OVER- + V IN ENGLISH AND COMPOUND VERBS IN JAPANESE

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This paper develops a lexical semantic analysis of English complex predicates with the prefix over- such as overeat, and claims that these complex predicates are formed in the same way as the resultative construction at the level of Lexical Conceptual Structure. In other words, in this paper, over- is regarded as a resultative predicate. The aim of this paper is to argue about the inheritance of argument structures of these complex predicates from their base verbs. It is also proposed that the difference between over- + V in English and Japanese compound verbs in their processes of formation can be reduced to the difference between the two languages in a boundedness parameter (Kageyama (2001, 2002)).

Keywords: conflation of LCS, boundedness, constant argument

1. Introduction

This paper discusses English complex predicates composed of the prefix over- and a verb, illustrated in (1) and (2). The purpose of this paper is to provide a lexical semantic explanation for the inheritance of argument structures of these complex predicates from their base verbs:

(1) a. She tends to eat chocolate every day.
   b. *She tends to overeat chocolate every day.
      cf. *I overate the potato. (Roeper and Siegel (1978: 254))

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Yumoto (1997, 2001) observes that in the cases of overeat in (1) and overdrink in (2), the internal arguments of the base verbs eat and drink (e.g. chocolate in (1a)) cannot be inherited, as shown in (1b) and (2a) (Randall (1988)). Instead, overeat and overdrink appear as transitive verbs with reflexive pronouns or as intransitive verbs, as shown in (1c) and (2b).

However, contrary to the observation above, there are many examples of overeat and overdrink complemented by noun phrases other than reflexive pronouns, as shown in (3):¹

(3) a. Be careful! You tend to overeat these foods.
   b. Liqueur’s sweetness often makes it easy to overdrink cocktails.

Later I will give a more precise account of these examples.

This paper is also concerned with Japanese compound verbs composed of a verb and the supplementary verb sugiru ‘overdo,’ illustrated in (4). Yumoto (2001) argues that complex predicates with over- in English correspond to Japanese compound verbs like tabe-sugiru ‘overeat’ in (4a) and nomi-sugiru ‘overdrink’ in (4b), which are supposed to be formed at the level of syntax (Kageyama (1993), Yumoto (2001)):

(4) a. Kanojo-wa chokoreito-o tabe-sugita.
   she-Top chocolate-Acc overate
   ‘She overate chocolate.’
   b. Kare-wa biiru-o nomi-sugita.
   he-Top beer-Acc overdrank
   ‘He overdrank beer.’

In (4a) and (4b), the base verbs taberu ‘eat’ and nomu ‘drink’ are compounded with sugiru. In the case of a compound verb with sugiru, the internal argument of the base verb (e.g. chokoreito in (4a)) can be

¹ The examples in (3) are cited from the following websites:
http://tsangenterprise.com/news5.htm
http://www.cockailtimes.com/indepth/bsj/002.html
This paper is organized as follows. Section 2 reviews the lexical semantic analysis in Yumoto (1997, 2001), and points out problems with Yumoto's analysis. Section 3 provides another lexical semantic view in which the prefix over- is regarded as a resultative predicate, and proposes that over- + V is formed at the level of LCS (Lexical Conceptual Structure) in the same way as the resultative construction in English. Section 4 proposes that the difference between over- + V in English and Japanese compound verbs in their processes of formation can be reduced to the difference between the two languages in a boundedness parameter (Kageyama (2001, 2002)). Section 5 is the conclusion of this paper.


This section points out problems with the lexical semantic analysis in Yumoto (1997, 2001). Yumoto assumes the following process of over-prefixation:

\[(5) \quad \text{a. } V: [\ldots \text{GO}([\ ], [\text{Path} \ldots [\text{Place} \text{X}([\ ])])])]\]
\[\rightarrow \text{over-}V: [\ldots \text{GO}([\ ], [\text{Path} \ldots [\text{Place OVER}([\ ])])])]\]
\[\text{b. } V: [\ldots \text{INCH}([\text{BE}([\ ], [\text{Place OVER}([\ ])])])]\]
\[\rightarrow \text{over-}V: [\ldots \text{INCH}([\text{BE}([\ ], [\text{Place OVER}([\ ])])])]\]

(Yumoto (1997:189))

In (5), the inserted OVER, which means 'beyond', replaces a Place function that appears in the terminal event in the LCS of the base verb. In her framework, OVER as well as AT and IN is regarded as a kind of Place function (Jackendoff (1990), Yumoto in Kageyama and Yumoto (1997)). In other words, OVER is inserted to specify arguments such as goal of movement or result of change of state in the LCS of the base verb. If there is no argument like Goal or Theme in the LCS of the base verb, the argument of the newly inserted OVER is realized as the direct object.

By way of example, observe the following LCS representations:

\[(6) \quad \text{a. } \text{run} \quad \text{GO}([\text{Thing}],[\text{Path}])\]
\[\text{b. } \text{overrun (e.g. 'overrun the line')} \quad \text{GO}([\text{Thing}],[\text{Path TO} [\text{Place OVER}([\text{Thing}])]])\]
\[(7) \quad \text{a. } \text{heat} \quad \text{CAUSE}([\text{Thing}],[\text{INCH}([\text{State BE Ident}([\text{Property}]]))]
\[\quad [\text{Place AT}([\text{Property}]]))]\]
b. overheat (e.g. ‘overheat the room’)

\[
\text{[CAUSE([Thing]_i, [INCH([State \ BE \ Ident([Thing]_j, [Place \ OVER ([Property \ HOT ])]_i)])])]
\]

(Yumoto (1997: 188))

In (6b), the Goal argument (i.e. the line), which is optional in (6a), is specified by OVER, and this argument is realized as the direct object. In (7b), the result of change of state (i.e. HOT) is specified by OVER, and the internal argument (i.e. the room) is inherited from the base verb heat.

