RE-*PREFIXATION IN EVENT CONFLATION*

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1. Introduction

The prefix *re-* shows unpredictable behavior in its scope and interpretation, and many linguists have had difficulty in explaining the variation uniformly. This paper gives an account based on Lexical Conceptual Structure (henceforth, LCS) for the properties of *re-* through examining the affixation in resultative and caused-motion constructions to which little attention has been paid so far.

2. Background

2.1 Wechsler (1989)

Wechsler (1989) proposes three constraints on the interpretation of *re-*, in view of the examples (2)-(4).

(1) a. Nuclear Argument Condition (NAC): *re-* takes scope over all nuclear arguments.
b. Direct Argument Condition (DAC): *re-* takes scope over only direct arguments (though not necessarily all direct arguments)
c. *re-*prefixation should be impossible on any verb with an argument which is both oblique and nuclear.

The term "nuclear argument" in (1a) designates an argument that expresses the completion of an accomplishment event.[1] According to NAC, the PP *with flippers* in (2a), in contrast to that of (2b), is outside the scope, since the instrument is non-nuclear. That is, (2a) does not require that John had used flippers for the earlier Channel-swimming. In both (2a) and (2b), *the English Channel* is inside the scope, of course.

(2) a. John reswam the English Channel with flippers.
b. John swam the English Channel with flippers again.

The second constraint targets at the fact that the goal phrases in (3) are outside the scope of *re-*.

(3) a. John redirected the man to the airport.
b. John resent the package to Cuba.

For the ungrammaticality of (4), Wechsler postulates the third constraint.

(4) a. *John reput the book on the shelf.
b. *John reset his weights on the table.
c. *John restood the ladder against the wall.

When the argument is inside the scope of *re-*, the event that argument participates in should be interpreted to be true at least twice.

However, Randall (1985) lists some cases that are inconsistent with Wechsler's third constraint, as will be discussed in section 3.1.

2.2 Yumoto (1995)

Yumoto (1995) mentions substantially

1 Incremental Theme (Dowty 1979) is an example.

three points about the interpretation of *re-*. Firstly, as Dowty (1979) indicates, (5b), for instance, does not necessary imply that the space capsule had ever entered the atmosphere on a previous occasion, but simply that it had been within the atmosphere.

(5) a. Bob decided to re-join the human race.
b. The space capsule re-entered the atmosphere.

Secondly, we cannot attach *re-* to stative verbs and most activity verbs.

(6) *rebelieve, *relove, *resleep, *rework

However, Yumoto points out that *re-* can be affixed to activity verbs which do not entail any concrete result state, as long as they denotes [+delimit] event, and once *re-* attaches to such verbs, accomplishment reading becomes obligatory.

(7) a. John reread Ulysses. (Yumoto 1995)
b. She wiped the floor {for three hours/yesterday}.
c. She rewiped the floor {*for three hours/yesterday}.

Thirdly, *re-* does not inherit the subcategorization of stative usage when verbs have several meanings.

(8) a. I will {*rethink/think} that I will go outside. (Roeper and Siegel 1978:253)
b. Bob {*reconsiders/considers} Al a genius. (Carlson and Roeper 1980:365)

Yumoto argues that the above properties cannot be explained by Wechsler's argument-structure analysis, and proposes an LCS account as in (9).

(9) *re-* takes scope over the terminal event.[2]
[BECOME [AGAIN [[Bo] BE [AT [human race]]]]] (-5a)

Concerning examples provided so far, this analysis of *re-*prefixation seems to be on the right track. If the focus is shifted to *re-* prefixation in secondary predicate, however, we will notice the presence of cases this analysis cannot cover, as will be mentioned in 3.2.

3. Problems of Previous Researches

3.1 Obligatory PPs

Wechsler postulates that *re-* takes scope over arguments that are both nuclear and direct. However, Randall (1985) presents a few examples contrary to his analysis.

(10) a. reinterest John in Shakespeare
b. recure John of hepatitis
(11) a. resaddle Mary with all the messy chores
b. reassign Mary to honors English (Randall 1985:77)

The optional PPs in (10) are not direct argument but obliques. According to DAC in (1b), *re-* does not take scope over obliques. Actually, however, these obliques are inside of the scope: it is implied that John had been interested in Shakespeare before in (10a), and that John suffered from hepatitis more than twice in (10b). These data indicate that Wechsler's analysis is not perfect in explaining *re-* with oblique goal phrases. In 3.2, examples of *re-*V in secondary predicates will be investigated, and in section 4, a new LCS account which also elucidates those stubborn data in (10-11) will be proposed.

3.2 Re- *in Event Conflation Examples*

In this subsection, the prefix *re-* will be

2 The terminal event means the subevent that comes about when a [+delimited] event is completed. In this sense, the terminal event is not always identical to result event.

examined specifically with the verbs undergoing the event conflation like resultative and caused-motion constructions, and we will point out that Yumoto's (1995) proposal cannot be applied to all examples of this prefix.

Let us compare (12-13a) with (12-13b) in the followings.

