts that weak resultatives should be easier to accept than strong resultatives and that subcategorized resultatives should be easier to accept than unscategorized resultatives. This is confirmed by the average score for each of these four types of resultatives shown in Table 4. In addition, Table 5 shows the frequency counts of participants’ judgments with respect to weak resultatives, strong resultatives, subcategorized resultatives, and unscategorized resultatives. A chi-square test was also performed between weak resultatives and strong resultatives and between subcategorized resultatives and unscategorized resultatives. As the test results in Table 6 show, the *p* value in each comparison is less than .0005 and thus the difference in acceptability judgment is statistically significant not only between weak resultatives and strong resultatives but also between subcategorized resultatives and unscategorized resultatives. This result thus validates the distinction made between strong and weak resultatives.⁸

⁷ There is independent psycholinguistic evidence that a sentence becomes less acceptable when it gets harder to process. The best evidence comes from the fact that grammatical English sentences like garden-path sentences (cf. the well-known example *The horse raced past the barn fell*) and nested relative clauses (e.g. *The girl that the boy that the dog chased kissed blushed*) are too hard to process and as a result are typically judged by native speakers of English to be unacceptable in the language.

⁸ Within Type C resultatives (i.e. unscategorized strong resultatives) in (10), separate frequency counts were also made for the first eight items that do not involve a fake reflexive and for the next four items that do involve the use of a fake reflexive, and the results are shown in Table 7. A chi-square test performed on the basis of these frequency counts led to the following result: $\chi^2(2, N=876) = 2.75$, $p > .25$. That is, there is no statistical difference in acceptability judgment between the two subtypes of unscategorized strong resultatives.

Table 4. Average scores for weak resultatives, strong resultatives, subcategorized resultatives and uncategorized resultatives

Type	Mean
Weak Resultatives (Type A)	2.27
Strong Resultatives (Type B plus Type C)	1.78
<i>Subcategorized Resultatives (Type A plus Type B)</i>	2.13
<i>Uncategorized Resultatives (Type C)</i>	1.62

Table 5. Frequency counts of the three types of responses with respect to weak resultatives, strong resultatives, subcategorized resultatives and uncategorized resultatives

	Acceptable	Neither So Acceptable Nor So Unacceptable	Unacceptable
Weak Resultatives	369 (50.5%)	191 (26.2%)	170 (23.3%)
Strong Resultatives	359 (22.4%)	538 (33.5%)	709 (44.1%)
<i>Subcategorized Resultatives</i>	613 (42%)	420 (28.8%)	427 (29.2%)
<i>Uncategorized Resultatives</i>	115 (13.1%)	309 (35.3%)	452 (51.6%)

Table 6. Chi-square results of the comparisons between weak and strong resultatives and between subcategorized and uncategorized resultatives

Comparison	Chi-square Results
Weak Resultatives Vs. Strong Resultatives	$\chi^2 (2, N=2336) = 194.70, p < .0005$
Subcategorized Resultatives Vs. Uncategorized Resultatives	$\chi^2 (2, N=2336) = 226.43, p < .0005$

To summarize this section, the questionnaire study provides substantial statistical evidence for the three-way distinction of English resultatives made in Li (2008). The difference in the acceptability of the three types of resultatives (i.e. subcategorized weak resultatives, subcategorized strong resultatives, and uncategorized strong resultatives) falls out of the relationship between the causing predicate on the one

Table 7. Frequency counts of the three types of responses with respect to uncategorized strong resultatives with a fake reflexive and uncategorized strong resultatives without a fake reflexive

	Acceptable	Neither So Acceptable Nor So Unacceptable	Unacceptable
Uncategorized Strong Resultatives with a Fake Reflexive	44 (15.1%)	108 (37%)	140 (47.9%)
Uncategorized Strong Resultatives without a Fake Reflexive	71 (12.2%)	201 (34.4%)	312 (53.4%)

hand and the result predicate and the entity undergoing a change on the other in terms of subcategorization and implication/entailment.⁹ The study also shows that the distinction between weak resultatives and strong resultatives is statistically supported. Finally, this study finds that there is a statistical significance in speakers' judgments of subcategorized resultatives and uncategorized resultatives, a fact that is relevant to the next section on the implication of this questionnaire study for the typology of resultatives.

3. Typological implications

From a typological point of view, the statistical evidence for a three-way distinction of English resultatives provides important support and motivation for Li's (2008) fine-grained formulation of implicational universals with respect to resultatives and thus has important typological implications.