At first sight, overeat in (1c) and overdrink in (2b), repeated here as (8a) and (8b), seem to be counterexamples to Yumoto’s analysis, because the LCS representations of the base verbs eat and drink do not contain the structures displayed in (5a, b). The same observation can be applied to the complex predicate oversleep in (9):

(8) a. She tends to overeat (herself) every day. (= (1c))
    b. He tends to overdrink (himself). (= (2b))

(9) oversleep the fixed time (cf. *sleep the time)

(Yumoto (1997: 185))

Overeat and overdrink, as already observed, appear as transitive verbs with reflexive pronouns or as intransitive verbs. According to Yumoto (1997: 191–192), “it is plausible to assume that these verbs take a reflexive object at least in the LCS, and thus they receive the LCS like \([\text{GO([ }\alpha], [\text{TO [OVER([\alpha])]])]\) in which the two arguments are co-indexed.” Yumoto (1997) assumes a process that consists of the subordination of the LCS of the base verb (e.g. eat) and the adjunction of the template structure of over-verbs (in the case of overeat, \([\text{GO([ }\alpha], [\text{TO [OVER([\alpha])]])}\]) as superordinate function, as shown in (10):

(10) a. overeat

\[
\text{[GO([ }\alpha], [\text{TO [OVER([\alpha])]])]}
\]
\[\text{WITH [CAUSE([\alpha], ([FOOD], [\text{TO [IN[MOUTH OF}\ [\alpha]])]))]}
\]

b. oversleep

\[
\text{[GO([ }\alpha], [\text{TO [OVER([ ])])]])]
\]
\[\text{WITH [SLEEP([\alpha])]}\]

For example, in (10a), the LCS of eat (i.e. the LCS in the second line) is subordinated, and the template structure \([\text{GO([ }\alpha], [\text{TO [OVER([\alpha])]])}\]) is adjoined as a superordinate function. In (10b), the LCS of sleep (i.e. WITH [SLEEP([\alpha])]) is subordinated, and the tem-
plate structure \([\text{GO}([_{1}, \text{TO} \text{OVER}([_{2}])])]\) is adjoined. In both cases, the argument of OVER is realized as the direct object; in (10a), the referent of this argument is specified in the LCS, and therefore, only a reflexive pronoun is allowed in the position of the direct object of overeat and overdrink, as shown in (8). In (10b), since the predicate GO represents a temporal change, a noun phrase such as the fixed time is selected as its argument.

However, this analysis raises some empirical problems. First of all, there are actually many examples like (11) and (12):²

(11) a. ... showed that women with PMS overeat carbohydrates and gain weight.
   b. Situations, not hunger, trigger a stress eater’s desire to overeat their favorite comfort foods, ...
   c. Be careful! You tend to overeat these foods. (=3a))
   d. Why Do We Overeat Stockpiled Products?
   e. Why 100% raw vegans eat so much avocado and nuts, or overeat sugar (fruit).

(12) a. Liqueur’s sweetness often makes it easy to overdrink cocktails. (=3b))
   b. Weaned pigs sometimes overdrink Lectade, if given ad lib.

The representation in (10a) gives no explanation to these examples.

Secondly, there are also examples of oversleep accompanied by reflexive pronouns as in (13):³

(13) a. ... he fears, when he lies down, that he will oversleep himself in the morning.
   b. Alexander, we are told, had an excellent night’s sleep,

² The examples in (11) and (12) are cited from the following websites:
   http://www.beyondevg.com/billings-t/cal-par/calorie-paradox1f.shtml
   http://www.wansink.com/lessonplans/kpmodule61.html
   http://www.weightwatchers.com/aboutus/12_au_comp_pr_comfort.asp
   http://bigfive.jl.co.za/lectade.htm

Emphasis is mine.

³ The examples in (13) are cited from the following web pages:
   http://www.pothos.co.uk/alexander.asp?ParaID=95

Emphasis is mine.
nearly overslept himself and had to be woken by Parmenion who had to remind his king that it was time for battle.

If it is assumed that *oversleep*, like *overeat* and *overdrink*, takes a reflexive object at least in the LCS, the LCS representation in (10b) must be reexamined.

In the next section, I will propose an alternative lexical semantic analysis in order to resolve these problems.

3. *Over- + V* in English

3.1. The Prefix *Over-* as a Resultative Predicate

I will assume that the prefix *over-* is regarded as a resultative predicate like *white* in (14), and that complex predicates with *over-* are formed at the level of LCS in the same way as the resultative construction in English:

(14) He painted the fence *white*.

Complex predicates with *over-* and the resultative construction have the following five similarities (see also Yamada (2000)). Firstly, they cannot occur with *for* phrases to express atelic aspect, which does not imply an end point of a change of state or a movement, as shown in (15a) and (15b). (15a') and (15b') show that their base verbs can occur with *for* phrases without any problem:


   a'. Bill was drinking for an hour.

   (Yumoto (1997: 189))

 b. The waiter wiped the table dry in/*for two minutes.

   b'. The waiter wiped the table in/for two minutes.

   (Levin and Rappaport Hovav (1995: 58))

In other words, these two constructions are changed into telic expressions after the formation; they necessarily imply a result of a change of state or a goal of a movement.

Secondly, when the two constructions are derived from intransitive verbs, noun phrases such as *the fixed time* in (16), *the line* in (17a) and *their Nikes* in (17b) appear as the direct objects of the verbs:

(16) John overslept the fixed time.          (Yumoto (1997: 185))

(17) a. John overran the line.

 b. The joggers ran their Nikes threadbare.

   (Carrier and Randall (1992: 173))
These noun phrases cannot be realized as the direct objects of the base intransitive verbs, as shown in (18):

(18) a. *run the line (cf. run over the line), *run his Nikes
    b. *sleep the time (Yumoto (1997: 185))

Thirdly, a fake reflexive object appears in both of the constructions (Goldberg (1995), Jackendoff (1990: 240), Kageyama (1996)). As evidence for a fake reflexive object with over- + V and the resultative construction, observe the following examples:

(19) a. ... he fears, when he lies down, that he will oversleep himself in the morning. (= (13a))
    b. She slept herself sober. (Goldberg (1995: 93))

(20) a. However, Ireland overdid himself when he went on to forge a lost play, Vortigern and Rowena, in 1796.
    b. What I like about her the most, is the fact that she doesn’t overdo or overact herself when dramatic or rage-filled reactions are called for.
    c. There is, on the one hand, the laziness category, the suggestion that he doesn’t exactly overwork himself.

