

Pragmatics and the Resultative Construction: A Case Study

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► Key Words

pragmatics,
resultative construction,
open/shut

Summary:

This paper deals with rather unusual resultative sentences that haven't been given much serious thinking. The verb *freeze* contains "becoming solid" as part of its meaning, which makes it possible for the adjective *solid* to appear as the RP (resultative phrase) of a resultative sentence with *freeze*. But there are some examples where *shut* rather than *solid* acts as the RP for *freeze*. I give a pragmatic account of the connection between *freeze-solid* and *freeze-shut* in terms of the Bi-directional OT (optimality theory) as developed by Blutner et al. (2006), and the success of this account shows the relevance of pragmatics to the question of RP-selection in resultative sentences.*

1 . A Wayward Example

Resultative construction has been a focus of much debate over the last two decades, and its analyses are either based on event (or aspectual) structure or on construction grammar. But there are some examples that either camp has not touched on. One such example is where you see as the resultative phrase an adjective that's rather unexpected given the meaning of the verb (and its object). (Henceforward, I shall refer to the resultative phrase as the RP.) I would like to

illustrate this by quoting a passage from Rothstein (2004), which initially sparked my interest in the relation between the verb and the RP. As you can see from the quote in (2), (1a) is acceptable because we can easily imagine a situation where singing is connected incrementally to the baby getting to sleep. But (1b) is not acceptable because it is difficult to imagine such an incremental relation between Mary's eating and the baby's becoming asleep. However, if one could provide (1b) with a context where eating is necessary for the baby to get to sleep, it should be acceptable.

(1) a. Mary sang the baby asleep.

b. #Mary ate the baby asleep. (Rothstein 2004: 111)

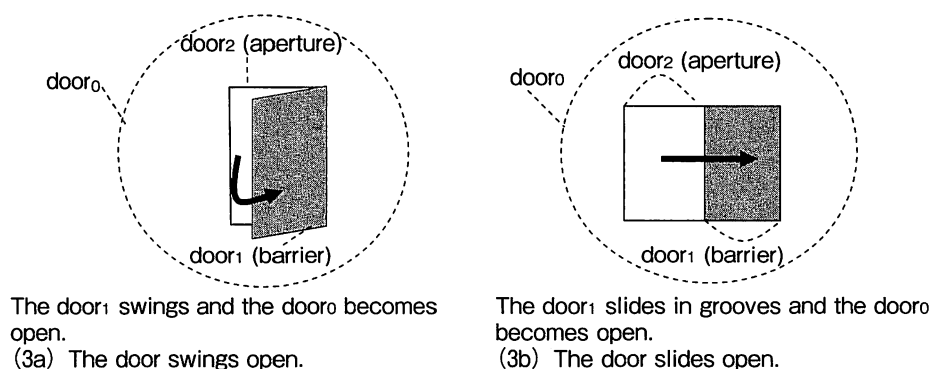
(2) [1a] is considered acceptable by most native speakers because the contextual relation between singing and a baby becoming asleep is easily recognized, and it is thus easy to “measure” or “structure” the progress of a singing activity in terms of an incremental process of a baby falling asleep. In contrast, [1b] is generally considered infelicitous, because such a contextual relation is not available. However, suppose I provide one. (...) (Rothstein 2004: 111)

The aim of this paper is, then, to give some substance to this view of the pragmatics of RP licensing. Obviously, I can't deal with all types of resultatives, so let me concentrate on rather a small number of samples here.

2. Iwata (2008) : *Open/shut* and the Resultative

Iwata (2008) argues that sentences with *open* or *shut* as their RPs must be treated rather differently from ordinary resultative sentences.

Figure 1 (Iwata 2008)



(Iwata 2008 : 1055-6)

Iwata maintains that the verbs that go with *open* or *shut* must encode the manner or path of an internal motion. As you can see in Figure 1, *swing* denotes a motion where the door1 moves on

its hinges. So the door itself, that is, door₀ in the figure, doesn't move to some place, but stays at the same place. It's only part of the door, door₁, that moves. Iwata calls this motion of the door, "internal motion". The same goes for *slide*. And he also says that, since the verb encodes a change of state through an internal motion, the RP *open* or *shut* only further specifies the meaning of change already entailed by the verb *swing* or *slide*. Iwata points out that this is quite similar to the *freeze-solid* pattern in (4).

