Secondary Predicates Stacked*
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1.

Recursivity is one of the most interesting and crucial devices that natural language is equipped with, which typically manifests itself in the form of one predicate being embedded into a constituent that is headed by another. One of the structures which have this form is that which involves what is called a secondary predicate; secondary predicates go by the name because they are predicated of an argument that the matrix verb selects. In what follows, I do not go into various facets of secondary predicates; or rather assuming their general knowledge, I restrict my attention to the examples in which multiple occurrences of secondary predicates are observed.

2.

I begin by examining those which have the form of "V OBJ $RESULT_1$ $RESULT_2$", and the condition that Goldberg (1991, 1995) proposed to account for related issues. For illustration, consider the following examples, which are drawn from Goldberg (1991:371) :

(1) a.   He nailed the door closed shut.
    b.   He washed his face shiny clean.
    c.   He made her worried sick.

Goldberg (1991:370) states "that if one of the resultatives is understood to be a further specification of the other, two resultatives can co-occur. In this case one serves to modify the other and together they form a single constituent." The question that immediately arises is, What is meant by speaking of "a single constituent"? Or, more specifically, what configurations is it that these two resultative phrases, in conjunction with the matrix verb, make? Begging the reader's pardon, I put off the task of answering the question for the time being, and instead consider a related one, which would be of much help when we return to the first. Notice that with respect to the idea of one resultative being "a further specification of the other", the following examples given in Goldberg (1991:370) make a clear contrast with the examples in (1):

(2) a.   * She kicked him bloody dead.
    b.   * He wiped the table dry clean.

As Goldberg argues, they are ruled out on the grounds that the two resultatives designate two distinct changes of state. She further attributes the contrast in

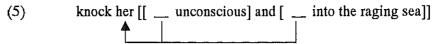acceptability between these two sets of examples to the following constraint:

(3)   *Unique Path (UP) Constraint*:   If an argument X refers to a physical object, then no more than one distinct path can be predicated of X within a single clause.   The notion of a single path entails two things: (1) X cannot be predicated to move to two distinct locations at any given time t, and (2) the motion must trace a path within a single landscape.   (Goldberg 1995:82)

The UP constraint is relevant since resultatives are understood as coding a metaphorical change of location.   She argues that the metaphor at work here is a general one that involves understanding a change of state in terms of movement to a new location.
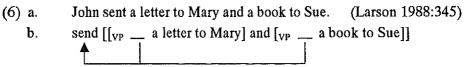
In this connection, of note is the following example, which has a resultative and a directional expression conjoined:

(4)   The boom swings over Joe and slams into Patricia, knocking her unconscious and into the raging sea.   (J. P. Shanley, *Joe versus the Volcano*)

Such conjunction would make the sentence deviant if each of the conjoined phrases could not express a change of location, literally or metaphorically.   This example serves as further evidence for Goldberg's claim that resultatives express a metaphorical change of location.   One might wonder, however, whether the so called Across-the-Board (ATB) kind of extraction (Ross 1986) is involved in the example in (4).   Applying this mechanism to the example in (4) would yield the following structure:

(5)   knock her [[__ unconscious] and [__ into the raging sea]]

In (5) it is the two constituents each of which contains both one of these phrases and a NP that is predicated by this that are conjoined, but not the two phrases themselves.   With this analysis, the example in (4) would not support the idea that resultatives can designate a metaphorical change of location.   The structure in (5), however, does not represent the structure that would express the meaning which the example in (4) conveys.   For comparison, consider the example in (6a), which is considered to have the structure shown in (6b):

(6) a.   John sent a letter to Mary and a book to Sue.   (Larson 1988:345)

    b.   send [[$_{VP}$ __ a letter to Mary] and [$_{VP}$ __ a book to Sue]]

Crucially, by virtue of the ATB extraction, each of (5) and (6b) is taken to be having

two constituents that refer to distinct events conjoined.[1]   In the case of (6b), conjunction of this kind gives us the correct interpretation: the example in (6a) does not refer to a single event in which John sent two items to two goals, or rather it describes two distinct events, in each of which he sent a particular item to its designated goal.   By contrast, the example in (4) does not have two distinct events, since the boom, a single entity, cannot affect Patricia, another single entity, more than one way at a given time.   Thus, (5) cannot be taken as an appropriate representation for (4).   I conclude that the example in (4) involves simple conjunction of the two phrases in question, as shown in (7):