Fourthly, complex predicates with over- cannot appear in the resultative construction, as shown in (21a):

(21) a. *She overate herself sick. (Yamada (2000: 77))
    a'. She ate herself sick.
    b. *He wiped the table dry clean. (Goldberg (1995: 82))

Notice that the base verb eat can appear in the resultative construction as shown in (21a'). If the prefix over- is regarded as a resultative predicate, the unacceptability of over- + V in (21a) is explained in the same way as the unacceptability of the resultative construction in (21b). In both (21a) and (21b), more than one resultative predicate is found; i.e. over- and sick in (21a) and dry and clean in (21b). Goldberg (1995) argues that more than one resultative predicate is not allowed in

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4 The examples in (20) are cited from the following websites:
   http://books.guardian.co.uk/Print/0,3858,4299852,00.html
   http://abcnews.go.com/sections/nightline/DailyNews/100days_leno.html

Emphasis is mine.
the resultative construction. If complex predicates with over- are considered to be formed in the same way as the resultative construction, it is not strange that the same restriction applies to over- + V.

Fifthly, resultative phrases and over- cannot appear in the double object construction and the locative variant of the Spray/Load alternation, as shown in (22), (23a) and (24a), while they can appear in the with variant of the alternation, as shown in (23b) and (24b) (Tanaka (2002)):

(22)  
   a. *John cooked Mary the egg hard.  
   b. *John overthrow Bill the ball. 
       
       (Carlson and Roeper (1980: 126))

(23)  
   a. *John loaded the hay into the wagon full.  (locative variant) 
   b. John loaded the wagon full with hay.  (with variant) 
       
       (Levin and Rappaport Hovav (1995: 58))

(24)  
   a. *overload freight onto the ship  (locative variant) 
   b. overload the ship (with freight)  (with variant) 
       
       (Yumoto (1997: 186))

These examples show that resultative phrases like hard and full and over- cannot be predicated of the direct object of the double construction and prepositional phrases. If it is assumed that over- functions in the same manner as resultative phrases, their parallel behavior observed above can be naturally explained.

Let us now turn our attention to the formation of the two constructions. Kageyama (1996) proposes that the resultative construction can be divided into the following two types:

(25)  
   a. inherent resultative construction 
      He painted the fence white.  (= (14)) 
      [He CONTROL [the fence BECOME [the fence BE AT-WHITE-PAINTED]]] 
   b. derived resultative construction 
      He pounded the metal flat. 
      [he ACT ON the metal] → 
      [he ACT ON the metal] CAUSE [the metal BECOME [the metal BE AT-FLAT]]

In the case of the inherent type of the resultative construction in (25a), a resultative predicate (e.g. WHITE) modifies the result of a change of state in the LCS (i.e. PAINTED). Resultative predicates like WHITE are always realized at the complement position of AT and TO; these
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predicates enrich the semantics of a resultant state like PAINTED in (25a), the complement of AT and TO (Kageyama (1996)). In the case of the derived type of the resultative construction in (25b), on the other hand, the conflation of a superordinate event ([ACT ON] or [ACT]) and a subordinate one ([BECOME [BE AT]]) takes place (Kageyama (1996: 253)). I will argue that complex predicates with over- can also be divided into these two types; i.e. an inherent complex predicate and a derived one. In this paper, a newly conflated subordinate event in the derived resultative construction (e.g. [BECOME [BE AT]] in (25b)) is represented in italics.

The LCS representations of an inherent complex predicate with over- and of a derived one are given below:

(26) a. an inherent complex predicate with over-

[x CONTROL [y BECOME [y BE AT-OVER-z]]]

or [x CONTROL [y MOVE [y TO OVER-GOAL]]]

b. a derived complex predicate with over-

[x ACT (ON y)] →

[x ACT (ON y)] CAUSE [y BECOME [y BE AT-OVER-z]]

or [x ACT (ON y)] →

[x ACT (ON y)] CAUSE [y MOVE [y TO OVER-GOAL]]

In the case of the inherent complex predicate in (26a), on the one hand, OVER modifies a result of a change of state or a goal of a movement in the LCS of the base verb. In the case of the derived complex predicate in (26b), on the other hand, the LCS of the base verb ([ACT (ON)]) is combined with [BECOME [BE AT]] or [MOVE [TO

5 In Kageyama (1996: 239), it is proposed that predicates like partway in (ia) modify AT as represented in (ib):

(1) a. She closed the door partway. (Parsons (1990: 121))

b. [door BE [PARTWAY [AT-CLOSED]]] (Kageyama (1996: 240))

In (ia), partway indicates a state that the door is closed halfway. In other words, the resultant state denoted by CLOSED in (ia) is not accomplished. Such a predicate is strictly speaking not a resultative predicate.
GOAL]], and OVER modifies a result or a goal in this derived LCS.\textsuperscript{6} The choice between (26a) and (26b) depends on the LCS of the base verb.

I will briefly discuss the semantics of OVER and the syntactic realization of an internal argument after the formation of over- + V. In this paper, OVER is regarded not as a Place function, but as a modifier of a resultant state and a goal of a movement.\textsuperscript{7} OVER is a resultative predicate to directly modify a resultant state, the complement of AT, and a goal argument, the complement of TO. In the former case, the degree of the resultant state of the base verb is specified by OVER. In the latter case, the goal argument is the reference value to be modified by OVER (see the following paragraphs).

The semantics of OVER is related to the scalar usage of the preposition over illustrated in (27) (Williams (1993)):

(27) John is over 6 ft. tall. (Williams (1993: 278))

In (27), John's height, the target value, is evaluated on the basis of the reference value of 6 ft, and this target value is above the reference value.

The modifier OVER can be interpreted in two ways. The interpretation of OVER is determined by the element to be modified. When OVER modifies a resultant state of LCS as in (28), we can gain an interpretation that the degree of the state is too high or excessive:

(28) \[y \text{ BE-AT OVER-STATE}\]

In this reading, the degree of the state, the target value, exceeds the implicit reference value established by the speaker.

When OVER modifies a goal element like z in (29a, b) or a GOAL

\textsuperscript{6} Although verbs like break and close appear in the resultative construction, complex predicates like *overbreak and *overclose are not allowed. The unacceptability of these complex predicates is due to semantic incompatibility between the results of changes of state in the LCS of the base verbs to be modified and OVER. It is not easy for us to make an interpretation that the degree of the resultant states expressed by [BROKEN] and [CLOSED] is excessive (Yumoto (1997: 190)); e.g., a situation that a door is closed too much is hard to imagine.