(12) a. *John repushed the cart.
b. John repushed the cart to the store.

(13) a. *The maid rescrubbed the pot.
b. The maid rescrubbed the pot shiny.

Since *re-* basically adopts achievement/accomplishment events, activity verbs cannot co-occur with *re-* in (12-13a). On the other hand, *re-* can be attached to the same verbs in resultative or caused-motion constructions as in (12-13b). This is because these constructions experience event conflation (Rappaport Hovav and Levin 1999): the addition of a certain result phrase changes an activity event into an accomplishment event in the event structure.

It should be noticed here that there are some cases where *re-* can attach to activity verbs without any result phrase. The verbs in (14-15a) tend to be accepted much easier, even though they may be classified identical to the verbs *push* and *scrub* in (12-13a). Washing and brushing activities are considered to be closely connected with the clean and straight state in our conceptual world. In other words, the action toward the object in (14-15a) can be recognized to be associated with a particular result: verbs such as *wash* and *brush* may include the result states realized by *clean* and *straight* as TELIC role in their qualia structures. This displays a different property from (12-13a). This observation leads us to conclude that *re-* can be affixed on an activity verb without any result phrase only when the combination of the activity verb and its direct object expresses a specific purpose or intention listed as TELIC role in the qualia structure of the verb.

(14) a. Mary rewashed the shirt/dishes.
b. Mary rewashed the shirt/dishes clean.

(15) a. The mother rebrushed her hair.
b. The mother rebrushed her hair straight.

It is true that (12a) and (13a) differ from (14a) and (15a) in their grammaticality with *re-*, but result phrases in (12-15b) all function alike: they introduce a new event which is not entailed by the base verb. What is remarkable here is that this prefix has two possible interpretations concerning (12-15b). Firstly, we will observe the most natural interpretation of these sentences. Native speakers of English usually assume that the recurrence of both activity and result is observed in (12-15b). For instance, the action 'washing shirt/dishes' and its consequence 'the shirt/dishes became clean' in (14b) had both existed on an earlier occasion, but the *clean* state was undone somehow, and then done again. The same thing can be said about (12, 13, 15b).

Secondly and more noteworthily, (12-15b) also have the interpretation 'the action had occurred, but had fallen short of the result state.' Although this reading is somewhat marginal, these data demonstrate that augmented result subevents may go outside the scope of *re-*, while activity subevents need to be inside in the examples of event conflation (the result state had not necessarily been obtained on the earlier occasion, while the repetition of activity is required). Considering these data including event conflation, we must

say Yumoto's proposal in (9) cannot be maintained in every case. At first glance, this phenomenon seems rather bizarre because usually *re-* does not attach to activity verbs until some added result phrase builds an accomplishment event except the cases in (14,15).

The above observations have revealed that neither Wechsler's nor Yumoto's analysis completely explains the behavior and the interpretation of *re-*. The goal of this paper is to provide an overall account of this prefix. To put it concretely, it can be proposed that *re-* takes scope at least over the subevent in the LCS which contains the semantic predicate the base verb specifies.[3] Let us demonstrate this hypothesis by investigating both examples that show event conflation and those that do not.

4. Proposal

4.1 Specification Spot

The operation of event conflation is applied to activity verbs and, as a result, generates an accomplishment event. In this paper, it is assumed that the examples in (12-15) have the following LCS representation. In order to elucidate the interpretation of *re-*, we need an elaborated representation as in (16). The bolded part stands for the scope of *re-*, and the verb's frame is underlined. In addition, the notion "specification spot" is introduced in this paper. Like manner of motion verbs (*walk, march* etc.) specify the manner of the ACT (ON) predicate in their LCS, this paper supposes that, every verb specifically refers to a certain semantic predicate in its LCS, and the shaded part in (16) denotes this "specification spot."

(16) **[e1 x** <u>ACT (ON</u> **y)]** CAUSE
[BECOME [e2 y BE AT-z]
push/wash-act, running-manner

It is possible to think that specification spot is the part of LCS where idiosyncratic information of each verb is included. The proposal of this paper is that the prefix *re-* takes scope over at least the verb's subevent including this specification spot. The schema in (16) indicates that all sentences that undergo event conflation comprise any activity verb which refers to a type or manner of a certain action and this specification is what distinguishes one particular verb from another. Besides, the result state added by the resultative or the goal phrase is not originally embraced in the base verb. Therefore, it is necessary for the causing subevent, but not for the result subevent, to be inside the scope of *re-* in examples displaying the event conflation like (12-15).

It should be noted here, since we try to determine the part (subevent) in LCS should always be inside the scope of *re-*, whether or not the other part (subevent) is inside the scope does not matter. Accordingly, the result states described in (12-15) might or might not have been true in the previous occasion.

The notion of "specification spot" presented in this paper can also be regarded as "semantic head" of verbs. This notion is similar to that of event headedness (Pustejovsky 1995) at first glance, but is not identical to it, because event headedness can shift according to the operation of event conflation, while the semantic predicate where the verb refers to never changes even if it is foregrounded or backgrounded. Since affix like *re-* morphologically attaches only to verbs, it seems natural for *re-* to take scope over where each verb

3 The semantic predicate is capitalized in LCS representations.

per se specifies in the LCS.