According to Li (2008), with regards to resultatives the following implicational hierarchy can be formulated:

(11) Resultative Implicational Hierarchy (cf. Li 2008:110)¹⁰

Uncategorized Strong Resultatives > Subcategorized Strong Resultatives >
Subcategorized Weak Resultatives

Two predictions can be made from the implicational hierarchy in (11). First, if a language allows uncategorized strong resultatives, then it must also allow subcategorized strong resultatives. Second, if a language allows subcategorized strong resultatives, it must permit subcategorized weak resultatives.¹¹

As shown below, there is evidence for the above two predictions in Mandarin and German resultatives. In Mandarin, the causing predicate and the result predicate of a

⁹ It would be interesting to see whether similar acceptability differences can be found in other languages that allow the three types of resultatives. In this regard, a strong position is that the same acceptability differences found in English resultatives should be replicated in languages like German and Mandarin. A weaker position is that in all languages that allow the three types of resultatives, Type A resultatives should be no less acceptable than Type B resultatives, and Type B resultatives should be no less acceptable than Type C resultatives. In other words, we should not find a language in which uncategorized strong resultatives are easier to process and accept than subcategorized strong and weak resultatives. Moreover, we do not expect subcategorized strong resultatives to be easier to process and accept than subcategorized weak resultatives in any language that allows both types. More empirical and experimental studies need to be performed to determine whether any of the two positions is crosslinguistically valid, and I leave such studies for the near future.

¹⁰ The implicational hierarchy in (11) obviously refines and expands Washio's (1999:703, 2002:380) generalization that "[i]f a language disallows Weak resultatives, then it also disallows Strong resultatives."

¹¹ A third prediction, which derives from the first two, can also be made, namely that if a language allows uncategorized strong resultatives, then it must also allow subcategorized weak resultatives.

resultative form a compound. The example in (12) shows that Mandarin allows unscategorized strong resultatives, which, according to (11), leads to the prediction that categorized strong resultatives should also be attested in the language. The fact that categorized strong resultatives like (13) are grammatical in Chinese bears out this prediction.

(12) Unscategorized strong resultative

Zhangsan xiao-wan-le yao.

Zhangsan laugh-bend-PERF waist

‘Zhangsan laughed and as a result his waist bent.’

(13) Categorized strong resultative

Zhangsan ti-fan-le zhuozi.

Zhangsan kick-topple.over-PERF table

‘Zhangsan kicked the table over.’

On the basis of the implicational hierarchy in (11), the availability of examples like (13) in Mandarin, in turn, predicts that categorized weak resultatives should also be grammatical. As shown in (14), this prediction is borne out as well.

(14) Categorized weak resultative

Zhangsan ca-ganjing-le zhuozi.

Zhangsan wipe-clean-PERF table

‘Zhangsan wiped the table clean.’

As for German, (15) shows that the language allows unscategorized strong resultatives. The implicational hierarchy in (11) predicts that German should allow categorized strong resultatives, and this is borne out by the fact that categorized strong resultatives like (16) are grammatical in the language. The implicational hierarchy in (11) also predicts that the availability of examples like (16) in German should entail the availability of categorized weak resultatives. As shown in (17), this prediction is also borne out.

(15) Unscategorized strong resultative

John aß den Teller leer.

John ate the plate empty

‘John ate the plate empty.’

(16) Subcategorized strong resultative

Sie hat die Tulpen platt gegossen.
 she has the tulips flat watered
 ‘She watered the tulips flat.’ (Kratzer 2005:187)

(17) Subcategorized weak resultative

John wischte den Tisch sauber.
 John wiped the table clean
 ‘John wiped the table clean.’

Moreover, the fact that some languages only allow subcategorized weak resultatives is consistent with the implicational hierarchy in (11). For example, as shown in (18-19), French and Korean only allow subcategorized weak resultatives (the (c) examples), and do not allow unsubcategorized strong resultatives (the (a) examples) or subcategorized strong resultatives (the (b) examples). This, however, is consistent with the implicational hierarchy in (11) because it is one-way and not bi-directional. In other words, (11) makes no prediction as to whether a language allows unsubcategorized and subcategorized strong resultatives if the language has subcategorized weak resultatives.