A complex predicate like overresemble in (i) is excluded for the same reason, because a situation that one resembles another person too much is rather strange:

( i ) *overresemble

[x BE AT OVER RESEMBLANT TO y]

\textsuperscript{7} I owe this point to Yoko Yumoto (personal communication).
predicate in (29c), we can gain an interpretation that \( y \) moves beyond \( z \) or some boundary denoted by \( \text{GOAL} \):

\[
\begin{align*}
(29) & \quad \text{a. } [y \ BE-\text{AT} \ OVER-z] \\
& \quad \text{b. } [y \ MOVE \ [y \ TO \ OVER-z]] \\
& \quad \text{c. } [y \ MOVE \ [y \ TO \ OVER-\text{GOAL}]]
\end{align*}
\]

In other words, \( y \), the target value, moves beyond the reference value denoted by \( z \) and \( \text{GOAL} \). If the movement is metaphorically understood as a change of state (Lakoff and Johnson (1980)), \( \text{OVER} \) implies that the state changes beyond a limit indicated by \( z \) or \( \text{GOAL} \).

Let us return to the formation of the resultative construction and \( \text{over-} + \text{V} \). After the formation of these two constructions, a result or a goal of the derived LCS is focused. It has already been observed in (15) that the telicity of a base verb is changed after the formation of these constructions. I will assume that in the LCS representations of the two constructions, a result or goal argument (i.e. the complement of \( \text{BE AT} \) and \( \text{TO} \)) is syntactically realized as an internal argument of a base verb prior to any other elements in the LCS. The subject of \( \text{BE AT} \) of \( \text{TO} \) (\( y \) in (30)) is, normally, syntactically realized as an internal argument of a verb prior to any other arguments, as proposed in Kageyama (1996: 92):

\[
\begin{align*}
(30) & \quad [x \ \text{ACT (ON } y\text{)}] \ \text{CAUSE} \ [y \ \text{BECOME} \ [y \ \text{BE AT-} z]] \\
& \quad [y \ \text{BECOME} \ [y \ \text{BE AT-} z]] \\
& \quad [y \ \text{MOVE} \ [y \ \text{TO } z]]
\end{align*}
\]

If there is no subject of \( \text{BE AT} \) or \( \text{TO} \), the complement of \( \text{ACT ON} \) is realized as an internal argument. The order of priority of syntactic realization of an internal argument is presented as in (30).

After the formation, the order of priority is changed as in (31); the complement of \( \text{BE AT} \) or \( \text{TO} \) (i.e. \( z \) in (31)), a result or goal argument, is realized syntactically as an internal argument prior to any other elements:

\[
\begin{align*}
(31) & \quad [x \ \text{ACT (ON } y\text{)}] \ \text{CAUSE} \ [y \ \text{BECOME} \ [y \ \text{BE AT-OVER-} z]] \\
& \quad [y \ \text{BECOME} \ [y \ \text{BE AT-OVER-} z]] \\
& \quad [y \ \text{MOVE} \ [y \ \text{TO } \text{OVER-} z]]
\end{align*}
\]

If there is no result or goal argument, the subject of \( \text{BE AT} \) or \( \text{TO} \) (i.e. \( y \) in (31)) is selected to be syntactically realized as an internal argument.

Finally, let us discuss several constraints on the formation of the resultative construction and \( \text{over} + \text{V} \). Firstly, I will provide constraints
on the conflation of LCSs represented in (25b) and (26b). Although Kageyama (1996) only discusses a combination of [ACT (ON)] with [BECOME [BE AT]], I will also deal with combinations like [ACT (ON)] with [MOVE [TO GOAL]] and [MOVE] with [TO GOAL], following Kageyama (2002):

(32) a. John swam. [x MOVE]
    b. John swam to the shore. [x MOVE [x TO z]]

In (32), [MOVE] is combined with [TO GOAL]. The predicate [TO GOAL] is the complement of [MOVE], and specifies a path of a movement.\(^8\)

It is assumed that the predicate MOVE represents not only a physical movement as in (32) but also an atelic change of state like the one in (33) (Jackendoff (1990), Kageyama (1996)):

(33) The metal cooled for hours. (Jackendoff (1990: 95))
    [the metal MOVE [the metal TO COOL]]

I will propose that in English, any combination of LCSs is allowed if the process of the conflation of LCSs is consistent with the direction of the arrow figured in (34a):

(34) a. activity/action \rightarrow change/process/motion \rightarrow state/location
    x ACT (ON-y) y BECOME / y MOVE y BE AT-z
    (Kageyama (2001: 32))

b. the sun set \rightarrow *the sun set the children go(ing) home
    [BECOME] \rightarrow *[BECOME] + [ACT]

For example, while [ACT (ON)] can be combined with [BECOME [BE AT]] (the derived representation is [[ACT (ON)] CAUSE [BECOME [BE AT]]]), [BECOME [BE AT]] cannot be combined with [ACT (ON)] (the derived representation would be [[BECOME [BE AT]] CAUSE [ACT (ON)]]). In the latter case, the process of the conflation runs counter to the direction of the arrow in (34a) (cf. Kageyama (1996: 282)). According to Kageyama (2001, 2002), English has a strong tendency to direct the viewpoint of a speaker toward the ‘event boundary,’ the tail of the action chain of events (Langacker (1991)), as indicated in

\(^8\) [TO GOAL] specifies a path in the same way as a traversal path like along the street. I owe this point to an anonymous EL reviewer.
In short, I will assume that the conflation of LCSs in English is allowed as far as its process is compatible with the direction of a viewpoint shown in (34a).

Secondly, the formation of the resultative construction and over- + V is not allowed if the derived sentence violates the Unique Path Constraint in (35), originally developed in Goldberg (1995: 82) (cf. Kageyama (1996: 227)):

(35) The Unique Path 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.