(4) The river froze solid.

It is well known that *freeze* entails the resultant state of something being solid. This is attested in the entry for *freeze* in a dictionary, as in (5).

(5) if a liquid or something wet freezes or is frozen, it becomes hard and solid because the temperature is very low. (LDOCE⁵)

Therefore, *solid* in *The river froze solid* in (4) further specifies the change already entailed by *freeze*, and this is similar to *open* in (3), which further specifies the motion already entailed by *swing* or *slide*. Thus, he contends, the *swing-open* pattern and the *freeze-solid* pattern must be analyzed similarly. He does this by fusing the construction for the verb with the construction for the RP, in the spirit of Goldberg's Construction Grammar.

3. *Freeze/melt and Shut*

In this connection, it would be interesting to note the example in (6), taken from a short story by Wallace Stegner.

(6) His eyes were full of water and he wiped them free, terrified that they would freeze shut. (W. Stegner, *Collected Stories*.)

We can easily understand the situation described by this sentence, and the internal motion denoted by the RP *shut* is indeed the motion of his eyelids. But, in (5), the meaning of the verb *freeze* doesn't entail an internal motion. Therefore, the RP *shut* can't be further specifying the verb. In (7), taken from *The Guardian*, the car locks were frozen and the motorists had to call AAA for help. Of course we accept that door locks allow for some internal motion because they metonymically refer to the doors of the cars. Doors do involve an internal motion. But we don't normally think of *shut* as further specifying *freeze*.

(7) In central Pennsylvania, AAA fielded a spike in calls from motorists whose batteries went dead or door locks froze shut. Wind chills were as low as 25 degrees below zero in

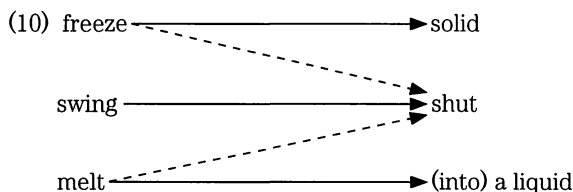
(Jay Reeves, "Big Chill: Blast of Arctic air stuns eastern US", Saturday January 17, 2009 10:01 AM, at: <http://www.guardian.co.uk/uslatest/story/0,,8275179,00.html>)

I have also collected some examples with the *melted-shut* pattern.

- (http://www.marine-corps-news.com/2005/06/healing_by_degrees_troops_burn.htm)

- (<http://www.urbanwildlifesociety.org/UWS/ExploFallout.html>)

From these examples, we see that the following pairs of the verbs and the RPs are possible.



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4. Rappaport-Hovav 2008: Scalar Verbs vs. Non-scalar Verbs

How can we characterize this strong connection between *freeze* and *solid*? You can set up a construction, but here, I would like to suggest another possible solution. I use the idea in Rappaport-Hovav (2008: 22), that verbs can be classified into “scalar verbs” and “non-scalar verbs”. Verbs that contain a scale as part of their lexical make-up are scalar verbs, and verbs that don’t contain a scale are non-scalar verbs. Verbs like *widen* and *dim* are scalar verbs, since they lexically specify scales of width and dimness, but verbs like *play* and *cry* do not lexically specify a scale, so they are not scalar verbs. Rappaport-Hovav says that non-scalar verbs can occur with a variety of RPs, as in (11).