(18) French resultatives

- a. * Il a marché les jambes raides.
 he has walked the legs stiff
 Intended: ‘He walked his legs off (lit., stiff).’ (Washio 1997b:27, glosses added)
- b. * Jean a tiré sa cravate serrée.
 Jean has pulled his tie tight
 Intended: ‘Jean pulled his tie tight.’ (Washio 1997b:29, glosses added)
- c. Jean a coupé le pain en tranches.
 Jean has cut the bread in slices
 ‘Jean cut the bread into slices.’

(19) Korean resultatives

- a. * Kutul-nun kwutwu-patak-lul yalp-key talli-ess-ta.
 they-TOP shoe-soles-ACC thin run-PAST-DCL
 Intended: ‘They ran the soles of their shoes thin.’ (Washio 1999:682)
- b. * Mal-i thongnamwu-lul pantulpantulha-key kkul-ess-ta.
 horse-NOM log-ACC smooth drag-PAST-DCL
 Intended: ‘The horses dragged the logs smooth.’ (Washio 1999:684)

- c. Ku yeca-nun meli-lul ppalkah-key mwultuli-ess-ta.
 she-TOP hair-ACC red-COMP dye-PAST-DCL
 ‘She dyed her hair red.’ (Washio 1999:682) [*Ku* and *yeca* literally mean ‘this, that’ and ‘woman’ respectively.]

Note that the two facts discussed above, namely that no languages having subcategorized strong resultatives do not allow subcategorized weak resultatives and that no languages having unscategorized strong resultatives do not allow subcategorized strong resultatives, follow naturally out of the lexical-information account of the difference between the three types of resultatives mentioned in the previous section.

As discussed above, only results denoted by result predicates in subcategorized weak resultatives are a (further) specification of the change or direction of change entailed or lexically implied by the causing predicates. It is thus expected that it is easier to integrate the causing predicate and the result predicate in subcategorized weak resultatives than in subcategorized strong resultatives. That is, strong resultatives involve more practical reasoning and more pragmatic inference than subcategorized weak resultatives. Therefore, subcategorized weak resultatives are more available to the language user and to a human language than subcategorized and unscategorized strong resultatives. This explains why there is no language which has strong resultatives alone. Similarly, compared with unscategorized strong resultatives, subcategorized strong resultatives have a lexically subcategorized argument provided by the causing predicate and predicated of by the result component. As a result, in the integration of the causing predicate, the result predicate, and the participant that the result component is predicated of, subcategorized strong resultatives involve less practical reasoning and pragmatic inference than unscategorized strong resultatives and thus subcategorized strong resultatives are more available to the language user and to a human language than unscategorized strong resultatives. This accounts for why there is no language that has unscategorized strong resultatives but does not allow subcategorized strong resultatives or subcategorized weak resultatives.

As seen from the above, the three-way distinction between subcategorized weak resultatives, subcategorized strong resultatives, and unscategorized strong resultatives not only accounts for the gradience phenomenon found with English resultatives, but also accounts for the two implicational universals formulated with respect to these three types of resultatives. Now we turn to the question of whether the distinction has any bearing on the typologization of languages with respect to the resultative construction.

The three-way distinction leads to eight logical possibilities with respect to the typologization of languages according to the availability of the different types of resultatives, as shown in Table 8 below. Among the eight logical possibilities, four of them are unattested, and this is actually something predicted by the implicational hierarchy in (11). Specifically, according to (11), no languages should allow subcategorized strong resultatives **or** unclassified strong resultatives on the one hand but do not allow subcategorized weak resultatives on the other. Nor should there be languages that allow subcategorized **and** unclassified strong resultatives but do not allow subcategorized weak resultatives. Moreover, (11) predicts that no languages should allow subcategorized weak resultatives and unclassified strong resultatives but do not allow subcategorized strong resultatives.

Table 8. Typology of languages with respect to the three-way distinction of resultatives

Types	Examples
Languages which have <i>none</i> of the three types of resultatives ¹²	Javanese, Lingala
Languages which have <i>only Type A</i>	French (restricted), Korean, Romanian (restricted), Turkish
Languages which have <i>only Type B</i>	<u><i>Unattested</i></u>
Languages which have <i>only Type C</i>	<u><i>Unattested</i></u>
Languages which have <i>only Types A & B</i>	Japanese
Languages which have <i>only Types A & C</i>	<u><i>Unattested</i></u>
Languages which have <i>only Types B & C</i>	<u><i>Unattested</i></u>
Languages which have <i>all</i> the three types	Dutch, English, German, Mandarin, Norwegian, Swedish