(36) *Shelly sailed into the kitchen into the garden. (Goldberg (1995: 82))

For example, (36) is judged unacceptable, because two distinct paths are predicated of Shelly in this sentence; i.e. a path into the kitchen and another one into the garden. Similarly, over- + V in (21a), repeated here as (37a), and the resultative construction in (21b), repeated here as (37b), are judged unacceptable, because in these examples, two distinct processes of changes of state, which are metaphorically understood as paths of movements, are predicated of the subject within each clause:

(37) a. *She overate herself sick. (=21a))

b. *He wiped the table dry clean. (=21b))

The following subsections examine how over- + V is formed through the modification and conflation of LCSs.

3.2. Over- + V Formed through Modification of a Result or GOAL

This subsection examines complex predicates with over- formed through modification of a resultant state or GOAL in the base LCS. For example, the LCS of overheat is represented as in (38b):

(38) a. heat: [x CONTROL [y BECOME [y BE AT-HOT]]

b. overheat: [x CONTROL [y BECOME [y BE AT-OVER-}

9 The figure in (34a) is originally developed in Kageyama (2001) in order to explain the difference in nominalization between English and Japanese. In this paper, I will assume that the predicate [TO GOAL] as well as [BE AT] belongs to 'state/location.'
In (38b), OVER modifies the result of the change of state in the LCS of the base verb *heat* in (38a).

If OVER modifies a result or a goal argument in LCS, the modified result or goal argument, as already proposed in 3.1, is syntactically realized as the internal argument of the derived verb prior to other elements. By way of example, observe the following sentence and representations:

(39) John overthrew *the ball/first base. (Yumoto (2001: 291))

(40) a. throw: [x CONTROL [y MOVE [y TO z]]]
    b. overthrow: [x CONTROL [y MOVE [y TO OVER-z]]]
    b'. overthrow: [x CONTROL [y MOVE [y TO OVER-\textsc{GOAL}]]]

The goal argument *first base* is realized as the internal argument of *overthrow* instead of the theme argument *the ball*, as shown in (39). In the LCS representation of *overthrow* in (40b), OVER modifies the goal argument (i.e. z), and this argument is syntactically realized as the internal argument of *overthrow* prior to the theme argument (i.e. y).

I will also add that the theme argument y in (40b) cannot be realized as an internal argument anymore, after the goal argument z is selected as the candidate for the internal argument. In other words, in (40b), y is deprived of a license to be an internal argument when the license is transferred to z. The resultative construction and over- + V cannot appear in the double object construction, as already observed in (22), repeated here as (41):

(41) a. *John cooked Mary the egg hard. (= (22a))
    b. *John overthrow Bill the ball. (= (22b))

The sentences in (41) are judged unacceptable, because although the goal arguments, Mary and Bill, appear as the internal arguments of the derived verbs, the theme arguments, the egg and the ball, are also realized as the internal arguments of the same verbs.

The goal argument (i.e. z in (40a)) of *throw* is not necessarily obligatory, and if OVER modifies the predicate GOAL instead of z, as in (40b'), the theme argument y, which is the only candidate for an internal argument, is realized as the internal argument of *overthrow*, as illustrated in (42): \(^{10}\)

---

\(^{10}\) I will tentatively stipulate that GOAL can appear instead of an argument (i.e. z
(42)  a. However, Harris overthrew the ball slightly and Hale had to leap to make the catch and fell down with the ball just two yards short of the first down at the Cal 49-yard-line, with no Sun Devil around him.
b. "We were running a post play and I overthrew the ball," said Culpepper, who was 16-of-29 for 234 yards with a TD and two interceptions.

I will assume that a result and a goal argument rather than a theme argument are also realized as an internal argument when the theme argument appears as a constant argument in LCS. For example, in (43), the goal argument the wagon is realized as the internal argument of overload instead of the theme argument hay:

(43)  John overloaded {the wagon/*hay}.  (Yumoto (1997: 191))

Following Maruta (1997, 2000b), I will provide the two LCS representations in (45) for the verb load, based on the fact that load participates in Locative Alternation illustrated in (44) (Levin (1993)). The LCS representation for load in (44a) corresponds to (45a), while load in (44b) is given the representation in (45b):

(44)  a. Jessica loaded boxes on the wagon.  (locative variant)
     b. Jessica loaded the wagon with boxes.  (with variant)

(Levin (1993: 118))

(45)  a. locative variant: [x CONTROL [y MOVE [y TO [ON z]]]]
     b. with variant: [x CONTROL [y BECOME [y BE AT-[LOAD]EN]]]

According to Maruta (1997), an argument like LOAD in (45b) is called a constant argument. Maruta (2000b) proposes that a constant argument belongs to 'pseudo-complement,'11 which is positioned between a complement and a pure adjunct. A constant argument as well as a pure adjunct is optionally realized in the syntactic level as shown in (46), but it has stronger semantic relation with a verb than a pure adjunct:

(46)  John loaded the wagon (with hay).  (Maruta (2000b: 245))

in (40b)) when the goal of the movement is obvious to the speaker and the hearer.

The examples in (42) are cited from the following websites:
http://calbears.ocsn.com/sports/m-footbl/recaps/100700aaa.html
http://www.chicagobears.com/games/recap.cfm?game_id=155955

Emphasis is mine.

11 The notion of 'pseudo-complement' is originally developed in Verspoor (1997).
I will propose that in LCS representation, a constant argument is selected as the complement of the predicate EN. EN is a predicate that appears as the complement of AT and selects a constant argument as its complement.\(^{12}\) It represents a resultant state in which the number of an object denoted by the constant argument is increased or decreased. In (44b), the prepositional phrase with boxes appears to specify the state denoted by [BE AT-[LOAD]EN] (i.e. the state in which the load is on the increase).