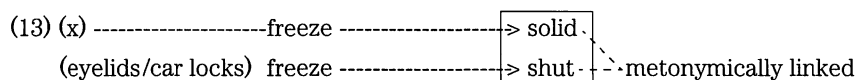
- (11) a. We steamed the clothes {dry / clean / stiff}.
 b. Cinderella scrubbed {her knees sore / the dirt off the table / the table clean}.
 (Rappaport-Hovav 2008: 22)

But scalar verbs occur with a very limited range of RPs. This is because, with scalar verbs, the RP must further specify the scale contained in the verb. For example, with (12a), the verb *freeze* contains a scale of decreasing temperature, so the RP must specify what happens to the ice-cream when the temperature goes down. *Solid* specifies the state of the ice-cream when one freezes it, so it appears as the RP. Examples (12b) and (12c) are explained similarly. But (12d) is not a possible combination because the verb *dim* does not lexically specify a scale that includes emptiness.

- (12) a. We froze the ice-cream solid.
 b. The walnut broke apart.
 c. The chocolate melted into a messy goo.
 d. *We dimmed the room empty. (Rappaport-Hovav 2008: 23)

I’d suggest that this entailed scale in the verb must have something to do with the strength of the connection that I feel between *freeze* and *solid*. That is, verbs with a lexically specified scale are more closely connected to their RPs specifying that scale than verbs without a scale.

Coming back to *freeze shut*, I’d suggest that *shut* is licensed because it is metonymically connected to *solid*. Consider the diagram in (13).¹



As the freezing goes on, whatever is frozen becomes solid. And, with eyelids and car locks, freezing shut is metonymically related to freezing solid. Note that these two states must be

somehow temporally co-extensive. The lexically specified scale of *freeze* must have the solid state at some point in the scale, and the shut state must obtain at the same point too to be metonymically linked. Thus, the solid state and the shut state must obtain at the same time.

I suppose I have to make clear exactly how *solid* and *shut* are metonymically linked. A tentative answer to that would be, freezing solid and freezing shut form a so-called Horn scale. When you hear that someone's eyelids froze solid, you can't infer that they must have frozen shut too – obviously, his eyes could have been open, half open, or shut when they froze. But if his eyelids froze shut, they must have been frozen solid. Also, if something freezes solid, something has frozen. Thus, one can set up an inferential connection like (14).²

(14) $x \text{ freeze-shut} \rightarrow x \text{ freeze-solid} \rightarrow x \text{ freeze}$ (x=eyelids, car locks, etc.)

And it would be a simple step to form a Horn scale out of this series of entailments between predicates. *Freeze-shut* is the strongest predicate of the three, *freeze-solid* is in the middle, and simple *freeze* is the weakest.

(15) <freeze-shut, freeze-solid, freeze>

Suppose we do have a Horn scale like (15). Then, by classical scalar implicature, saying something froze solid entails that it froze and implicates that it hasn't frozen shut, as desired. And saying your eyelids froze shut entails that they froze solid.

Thus, I'd suggest that the RPs that are metonymically linked can form a Horn-scale such that freezing shut always entails freezing solid.

5. Bi-directional Optimality Theoretic Approach to Pragmatics

The derivation of the interpretation for *freeze shut* through scalar implicature can be given a more advanced representation by way of Blutner's Bi-directional Optimality Theoretic approach to pragmatic inference (cf. Blutner *et al.* 2006). Blutner takes as his starting point the difference in meaning between the two causative sentences, as illustrated in (16).

- (16) a. Black Bart killed the sheriff. [direct causation]
 b. Black Bart caused the sheriff to die. [indirect causation]

(16a) encodes direct causation between Black Bart's action and the resultant death of the sheriff, while (16b) encodes indirect causation between them. In the Bi-directional approach, the relation between the complexity of the expression and the complexity of the meaning are given by the two pragmatic principles, Q-principle and I-principle, in (17). Consider (18). Given the four form-meaning pairs, the Q- and I-principles compute the best possible pairs as optimal. The

pairing of freezing and the change of state from liquid to solid in [18a] is optimal, and the pairing of freezing plus an RP and the change of state from liquid to solid plus something else (here represented as “a”) in [18d] is also optimal. The other form-meaning pairs, [18b] and [18c], are not optimal, and thus will not show up.

(17) Bi-directional Optimality Theoretic Approach (Simplified) (cf. Blutner et al. 2006)

A form-meaning pair $\langle f, m \rangle$ is called optimal if and only if:

Q: There is no distinct pair $\langle f', m \rangle$ such that $\langle f', m \rangle$ is more efficient than $\langle f, m \rangle$ and $\langle f', m \rangle$ satisfies I.