(*Type A*=subcategorized weak resultatives; *Type B*=subcategorized strong resultatives; *Type C*=unclassified strong resultatives)

It should be pointed out that the languages in Table 8 were obtained from examples in the literature and/or from my own elicitation with native speakers (in the case of English, French, German, Japanese, Korean, Mandarin, Romanian, and Swedish). Among them, Dutch is based on Hoekstra (1988) and Kaufmann & Wunderlich (1998); Norwegian is based on Lødstrup (2000) and Dimitrova-Vulchanova

¹² Rapoport (1999:42) claims that “while depictives seem to be found in most languages, resultatives are found in relatively few.” If the latter part of the claim is correct, there should be numerous languages which have no resultatives. On the other hand, the languages which should be put in this category remain an empirical question. Obviously, when no resultatives are discussed in a grammar book of a certain language, one cannot simply take this to mean that no resultatives exist in this language.

(2003); German is based on my own elicitation and on Kaufmann (1995), Wunderlich (1997), Boas (2000, 2003), Müller (2002), and Kratzer (2005). All these languages allow all the three types of resultatives. Moreover, my own elicitation indicates that the same applies to Swedish, as shown in (20).

(20) Swedish resultatives

- a. John torkade bordet rent. (subcategorized weak)
 John wiped table.the clean
 ‘John wiped the table clean.’
- b. Hästen drog stockarna släta. (subcategorized strong)
 horse dragged logs smooth
 ‘The horse dragged the logs smooth.’
- c. John sprang trottoaren tunn. (unsubcategorized strong)
 John ran pavement.the thin
 ‘John ran the pavement thin.’

In addition, my own elicitation with respect to Romanian reveals that like French (see below), Romanian has only restricted weak PP resultatives, as shown in (21).¹³

(21) Romanian resultatives

- a. * Ion a alergat trotuarul subtire. (strong resultative)
 Ion has run sidewalk thin
 Intended: ‘Ion ran the pavement thin.’
- b. * Ion a șters masa curată (weak AP resultative)
 Ion has wiped table.the clean
 Intended: ‘Ion wiped the table clean.’
- c. Ion a spart vaza in bucati. (weak PP resultative)
 Ion has broken vase.the in pieces
 ‘Ion broke the vase into pieces.’

Moreover, according to Washio (1997a, 1999, 2002), Korean and Turkish have only weak resultatives as well.¹⁴ However, it should be added that weak resultatives in

¹³ Based on the examples cited by Snyder (1995a, 1995b, 2001), Washio (1997b), Hasegawa (1999), and Beck & Snyder (2001), Spanish can also be said to allow restricted weak PP resultatives alone. However, on the basis of Napoli’s (1992, 1999) studies, it seems that in contrast to resultatives in French, Romanian and Spanish, weak PP resultatives occur more freely in Italian, although Italian has no strong resultatives, either. In addition, although it seems that Italian allows AP resultatives in some special contexts (e.g. when the adjective is intensified), many AP resultatives cited by Napoli are in fact spurious resultatives in Washio’s (1997b) sense, as pointed out by Kaufmann & Wunderlich (1998:12).

Korean are less restricted than in French and Romanian in the sense that Korean allows both AP and PP resultatives. In addition, based on Snyder (2001), it seems that Javanese (an Austronesian language) and Lingala (a Bantu language) have no resultatives.

What is left in Table 8 is French and Japanese, whose classification in the table differs from Washio's. According to Washio (1999:686), languages are divided into three broad types—those which have both strong and weak resultatives (e.g. English), those which permit only weak resultatives (e.g. Japanese), and finally those which have neither strong nor weak resultatives (e.g. French).¹⁵ Note that Washio's typology is obtained on the basis of non-compound resultatives and in some cases on the basis of AP resultatives alone. However, based on the definition of the resultative construction in section 1, there is no good reason to exclude non-AP resultatives (e.g. PP resultatives like (22)) and compound resultatives. The result component of a resultative may simply come in different forms, and PP, AP, and V result expressions are just different ways of instantiating the result component of a resultative. Importantly, when non-AP resultatives are also taken into account, French and Japanese need a different classification than Washio's.

- (22) a. John cut the cake into small pieces.
 b. Ben swept the broom to pieces.

With respect to French, it actually has PP weak resultatives, although, as mentioned by Legendre (1997:46), the causing predicate is restricted to a small set of transitive verbs, which include *couper* 'cut' in (18c) above and *peindre* 'paint' in (23) below.