If OVER modifies the goal and the result of the LCSs in (45a) and (45b), the derived representations are described as in (47a) and (47b), respectively:

\[
(47) \begin{align*}
&\text{a. } \ast \text{overload freight onto the ship } (=\text{(24a)}) \\
&\text{ }\ast \text{[x CONTROL } [y \text{ MOVE } [y \text{ TO } \text{OVER-ON } z]]] \\
&\text{b. John overloaded \{the wagon/\*hay\}. } (=\text{(43)}) \\
&\text{[x CONTROL } [y \text{ BECOME } [y \text{ BE AT-OVER-[LOAD]EN}]]
\end{align*}
\]

The representation in (47a) is, on the one hand, impossible, because this LCS violates the Unique Path Constraint. In (47a), two distinct paths are found; one is denoted by OVER, and the other is by ON. The representation in (47b) is, on the other hand, allowed without any problem, and the goal argument (i.e. y), which is the only candidate for an internal argument, is realized as the internal argument of overload as in (43). In (43), a theme argument like hay cannot be syntactically realized, because such an argument appears not as an argument like y but as a constant argument like LOAD. The LCS in (47b) correctly reflects the semantics of overload that load is increased too much. The constant argument LOAD can be realized as an adjunct after the formation, as shown in (24b), repeated here as (48):

\[
(48) \text{overload the ship (with freight) } (=\text{(24b)})
\]

Resultative phrases cannot appear in the locative variant of the Spray/Load alternation either, as already observed in (23), repeated here as (49):

\[
(49) \begin{align*}
&\text{a. } \ast \text{John loaded the hay into the wagon full. } (=\text{(23a)})
\end{align*}
\]

\(^{12}\) Although Maruta (2000b: 244) proposes that the predicate ED, which appears as the complement of AT and is combined with a constant argument, represents a state in which the theme argument y is provided with an object denoted by the constant argument, I will adopt EN in order to explain not only the behavior of load, but also that of creation verbs and verbs like eat and drink.
*[x CONTROL [y MOVE [y TO [ON z] AND [z TO FULL]]]]

b. John loaded the wagon full with hay. (= (23b))

[x CONTROL [y BECOME [y BE AT-FULL-[LOAD]EN]]]

The representation in (49a) is ill-formed, because MOVE is specified by two distinct paths; [y TO [ON z]] and [z TO FULL]]. In (49b), FULL modifies the resultant state [LOAD]EN], and the representation correctly reflects the interpretation that the wagon is full with increased hay.

Finally, let us discuss the formation of complex predicates composed of over- and cooking verbs and creation verbs like overbake and overbuild. Although Yumoto in Kageyama and Yumoto (1997: 88) argues that complex predicates composed of over- and creation verbs like overbake cannot be formed, there are, in fact, many examples like (50) where overbake appears.13

(50) a. Don’t overbake the cookies or they will be dry.

b. Be sure that you do not overbake this cake or it will be dry.

In (50), the base verb bake is interpreted as a cooking verb rather than a creation verb; overbake in (50) implies changes of states of cookies or cakes rather than creation of them.

I will distinguish between a creation verb and a cooking verb (Kageyama (1996), Levin (1993)), and provide distinct representations for them. Firstly, the LCS of a cooking verb like bake is represented as in (51):

(51) bake: [x CONTROL [y BECOME [y BE AT BAKED]]]

In this structure, a cooking verb such as bake is regarded as a verb of a change of state like heat in (38a). In (51), [y BECOME [y BE AT BAKED]] represents a process of baking. I will assume, following Kageyama (1996: 160), that a creative reading of a cooking verb is derived through the deletion of the subject of BECOME (i.e. y), as shown in (52):

(52) bake: [x CONTROL [BECOME [y BE AT BAKED]]]

Cooking verbs with a change-of-state reading can appear in the mid-

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13 The examples in (50) are cited from the following websites:
Emphasis is mine.
dle construction, as shown in (53). This fact serves as evidence for the LCS representation in (51):

(53) a. Idaho potatoes bake beautifully.
    b. Jennifer baked the potatoes to a crisp.

(Levin (1993: 244))

According to Ono (1997), the middle construction is formed through foregrounding the state component in the Event Structure. In other words, the middle sentences in (53) are formed through foregrounding BAKED in (51); therefore, bake in these examples is interpreted as a verb of a change of state.

If OVER modifies the state (i.e. BAKED) in (51), the resultant LCS is represented as in (54):

(54) overbake: \[x \text{ CONTROL} \{y \text{ BECOME} [y \text{ BE AT OVER-BAKED}]\}\]

In (54), we can gain an interpretation that the degree of the state is excessive. Thus, as observed in (50), overbake is allowed in the case of a change-of-state reading. The same explanation can be applied to other cooking verbs with over- like overcook.

Secondly, the LCS of a creation verb is represented as shown in (55):

(55) verbs of creation:
 \[x \text{ CONTROL} <\text{manner}> \{\text{BECOME} [y_i \text{ BE AT [CREATION]}_i \text{ EN}]\}\]

In (55), the constant argument [CREATION] is provided with the same index as the subject of BE (i.e. y). Increase of creations is denoted by the predicate EN. \([y_i \text{ BE AT [CREATION]}_i \text{ EN}]\) represents a state in which creations are brought into existence and increased.

Creation verbs, unlike cooking verbs like bake, can never appear in the middle construction, as shown in (56):

(56) *Skyscrapers don’t build easily. (Kageyama (1996: 277))

The sentence in (56) is judged unacceptable, because, in this case, [CREATION]EN] is foregrounded in the process of middle formation. The middle sentence in (56) would not imply that it is not easy to increase the number of skyscrapers; it would imply that it is not easy to complete skyscrapers.

If OVER modifies the resultant state in (55), the representation in (57) is derived:

(57) overmake:
 \[x \text{ CONTROL} <\text{manner}> \{\text{BECOME} [y_i \text{ BE AT OVER-[CREATION]}_i \text{ EN}]\}\]
In this LCS, the theme argument (i.e. \( y \)) is syntactically realized as the internal argument of the derived complex predicate as shown in (58), and from this representation, we can gain the correct reading of *overmake* that products are increased too much.\(^{14}\)

(58) “The reason why it was concocted to begin with, Grandmother was raised in the Depression, so they would make spaghetti and overmake noodles and next day make mac and cheese with leftover noodles.”