(7)   knock her [[unconscious] and [into the raging sea]]

The conjoined phrases, which designate a single event consisting of two subevents, work as a secondary predicate with respect to the matrix verb.[2]

The UP constraint plays a minor but critical role, when we interpret examples like (4), and the same is true of the following examples, which have two resultatives or directionals conjoined:

(8) a.   Natural law limits the quality of technology, but within these limits we will use replicating assemblers to produce superior spacecraft. With them, we will open space wide and deep.   (K. E. Drexler, *Engines of Creation: The Coming Era of Nanotechnology*)

    b.   A loud crack filled the air and the smell of sulfur and gunpowder filled my nose.   Suddenly my chest caved in with such force it knocked me back and to the ground.   (Nomad, *Hell*)
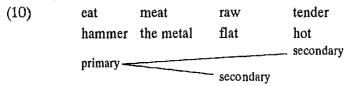
It should be noted that at least, the UP constraint forces the conjoined phrases into being understood as referring to a single event; otherwise, these sentences would be either deviant or, to avoid violating the constraint, interpreted as involving the structure that would have been generated by the ATB extraction, which does not represent their appropriate interpretation.
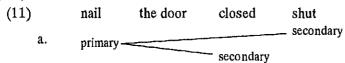

3.

Let us proceed to examine other types of examples with more than one secondary predicate.   They have no conjunct, and thus look more like the examples in (1).   Here, I refer to two observations made in Tenny (1994:154):   one shows that there may appear several depictives per sentence:

(9) a.   They eat meat raw, tender.

The other is that one sentence can have a resultative and a depictive expression simultaneously, and that in this order:[3]

(9) b.   We hammered the metal flat hot.

These examples make it clear that details aside, the matrix verb can have two secondary predicates, so long as they are not in violation of the UP constraint. The point is that, as Goldberg (1991:370) states, depictives do not designate a change of location and are immune from the UP constraint. Abstracting away the depictive/resultative distinction, the relevant part of their structure is analyzed as in the following:

(10)   eat   meat   raw   tender

                hammer the metal flat   hot

                                       ——— secondary

                primary ⸤‾‾‾‾‾‾‾‾‾‾‾‾‾‾

                              secondary

In (10) the first and the second secondary predicate respectively work as a secondary predicate in relation to the matrix verb, and thus they compose, say, two primary-secondary relations.[4] These examples do not violate the UP constraint, since they do not have more than one resultative or directional expression. When it comes to the examples in (1), on the other hand, the UP constraint prevents the two resultative expressions from entering into a primary-secondary relation with the matrix verb, respectively. For instance, the example in (1a) cannot be analyzed as in (11a):

(11)   nail   the door closed   shut

a.   ——— secondary

                primary ⸤‾‾‾‾‾‾‾‾‾‾‾‾‾‾

                              secondary

Or rather, I consider that only the first resultative expression functions as a secondary predicate in relation to the matrix verb, with the second resultative entering into a primary-secondary relation with the first, as shown in the following analysis:

(11)   nail   the door closed   shut

                primary————————secondary

b.

                             primary————secondary

The point is that the second resultative phrase is qualified as a secondary predicate by virtue of its being in such a relation with the first. In other words, the two primary-secondary relations are not holding in the same clausal domain: the clause with one of them is embedded within that which contains the other.

    With (1a) and (1c) this idea gives rise to little difficulty, since the first resultative is a form of verb (past participle), which itself can accommodate a resultative phrase, as shown in (12):

(12) a.   Sidney moves to the back door and closes it shut, when from

behind ...   (K. Williamson, *Scream*)

b.　It is a good thing to allow people who go to work every day not to have to worry themselves sick about their children at home or at school.   (Remarks by Bill Clinton to the Democratic National Committee, Nov. 15, 1997)

It seems, however, that the example in (1b) is not as easy, since the first resultative is an adjective.   In other words, it might feel awkward that an adjective takes a resultative phrase at the level of the embedded layer.   This is not so strange as one might think at first, however, since adjectives do not always resist secondary predicates, and for that matter, resultative phrases.   I have pointed out the case of *sick to death* in Morita (1998), and here I cite another instance of the expression:

(13)　Their research, detailed in *Sick to Death of Homelessness*, shows the death rate among the homeless is three times higher than the rest of the population, with more than 600 dying on the streets last year.   (BNC, italics are mine)

Returning to the main discussion, let us consider two more examples, to which I extend the analysis given above.   First, consider the following example:

(14)　I've been sitting here worried sick.   (BNC)

At first glance, it seems that the example has the same combination of two secondary predicates *worried* and *sick* as the example in (1c).   Indeed, the latter of them works as a resultative in relation to the former.   The point is that in this example the first secondary predicate *worried* is not a resultative, but a depictive secondary predicate to the matrix verb *sit*.   Again abstracting away the depictive/resultative distinction, the structure for (14) is similar to (11b), as shown in the following:

(15)　I　　sit　　...　　worried　sick
　　　　　primary————-secondary

　　　　　　　　primary———secondary

The other does not seem to be as easy to interpret:

(16)　He grabs for his pistol, but is HIT flat in the face by a huge, white claw, knocking him into the snow, bloody and unconscious.   (A Draft Version of *The Empire Strikes Back*)

This example has three satellite expressions, namely, *into the snow, bloody* and *unconscious*.   It is often said that the order of such expressions in a sentence corresponds to the actual order in which the subevents that they denote happen (iconicity).   Given this general principle, if (16) is interpreted with these

expressions bearing the same status as a secondary predicate, the interpretation will turn out to be bizarre. It follows then that the three expressions do not coordinate on the same plane. I consider that the relevant part of (16) is not like (17a), or rather (17b):

    (17) a.   knock him [[into the snow] [bloody] and [unconscious]]

         b.   knock him [into the snow] [[bloody] and [unconscious]]

Under the interpretation that directionals are predicates of a kind that expresses a change of location, which I have pointed out in note 2, the directional phrase *into the sea* can be regarded as a secondary predicate in relation to the matrix verb, and the structure in (18) is given the following analysis:

    (18)   knock   him   [into the snow]   [[bloody] and [unconscious]]
               primary————secondary

                           primary————secondary (conjoined)

It should be noted that here the conjoined phrases *bloody and unconscious* works as a depictive secondary predicate, which expresses the circumstances under which the entity designated by *him* undergoes a change of location. Considering the sequences of cause-and-effect relationships involved, it seems rather obvious that the (sub)event of the entity being kicked is responsible for that of its having become bloody and unconscious; yet the relationship between the two is not directly expressed because of the UP constraint, but rather implied by virtue of the latter expressing the circumstances under which the former induces another subevent, namely the entity's change of location. I put emphasis on the fact that the relation between the two primary-secondary relations in (18) is the reverse of the one involved in (15): the predicate secondary to the matrix verb expresses a change of location and thus is regarded as analogous to a resultative, accompanied by a depictive secondary predicate, while the latter has a primary-secondary relation of the depictive kind at the level of matrix clause, with a resultative phrase embedded.

4.

    To conclude, let me make a comment as to what implications the analysis given so far has for Goldberg's statement that "one of the resultatives is understood to be a further specification of the other." Given an utterance that contains the form "V OBJ RESULT$_1$ RESULT$_2$", the latter resultative being a further specification of the former means its being the *terminus ad quem* that the utterance expresses, with the former being an immediate cause or means that induces such a state, and that the ultimate cause or means is expressed by the matrix verb.

More generally, an argument can be made in support of the idea that given the form "V OBJ PRED$_1$ PRED$_2$", the latter predicate (PRED$_2$) denotes the terminal state that the utterance conveys when it works as a resultative secondary predicates to the former (PRED$_1$). Observe the following article:

(19)   The newly appointed commandant of the papal Swiss Guards was found shot to death in his Vatican apartment on Monday night along with his wife and another member of the elite unit. A Vatican spokesman said the bodies of Alois Estermann, his wife Gladys Meza, and Cedric Tornay were found shortly after 9 p.m. Vatican spokesman Joaquin Navarro-Valls said there was evidence to suggest that Vice Cpl. Tornay, 23, was responsible for killing Estermann and his wife before presumably turning a gun on himself. (*CNN Quicknews*, May 5, 1998)

In the first sentence of the article, the matrix verb has a small clause whose head is the past participle *shot*, which in turn has the secondary predicate *to death*. OBJ has been raised to the matrix subject position, which is irreverent to the discussion. It is more important to see that what was found out is a party of the bodies of the persons in question, and that the first sentence is felicitously uttered by those who did not witness the crime; indeed it is implied in the third sentence that there was no witness. In other words, what the first sentence conveys is not the idea of bullets being fired so much as that of the victims being killed, which is expressed by PRED$_2$.