- (23) Jean a peint le mur en rouge.
 Jean has painted the wall in red
 'Jean painted the wall red.'

As for Japanese, the examples in (24) suggest that Japanese does not have strong resultatives, whilst those in (25) indicate that the language does have weak resultatives.

¹⁴ The data supplied by Meral (2005; p.c.) confirms Washio's classification of Turkish. Moreover, according to Hasan Mesut Meral (p.c.), Turkish only has AP resultatives. In this case, it differs from Korean in that the Korean language allows both AP and PP resultatives, although both languages have only weak resultatives.

¹⁵ Washio (1997b:30) is undecided on whether French has **transitive** weak resultatives. In addition, he does not discuss **unaccusative** resultatives in his (1997b) article.

- (24) a. * Uma-ga maruta-o subesube-ni hikizut-ta.
horse-NOM log-ACC smooth drag-PAST
‘The horses dragged the logs smooth.’ (Washio 1997b:6)
- b. * Takusan-no hikooki-ga ozonsoo-o usuku ton-da.
many-GEN plane-NOM ozone.layer-ACC thin fly-PAST
‘Many planes flew the ozone layer thin.’ (Washio 1997b:20)
- (25) a. John-ga kabe-o aoku nut-ta.
J.-NOM wall-ACC blue paint-PAST
‘John painted the wall blue.’ (Washio 1997b:2)
- b. Boku-wa aisū kuriimu-o katikati-ni koorase-ta.
I-TOP ice cream-ACC solid freeze-PAST
‘I froze the ice cream solid.’ (Washio 1997b:5)

However, when compound resultatives like (26) are also taken into account, it must be concluded that Japanese has both strong and weak resultatives, though no unsubcategory strong resultatives are attested. In the case of the two examples in (26), both are strong resultatives because in both examples the result component is not a (further) specification of the change or direction of change implied by the causing predicate. Although running and chasing arguably imply a change of location of those doing the running or chasing, being tired or bored, a resulting state, is obviously not a (further) specification of the implied change of location.¹⁶

- (26) a. John-ga hashiri-tsukare-ta.
John-NOM run-get.tired-PAST
‘John ran himself tired.’
- b. John-ga Bill-o oi-aki-ta.
John-NOM Bill-ACC chase-get.bored-PAST
‘John chased Bill and as a result John got bored.’

¹⁶ *Hashiru* ‘run’ and *ou* ‘chase’ change to *hashiri* and *oi* respectively when functioning as the causing component of the RVCs in (26). Moreover, with respect to (26b) it is worth pointing out that this Japanese example, unlike a similar Mandarin example in (i), is not ambiguous. The ambiguity of the Chinese example, a strong resultative too, and the unambiguity of (26b) do not follow from the distinction among subcategory weak resultatives, subcategory strong resultatives, and unsubcategory strong resultatives. Moreover, this distinction cannot account for the degree of difficulty in obtaining the three readings associated with the Mandarin example. See Li (2008), however, for an account of the different readings of (i) and the difference between (26b) and (i) in the availability of different interpretations.

- (i) Zhangsan zhui-lei-le Lisi.
Zhangsan chase-tired-PERF Lisi.
(a) ‘Zhangsan chased Lisi and as a result Lisi got tired.’ (easiest)
(b) ‘Zhangsan chased Lisi and as a result Zhangsan got tired.’
(c) ‘Lisi chased Zhangsan and Zhangsan got Lisi tired.’ (hardest)

The case of Japanese is significant because it offers further support for the three-way distinction of resultatives. In fact, the finding of Japanese as a language that does not allow unsubcategoryed resultatives but allows subcategoryed weak and subcategoryed strong resultatives is a significant gain of this fine-grained typology. In this regard, the classification of Japanese as a language that allows subcategoryed weak resultatives and subcategoryed strong resultatives but does not allow uncategoryed strong resultatives shows that it might have been an unwise move for Washio (2002) to collapse subcategoryed strong resultatives and “intransitive resultatives” like (2a) and (20c), which, according to Washio (2002:374), are “nothing but a special case of Strong resultatives.” In this case, it should be pointed out that the motivation for Washio’s collapsing uncategoryed and subcategoryed strong resultatives is that he finds no language that allows one but disallows the other (see Washio 2002). The significance of Japanese, in this case, lies in the fact that it shows that actually there are languages that allow subcategoryed weak and subcategoryed strong resultatives but do not allow uncategoryed strong resultatives.