In the case of *overbuild*, unlike *overmake* in (58), a locative phrase like *the city* in (59) is syntactically realized as the internal argument instead of a theme argument like *houses*:

(59) They overbuilt the city/*houses (Yamada (2000: 75))

I will assume that in the LCS of the base verb *build*, such a locative phrase appears as the complement of AT coordinating with the resultant state [CREATION]EN, as shown in (60a). The locative phrase *the city* in (60a) denotes the location where products like *houses* are posited:

(60) a. *build* with a locative prepositional phrase:

\[
[x \text{ CONTROL } [BECOME [y \text{ BE AT } \text{STATE } [\text{CREATION}]i \text{ EN}] \text{ AND } [\text{PLACE the city}]]]
\]

b. *overbuild* 1:

\[
[x \text{ CONTROL } [BECOME [y \text{ BE AT } \text{STATE OVER- [CREATION]}i \text{ EN}] \text{ AND } [\text{PLACE the city}]]]
\]

When *OVER* modifies [CREATION]EN as in (60b), the locative noun phrase (i.e. *the city*) is syntactically realized as the internal argument prior to other elements.\(^{15}\)

In the case of *overmake*, a locative phrase denotes a place where the action of making takes place rather than a location where products are posited. Thus, the locative phrase is not realized as the complement of

\(^{14}\) The example in (58) is cited from the following website:
http://www.goodeatsfanpage.com/ABFP/ABInfo/P/MacArticle.htm
Emphasis is mine.

\(^{15}\) In (i), the theme argument *houses* appears as the internal argument of *overbuild*. I will suggest that in such an example, a locative phrase is absent in the LCS of the base verb *build*; a locative phrase is not obligatory in the base structure:

( i ) They say “We need more houses for the people here.” So, we overbuild houses and they say “We need more industry to fill these houses.”
(http://www.jacknealandson.com/News/past%20issues/fall98/fall98%20mvg.htm)
AT, but adjoined to the predicate CONTROL, as shown in (61):

(61) make with a locative prepositional phrase:
    [x CONTROL [BECOME [y BE AT [STATE [CREATION]i EN]]]
    [PLACE ]]

When OVER modifies [CREATION]EN in this structure, the subject of
BE (i.e. y), the theme argument, is syntactically realized as the internal
argument as in (58).

At first sight, the representations in (60) seem to violate the Unique
Path Constraint, because we can find two distinct paths in these struc-
tures; one is denoted by [STATE [CREATION]EN], and the other is by
[PLACE the city]. According to Kageyama (1996), a change of state and
a movement can be combined together as in (62) if their processes are
consistent with each other:

(62) [y BE AT [STATE ]] + [y BE AT [PLACE ]]
    → [y BE AT [STATE ] AND [PLACE ]]               (Kageyama (1996: 234))

When a movement to be combined with a change of state is inter-
preted metaphorically, the predicate GOAL, which implies some end
point of a process of creation, appears as the complement of AT:

(63) overbuild 2:
    [x CONTROL [BECOME [y, BE AT [OVER-[CREATION]i
    EN] AND [GOAL]]]]

If OVER modifies GOAL as in (64), the derived representation gives an
interpretation that the size or decoration of buildings goes beyond the
limits, as illustrated in (65):\(^\text{16}\)

(64) overbuild 3:
    [x CONTROL [BECOME [yi BE AT [[CREATION]i EN]
    AND OVER [GOAL]]]]

(65) a. Life was so full that he asked people not to overmake
    the miracles they received.

\(^\text{16}\) If OVER modifies the goal argument as in (i), the derived LCS gives an inter-
pretation that buildings are built at the place denoted by this argument. It goes
without saying that the goal argument rather than the theme argument is syntactically
realized as an internal argument:

( i ) [x CONTROL [BECOME [y BE AT [STATE ] AND OVER [PLACE ]]]]

The example in (65a) is cited from the following website:
http://latter-rain.com/archive/1-5-2001.htm

Emphasis is mine.
b. In contrast, when companies that have built 200-foot yachts—like that which builds the Leopard—set out build a 75-foot day boat, they approach it from the standards of large ocean-going vessels. Such companies, contends Chahine, are more likely to overbuild the boat.

(Yamada (2000: 75) underlines mine)

If an element identical with the subject of CONTROL appears as a goal argument as in (66) and OVER modifies this argument, we can gain an interpretation, from the derived LCS, that the splendor of the buildings is out of proportion to the builder. Needless to say, the modified goal argument is syntactically realized as the internal argument as in (67):

(66) overbuild 4:
\[ x_i \text{ CONTROL } <\text{manner}> \ [\text{BECOME } [y \text{ BE AT } [\text{CREATION}], \text{ EN AND OVER } [x_i]]] \]

(67) Such a person is apt to overbuild himself.


3.3. Over- + V Formed through Conflation of LCSs

This subsection examines complex predicates with over- formed through the combination of [BECOME [BE AT]] or [MOVE TO GOAL] with the base LCS, which lacks these subordinate events. By way of example, let us discuss a way to form the complex predicate overrun from the base verb run, illustrated in (68):

(68) overrun: \[ x \text{ MOVE} ] \rightarrow \[ x_i \text{ MOVE } [x_i \text{ TO OVER-GOAL}] \]

In (68), the LCS of the base verb run is combined with [TO GOAL], and OVER modifies the GOAL in the derived LCS. The formation of the resultative construction given in (69) is parallel with the one in (68).

(69) The joggers ran their Nikes threadbare. (=17b))

[the joggers MOVE [their Nikes TO THREADBARE]]

In (69), the LCS of run (i.e. [MOVE]) is combined with the predicate [TO THREADBARE]. The LCS representation in (69) is unusual in that [TO THREADBARE] represents a change of state, while [MOVE]

17 In (66), the element identical with the subject of CONTROL, like GOAL in (64), denotes an end point of a process of creation.
represents a physical movement.

Secondly, let us examine oversleep in (13a) and (16), repeated here as (70a) and (70b), respectively:

(70) a. ... he fears, when he lies down, that he will oversleep himself in the morning. (=13a))
   b. John overslept the fixed time. (=16)

(71a) and (71b) are the LCS representations of (70a) and (70b), respectively:

(71) a. ... he fears, when he lies down, that he will oversleep himself in the morning.
   [he ACT ] →
   [he ACT ] CAUSE [he BECOME [he BE-AT-OVER-SLEPT]]
   b. John overslept the fixed time.
   [John ACT ] →
   [John ACT ] CAUSE [John MOVE [John TO-OVER-fixed time]]

In (71a), the LCS of the base verb sleep (ACT) is combined with BECOME [BE AT], and OVER modifies the result of the change of state. In (71b), on the other hand, the LCS of sleep is combined with MOVE [TO GOAL], and OVER modifies the goal of this metaphorical movement. In this case, the goal is compared to the fixed time to wake up. In other words, in (70b), he passed over this goal because he was deep asleep.