Next, consider the sentences without event conflation.

(17) a. She re-dyed her hair brown.
b. [e1 x ACT ON y] CAUSE [BECOME [e2 y BE AT-DYED]

The verb *dye* specifies the state predicate (BE AT-DYED), therefore the result subevent is inside of the scope of *re-*. It is assumed that the hair had been dyed on the previous occasion, however, it had not necessarily been brown, since the information like color in (17a) only modifies the result state already established by the verb itself. In this sense, the expression like *brown* in (17a) is an adjunct and is outside the scope of *re-*. This account equally applies to the case of the oblique goal phrase in (18a).

(18) a. The man replaced/repositioned the statue in the gallery.
b. [x ACT ON y] CAUSE [BECOME [y BE AT-ON/IN-PLACE]
(19) a. The librarian shelved the book on the upper shelf.
b. [x ACT ON y] CAUSE [BECOME [y BE AT-ON-SHELF]

Since the verb such as *place* or *position* specifies its BE-AT predicate, the result subevent including specification spot is crucially inside the scope. In (18a), the statue had been actually located somewhere, but not necessarily in the gallery, because the locative expression specifying the resultant position is just an adjunct. This example is similar to the denominal verb *shelve* in (19). Since its specification spot is the result state including SHELF itself, the book had been put on a kind of shelf previously. However, it does not necessarily the upper shelf.

Considering the above analysis, the interpretation of re- can be formalized as in (20).

(20) *Re-* takes scope over at least the subevent in the LCS that includes the base verb's specification spot.

The following examples have been lumped together with those in (18-19) which contains oblique goal phrases, but the careful scrutiny reveals that they show the different behavior.

(21) a. Bob resent the package to Mary.
b. John {redirected/re-guided/re-led} the man to the airport.
c. [e1 x ACT ON y] CAUSE [BECOME [e2 y MOVE TOWARD]

The verbs in (21) consist of ACT and MOVE subevents. Since these verbs specify how the causee's motion is brought about, specification spot is the agent's action represented by ACT ON. While *re-* obligatorily takes scope over e1 in these examples because of specifying the activity event, usually e2 is also inside the scope: it is presupposed that *the package* had been arrived somewhere, probably not *to Mary* in (21a). However, this is not against our proposal because the subevent in the LCS that includes the semantic predicate the base verb specifies is adequately inside the scope in these examples.

4.2 Unit of Verb and Preposition

Finally, it is important to examine the acceptability of the following examples pointed out by Randall (1985). PPs in (22-23) are inside the scope of *re-*, against Wechsler's third constraint.

(22) a. He redistinguished Mary from the crowd.
b. The teacher reassigned Mary to honor English.

(23) a. The doctor recured the patient of hepatitis.
b. The teacher reinterested John in Shakespeare.

PPs in (22) are obligatory and cannot be syntactically omitted, and those in (23) are optional. In all those examples, however, the base verb determines which preposition should appear in the sentence. This fact suggests that the verbs like these constitute a unit with the preposition they select. Even when no PP appears in (23), it is just omitted on the surface, and its semantic content still exists in LCS, like *eat* and *drink*. Since the verb and its preposition form a unit and are listed as a unit in the lexicon, the LCS in (24) which shows double specifications will be proposed. For example, let us examine the LCS of "assign to～".

(24) [x ACT ON y] CAUSE [BECOME [y BE AT-TO ____]
assign-act + *to*-goal

The unit "assign to" specifies both ACT-ON and BE-AT predicates. As a consequence, the whole events are in the scope of *re-*. These examples are similar to (17-19) in that both specify e2, but they differ concerning whether or not the goal phrase is already embedded as a constant. If the phrase expressing the goal is given as a constant by the verb itself, oblique on the surface is adujunct, therefore, it is outside of the scope. In (22-23), on the other hand, goal should be filled by oblique, and this oblique should be taken scope over. According to this observation, it is expected that no case where the oblique required by the base verb prevents *re*-prefixation against Wechlser's third constraint.[4]

All these data demonstrate the validity of our generalization that *re-* takes scope over subevents that include "specification spot" in LCS. However, the rationale of excluding BECOME predicate from the scope in these sentences should be sought in the future .

5. Conclusion

In this paper, we have proposed that the scope of *re-* should be elaborately analyzed in terms of the elements in LCS, rather than the arguments realized in syntax in order to elucidate its delicate behavior. More concretely, it is argued that the notion of "specification spot" is crucial in the interpretation of *re-*. Finally, this paper is suggestive in pointing out the necessity of the division of the current lexical semantic representation: the representation for pure verbs on the one hand, and that for verb phrases or the whole sentences on the other.

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4 Here, *put* class in (4) is regarded as an exception, which is supported by the fact that *put* class precludes various morphological operations other than *re-* prefixation.

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