4. Summary and conclusions

This paper explicates the distinction between strong and weak resultatives originally made by Washio (1997a, 1997b, 1999, 2002). More importantly, the paper, through a questionnaire study, provides statistical evidence for the three-way distinction of resultatives made in Li (2008). In addition, it shows that native English speakers’ judgments with respect to the distinctions between strong and weak resultatives and between subcategoryed and uncategoryed resultatives are also statistically significant.

On the basis of the degree of difficulty in integrating the causing predicate, the result predicate, and the participant that the result component is predicated of, the paper also offers an account of why subcategoryed weak resultatives are more acceptable than subcategoryed strong resultatives and why subcategoryed strong resultatives are more acceptable than uncategoryed strong resultatives. On this account, subcategoryed weak resultatives are the easiest to accept because they involve the least processing effort in integrating the causing component, the result component, and the entity undergoing a change as a result of what is denoted by the causing predicate. Specifically, in the case of subcategoryed weak resultatives the participant being predicated of by the result component is subcategoryed for by the causing predicate. Moreover, the result denoted by the result predicate in this case is a (further) specification of the change or direction of change entailed or implied by the causing predicate. Uncategoryed strong resultatives, on this account, are the most

difficult to accept because the entity undergoing the change is not subcategorized for by the causing predicate. Moreover, the result denoted by the result component in this case is not a specification of the change or direction of change, if any, entailed or implied by the causing predicate. This makes unscategorized strong resultatives involve the most processing effort in integrating the causing component, the result component, and the entity undergoing a change as a result of what is denoted by the causing predicate. As a result, unscategorized strong resultatives are the hardest to process and the most difficult to accept. As for categorized strong resultatives, it is something in between categorized weak resultatives and unscategorized strong resultatives because, although in this case the entity undergoing the change is categorized for by the causing predicate, the result denoted by the result component is not a specification of the change or direction of change, if any, entailed or implied by the causing predicate. As a result, categorized strong resultatives are easier to process and accept than unscategorized strong resultatives but are more difficult to process and accept than categorized weak resultatives.

The questionnaire study conducted also provides important evidence for Li's (2008) formulation of the implicational hierarchy with respect to the resultative construction. In addition, the explanation offered above as to native English speakers' acceptability judgments of the three types of resultatives can be extended to account for the two implicational universals that follow from the implicational hierarchy.

Finally, the paper entertains the possibility of typologizing languages with respect to resultative formation on the basis of the three-way distinction of resultatives. It points out that the finding of Japanese as a language that does not allow unscategorized strong resultatives but allows categorized weak resultatives and categorized strong resultatives is one significant result of this fine-grained typology.

References

- Beck, Sigrid, and William Snyder. 2001. The resultative parameter and restitutive again. *Audiatur Vox Sapientiae: A Festschrift for Arnim von Stechow*, ed. by Caroline Féry and Wolfgang Sternefeld, 48-69. Berlin: Akademie Verlag.
- Boas, Hans C. 2000. Resultative Constructions in English and German. Doctoral dissertation, University of North Carolina at Chapel Hill, Chapel Hill.
- Boas, Hans C. 2003. *A Constructional Approach to Resultatives*. Stanford, CA: CSLI Publications.