I: There is no distinct pair $\langle f, m' \rangle$ such that $\langle f, m' \rangle$ is more efficient than $\langle f, m \rangle$ and $\langle f, m' \rangle$ satisfies Q.

(18)

	m = change of state	m' = change of state + a
f = freeze	[a] $\langle f, m \rangle$ ← (freeze, liquid → solid)	[c] $\langle f, m' \rangle$ ← (freeze, liquid → solid + a)
f' = freeze-RP	[b] $\langle f', m \rangle$ ← (freeze-RP, liquid → solid)	[d] $\langle f', m' \rangle$ ← (freeze-RP, liquid → solid + a)

Yusuke Yoshikawa (personal communication) told me that his native informants said that you didn't really need *solid* in the sentence *The river froze solid*. This is presumably because *solid* only further specifies what's already contained in *freeze*, so the information contained in the RP is felt to be redundant. This is precisely what many scholars, including Iwata, tell us. But the further specification must contain some further information. Otherwise, the information contained in the RP is simply redundant and so shouldn't become manifest at all. And that's why I assigned a more complex meaning to the resultative pattern. Even if it is true that *freeze* lexically specifies the resultant state of solidness, the occurrence of *solid* as the RP must somehow contribute to the overall meaning of the sentence. That contribution is represented by “a” in (18m). Thus, *shut* in *Car locks froze shut* contributes the information that can be inferred from the combination of car locks and freezing. In this way, the RP *shut* becomes part of the scale lexically specified by the verb *freeze*.

6. A Possible Explanation?

Actually, what (18) says is simply that the more complex meaning is associated with the more complex form. But it accords well with the oft-cited rhetorical flavour attendant on the use of

resultative sentences. Going back to the first example that we started out with, repeated as (19), we could assign an interpretation to this sentence by giving some substance to the incremental scale specified by *eat*.

(19) #Mary ate the baby asleep. (Rothstein 2004)

Here, if eating food and baby getting to sleep are somehow incrementally connected to the scale entailed by the implicit object of *eat*, the RP *asleep* is licensed. Through such an incremental connection, eating and getting to sleep are metonymically linked in this context. This is in accordance with what Bi-directional OT dictates: (19) gets an interpretation that's more than just a composition of eating and sleeping. To license an RP that isn't lexically specified by a scalar verb, you always need a bit more information. In this case, Mary's eating food must be somehow necessitated to bring about the baby's sleep.

7. Conclusion

In this paper, we saw that some wayward examples of resultative sentences such as *Car locks froze shut* and *The cab door had melted shut* could be given a pragmatic account by way of a ranked scale of predicates. I have also suggested that an example that can be contextually sanctioned, such as *Mary ate the baby asleep*, might also be given a pragmatic account along similar lines.

* This is a version of my talk at the 2nd International Spring Forum of the English Linguistics Society of Japan, held at Nara Women's University on 25-26 April 2009. I would like to thank Professor Ken Sugayama for chairing the workshop on resultative construction, and Mr Joe Morita and Dr Hiroyuki Takagi for their encouraging comments on an earlier version of this paper, and Mr Yusuke Yoshikawa for his insights and suggestions. I would also like to thank Professor Seiji Uchida and his team at Nara Women's University for their successful organization of the forum.

Notes:

1. One might ask what is the "metonymic" connection between *solid* and *shut*. The only connection suggested here is a temporal one, and this allows a far greater range of predicates to come as RPs. But there might be a more causal element in the relation: obviously, freezing shut do not cause freezing solid, but if locks do not freeze solid, then they do not freeze shut. This kind of unilateral relation is not simply temporal. Further work might be needed to elucidate what's going on here.
2. This is not the same as causal chain as developed by William Croft (see Levin and Rappaport-Hovav (2005: 117ff) for an overview of his ideas), although you might still say that "solid → shut" forms a sort of causal chain.

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