In this connection, of note is that fact that no formal mechanism makes sure that the matrix verb *find* and the most embedded predicate *to death* are associated, as shown in the following schematic analysis:

(20)   find   OBJ   shot   to death
        matrix   small clause head

                               primary————secondary

The point is that for the matrix verb, the predicate *to death* happens to be a secondary predicate to the head of the small clause it selects. This idea is confirmed by the following example:

(21)   A spy was found *(shot) to death.

The verb *find* can have the past participle *shot*, but not the prepositional phrase *to death*, and thus deletion of the participle makes the example in (21) ungrammatical. It is concluded that the resultative phrase is licensed by virtue of its being in a primary-secondary relation with the immediately preceding participle, but not with
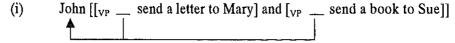
the matrix verb.

The same is true of the examples with the form "V OBJ RESULT$_1$ RESULT$_2$". What the discussion here has revealed is a king of form-meaning disparity: one the one hand, the matrix verb selects RESULT$_1$ and has no formal association with RESULT$_2$; on the other, what is meant by the utterance is expressed by RESULT$_2$, which the ultimate cause or means that the matrix verb designates induces through the two primary-secondary relations involved.

NOTES

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[1] It would be the case that in order to derive the surface sequence of the example in (6a), another ATB extraction is involved, as shown in (i):

(i)　　John [[$_{VP}$ __ send a letter to Mary] and [$_{VP}$ __ send a book to Sue]]

Under the so-called VP internal subject hypothesis, subject is generated within VP and then moves to the Spec position of some functional category. Thus, every argument that is specified in the argument structure of the verb is realized within VP, which in turn would give support to the idea that the example in (6a) has two constituents that refer to distinct events conjoined.

[2] The fact that a resultative and a directional can be conjoined would justify the treatment of the latter as a kind of predicate that expresses a change of location, or at least as a sign that marks involvement of such a predicate at a certain level of semantic representation. For discussion, see Talmy (1985) among others. Another thing that has to do with the discussion here is Goldberg's (1995) claim that directionals can constitute what she calls caused motion constructions, which have some features in common with, yet are distinguished from, resultative constructions. Though I do not go into details, what make them appear distinguished seem to have more to do with their categorial differences (adjectival vs. prepositional) than the constructional ones. See Morita (1998) for related issues.

³ As Tenny (1994:154) points out, when resultatives and depictives occur together, the resultative must come first, and they cannot exchange. Compare the example in (9b) with the following:

    (i)   * We hammered the metal hot flat.

Interestingly, directionals differ from resultatives in that only the former can follow depictives. These phrases can appear in either order, as the following pair of examples shows:

    (ii) a.   Clearly, there were employees who had heard on their own about the emergency in space and had come to the plant unbidden. (J. Lovell and J. Kluger, *Apollo 13*)

       b.   Brian Everthorpe came uninvited into the room. (D. Lodge, *Nice Work*)

Each of these examples contains the intransitive verb *come*. Examples with a transitive verb are also attested, which have a depictive followed by a directional. Among them is the following example:

    (iii)   I shall let it be given out that she fell from her horse, as Melwas said, and was carried unconscious to the hunting-lodge, and there lay, shaken and fainting, for most of the day. (BNC)

Compare this example with the following one given in Goldberg (1991:368), which has a directional proceeding a depictive:

    (iv)   The chef put the dish into the oven hot.

It is not certain where the difference between resultatives and directionals stems from. One might wonder whether or not it might be reducible to their difference in function (or in category). At present, I have no explanation for this issue and leave it open for further research.

⁴ A TES reviewer pointed out that the terminology may be confusing. By "primary-secondary relation", I mean the configuration in which one matrix predicate is accompanied by one secondary predicate in a particular clausal domain, yielding a one-to-one correspondence. It is not my intention to mean by this term any syntactic or semantic relation that would be found between the matrix verb and a secondary predicate. This task is well beyond the scope of this paper.

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