- Boas, Hans C. 2005. Determining the productivity of resultatives: A reply to Goldberg and Jackendoff. *Language* 81:448-464.
- Carrier, Jill, and Janet H. Randall. 1992. The argument structure and syntactic structure of resultatives. *Linguistic Inquiry* 23:173-234.
- Dimitrova-Vulchanova, Mila. 2003. On two types of result: Resultatives revisited. *Proceedings of TROSS 03*, ed. by Dorothee Beermann and Lars Hellan. Retrieved June 10, 2013, from <http://edvarda.hf.ntnu.no/ling/tross/vulchanova.pdf>.
- Dowty, David R. 1979. *Word Meaning and Montague Grammar: The Semantics of Verbs and Times in Generative Semantics and in Montague's PTQ*. Dordrecht: Reidel.
- Goldberg, Adele E. 1995. *Constructions: A Construction Grammar Approach to Argument Structure*. Chicago & London: University of Chicago Press.
- Goldberg, Adele E., and Ray Jackendoff. 2004. The English resultatives as a family of constructions. *Language* 80:532-568.
- Goldberg, Adele E., and Ray Jackendoff. 2005. The end result(ative). *Language* 81:474-477.
- Hasegawa, Nobuko. 1999. The syntax of resultatives. *Linguistics: In Search of the Human Mind: A Festschrift for Kazuko Inoue*, ed. by Masatake Muraki and Iwamoto Enoch, 178-208. Tokyo: Kaitakusha.
- Higginbotham, James. 2009. *Tense, Aspect, and Indexicality*. Oxford: Oxford University Press.
- Hoekstra, Teun. 1988. Small clause results. *Lingua* 74:101-137.
- Jackendoff, Ray. 1990. *Semantic Structures*. Cambridge, MA: MIT Press.
- Jaxontov, Sergej Je. 1988. Resultative in Chinese. *Typology of Resultative Constructions*, ed. by Vladimir P. Nedjalkov, 113-133. Amsterdam/Philadelphia: John Benjamins.
- Kaufmann, Ingrid. 1995. O- and D-predicates: A semantic approach to the unergative-unaccusative distinction. *Journal of Semantics* 12:377-427.
- Kaufmann, Ingrid, and Dieter Wunderlich. 1998. Cross-linguistic patterns of resultatives. *Theorie des Lexikons. Arbeiten des Sonderforschungsbereichs* 282. No. 109. Düsseldorf: Heinrich-Heine-Universität.
- Kim, Soowon, and Joan Maling. 1997. A crosslinguistic perspective on resultative formation. *Texas Linguistics Forum* 38:189-204.
- Kratzer, Angelika. 2005. Building resultatives. *Event Arguments: Foundations and Applications*, ed. by Claudia Maienborn and Angelika Wöllstein, 177-212. Tübingen: Max Niemeyer.
- Legendre, Géraldine. 1997. Secondary predication and functional projections in French. *Natural Language and Linguistic Theory* 15:43-87.

- Levin, Beth, and Malka Rappaport Hovav. 1995. *Unaccusativity: At the Syntax-Lexical Semantics Interface*. Cambridge, MA: MIT Press.
- Levin, Beth, and Malka Rappaport Hovav. 2004. The semantic determinants of argument expression: A view from the English resultative construction. *The Syntax of Time*, ed. by Jacqueline Guéron and Jacqueline Lecarme, 478-494. Cambridge & London: MIT Press.
- Li, Chao. 2008. *Mandarin Resultative Verb Compounds: Where Syntax, Semantics, and Pragmatics Meet*. München: Lincom Europa.
- Li, Chao. 2009. On the “scare reading” of resultatives. *Language Sciences* 31:389-408.
- Lødrup, Helge. 2000. Underspecification in Lexical Mapping Theory: The case of Norwegian existentials and resultatives. *Argument Realization*, ed. by Miriam Butt and Tracy Holloway King, 171-188. Stanford, CA: CSLI Publications.
- Meral, H. Mesut. 2005. Resultatives in Turkish. *Proceedings of the 3rd Athens Postgraduate Conference in Linguistics*, ed. by Nikolaos Lavidas, Elissavet Nouchoutidou, and Marietta Sionti. Retrieved October 8, 2013, from <https://sites.google.com/site/athenspostgraduateconference/3thAPC>.
- Müller, Stefan. 2002. *Complex Predicates: Verbal Complexes, Resultative Constructions, and Particle Verbs in German*. Stanford, CA: CSLI Publications.
- Napoli, Donna Jo. 1992. Secondary resultative predicates in Italian. *Journal of Linguistics* 28:53-90.
- Napoli, Donna Jo. 1999. Resultatives. *Concise Encyclopedia of Grammatical Categories*, ed. by Keith Brown and Jim Miller, 324-329. Oxford: Elsevier Science.
- Nedjalkov, Vladimir P. (ed.). 1988. *Typology of Resultative Constructions* (The English translation edited by Bernard Comrie). Amsterdam/Philadelphia: John Benjamins.
- Nedjalkov, Vladimir P., and Sergej Je. Jaxontov. 1988. The typology of resultative constructions. *Typology of Resultative Constructions*, ed. by Vladimir P. Nedjalkov, 3-61. Amsterdam/Philadelphia: John Benjamins.
- Okamoto, Junji. 1998. Comments on the notion of “strong and weak resultatives” in Washio (1997). *Gengo-no Fuhensei to Kobetsusei Nikansuru Kijutsuteki-Rironteki Sougoukenkyu [Descriptive and Theoretical Investigations into Language Universality and Particularity]*, 63-80. Tsukuba: University of Tsukuba. Retrieved January 17, 2014, from <http://www-cc.gakushuin.ac.jp/~20050003/m-pub.html>.
- Randall, Janet H. 1982. A lexical approach to causatives. *Journal of Linguistic Research* 2.3:77-105.

- Rapoport, Tova R. 1999. Structure, aspect, and the predicate. *Language* 75:653-677.
- Rappaport Hovav, Malka, and Beth Levin. 1996. Two types of derived accomplishments. *Proceedings of the First LFG Workshop*, ed. by Miriam Butt and Tracy H. King. Retrieved June 22, 2013, from <http://csli-publications.stanford.edu/LFG/1/toc-lfg1.html>.
- Rappaport Hovav, Malka, and Beth Levin. 2001. An event structure account of English resultatives. *Language* 77:766-797.
- Simpson, Jane. 1983. Resultatives. *Papers in Lexical-Functional Grammar*, ed. by Lori Levin, Malka Rappaport and Annie Zaenen, 143-157. Bloomington, IN: Indiana University Linguistics Club.
- Snyder, William. 1995a. A neo-Davidsonian approach to resultatives, particles, and datives. *Proceedings of the North East Linguistic Society 25*, Vol. 1, ed. by Jill N. Beckman, 457-471. Amherst, MA: GLSA.
- Snyder, William. 1995b. *Language Acquisition and Language Variation: The Role of Morphology*. Doctoral dissertation, MIT, Cambridge.
- Snyder, William. 2001. On the nature of syntactic variation: Evidence from complex predicates and complex word-formation. *Language* 77:324-342.
- Thepkanjana, Kingarn, and Satoshi Uehara. 2009. Resultative constructions with “implied-result” and “entailed-result” verbs in Thai and English: A contrastive study. *Linguistics* 47:589-618.
- Vanden Wyngaerd, Guido. 2001. Measuring events. *Language* 77:61-90.
- Vendler, Zeno. 1957. Verbs and times. *The Philosophical Review* 66:143-160.
- Washio, Ryuichi. 1997a. Remarks on Korean resultatives. *Researching and Verifying an Advanced Theory of Human Language: COE Research Report 1*, 221-254. Makuhari: Kanda University of International Studies.
- Washio, Ryuichi. 1997b. Resultatives, compositionality and language variation. *Journal of East Asian Linguistics* 6:1-49.
- Washio, Ryuichi, 1999. Some comparative notes on resultatives. *Linguistics: In Search of the Human Mind, A Festschrift for Kazuko Inoue*, ed. by Masatake Muraki and Enoch Iwamoto, 674-707. Tokyo: Kaitakusha.
- Washio, Ryuichi. 2002. Some typological implications of Mongolian resultatives. *English Linguistics* 19:366-391.
- Wechsler, Stephen. 1997. Resultative predicates and control. *Texas Linguistic Forum* 38:307-321.
- Wechsler, Stephen. 2005. Resultatives under the “event-argument homomorphism” model of telicity. *The Syntax of Aspect: Deriving Thematic and Aspectual Interpretation*, ed. by Nomi Erteschik-Shir and Tova Rapoport, 255-273. Oxford: Oxford University Press.

Wunderlich, Dieter. 1997. Argument extension by lexical adjunction. *Journal of Semantics* 14:95-142.

[Received April 4, 2014; revised July 31, 2014; accepted November 27, 2014]

Department of World Languages and Literatures
College of Staten Island, The City University of New York
Staten Island, U.S.A.
Chao Li: chao.li@csi.cuny.edu

英語動結式的三分法及其類型學意義

李朝

紐約市立大學史坦頓島學院

通過對英語動結式的問卷調查研究，本文對把動結式歸為三類的分法提供了統計方面的證據。這三類分別是次語類化的弱動結式、次語類化的強動結式和非次語類化的強動結式。本文指出，以英語為母語的成年人之所以對這三類動結式的接受度表現出差異，原因在於使役成分、結果成分及結果成分所表述的對象這三種成分的整合難易程度。這一分析也可以用來解釋有關動結式的兩個蘊含共性。此外，本文還考察了憑藉動結式的三分法來對語言進行更為細緻分類的可能性。文章指出，這一細分法的一個重要發現是，有的語言，如日語，雖然有次語類化的弱動結式和次語類化的強動結式，但沒有非次語類化的強動結式。

關鍵詞：強動結式、弱動結式、次語類化、蘊含共性、動結結構、類型學