If OVER in (71a) and (71b) is replaced with resultative predicates such as sober and away, respectively, the resulative construction in (72a) and (72b) is derived:

(72) a. She slept herself sober. (Goldberg (1995: 193))
   [she ACT ] →
   [she ACT ] CAUSE [she BECOME [she BE-AT-SOBER]]
   b. Sleep your wrinkles away.
   (Levin and Rappaport Hovav (1995: 36))
   [you ACT ] →
   [you ACT ] CAUSE [your wrinkles MOVE [your wrinkles TO-AWAY]]

Complex predicates like overdo, overact, and overwork in (73) are formed from base intransitive verbs like do, act, and work through the
process of conflation described in (74):^{18}

(73) a. However, Ireland overdid himself when he went on to forge a lost play, Vortigern and Rowena, in 1796. (=20a))

b. What I like about her the most, is the fact that she doesn’t overdo or overact herself when dramatic or rage-filled reactions are called for. (=20b)

c. There is, on the one hand, the laziness category, the suggestion that he doesn’t exactly overwork himself. (=20c))

(74) [x ACT ] →
[x ACT ] CAUSE [x MOVE [x TO-OVER-GOAL]]

3.4. Over- + V Formed through Both Modification and Conflation

This subsection examines complex predicates with over- which can be formed through both modification of the base LCS and conflation of LCSs. Now, let us turn our attention to overeat and overdrink. Observe the following pairs of sentences:

(75) a. Be careful! You tend to overeat these foods. (=11c))

b. She tends to overeat (herself) everyday. (=1c))

(76) a. Liqueur’s sweetness often makes it easy to overdrink cocktails. (=12a))

b. He tends to overdrink (himself). (=2b))

I will provide (77a) and (77b) as the LCS representations of the base verbs eat and drink:

(77) a. eat with a telic reading
[[x ACT<eat> y] CAUSE [y BECOME [y BE AT-[FOOD/DRINK], EN]]]

b. [x ACT<eat> (y)]

The constant argument [FOOD/DRINK] is co-indexed with the theme

^{18} When these complex predicates are derived from the transitive base verbs as in (i), the conflation described in (ii) takes place:

(i) John overdid exercise.
(ii) [x ACT<manner> y] →
[x ACT y] CAUSE [y BECOME [y BE AT-OVER-DONE]]

The argument y in the superordinate event in (ii) is licensed by <manner>, a manner constant (see 3.4).
argument y, and the predicate EN represents decrease of foods or drinks. The manner constant <eat> specifies a manner of the action, and the argument y is provided by this manner constant (Rappaport Hovav and Levin (1998), Maruta (2000a)).

As argued in Tenny (1989, 1994), the telicity of these verbs varies with their direct objects:

(78) a. Charles drank a mug of beer (for an hour/in an hour).
    b. Charles drank beer (for an hour/*in an hour).

(Tenny (1989: 12))

For example, in (78a), drink has a telic reading, while the same verb has an atelic reading in (78b); the direct object of drink is a countable noun in (78a), but it is an uncountable one in (78b). The LCSs of (78a) and (78b) correspond to (77a) and (77b), respectively. Furthermore, the existence of delimiters of telicity and other pragmatic factors can determine the telicity of a verb as well as its direct object. The representation in (77b) is the base LCS of eat and drink, and the representation in (77a) is extended from this base LCS (cf. Rappaport Hovav and Levin (1998)).

Going back to (75) and (76), let us examine (79a) and (79b), the LCS representations of (75a) and (75b), respectively:

(79) a. Be careful! You tend to overeat these foods.
    [[you ACT<eat> these foods] CAUSE [these foods BE AT-OVER [FOOD]i EN]]
    b. She tends to overeat (herself) everyday.
    [she ACT<eat> ] CAUSE [she MOVE [she TO- OVER GOAL]]

Eat in (75a) is provided with the LCS representation in (77a) because a delimiter such as these and the countable direct object foods imply the telic reading of (75a). Since there is no such delimiter and direct object in the case of (75b), eat in (75b) is provided with the LCS representation described in (77b). In (79a), OVER modifies the result of the change of state in the LCS of the base verb eat. This representation denotes that foods are eaten too much. In (79b), on the other hand, the LCS of eat (i.e. [ACT]) is combined with [MOVE [TO GOAL]], and OVER modifies GOAL. In the case of (79b), the movement denoted by [MOVE] is a metaphorical one, and the goal of the movement is compared to a limit of one’s stomach. In other words, in (75b), she tends to overpass the limit of her stomach because she
always eats too much. The same explanation can be applied to (76a) and (76b).

The unacceptability in (1b) and (2a), repeated here as (80a) and (80b), is due to the properties of their direct objects:

(80)  a. *She tends to overeat chocolate every day.
    b. *He tends to overdrink beer.

Since the direct objects in (80a) and (80b) are uncountable or mass nouns, *eat and *drink in these examples are provided with atelic readings and their LCS representation is represented as in (77b). Thus, in (80a) and (80b), the modification of LCS observed in (79a) is impossible; the only possible pattern of formation is the conflation of [ACT] and [MOVE [TO GOAL]] as observed in (79b)."19

If OVER in (79b) is replaced with other resultative predicates such as sick, the resultative construction in (81) is derived:"20

(81)  a. He ate himself sick.
    b. [he ACT<eat> ] → [he ACT<eat> ] CAUSE [he MOVE [he TO- SICK]]

To sum up, I will conclude that with regard to the complex predicate over- + V, the inheritance of argument structure from the base verb depends on in which way over- + V is formed. If OVER modifies a result or a goal of the LCS of the base verb, the argument structure of the base verb is inherited to the complex predicate. If the conflation of

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19 The LCS representation in (i) is logically possible:

(i) [x ACT ON y] CAUSE [x BECOME [x BE AT-[FOOD/ DRINK] EN]]

In (i), [ACT ON] is combined with [BECOME BE AT-[FOOD/ DRINK] EN]]. The argument in the subordinate event is co-referential to the agent in the superordinate event and realized as a reflexive object. In this structure, two candidates to be syntactically realized as the internal argument of eat, y and x, cannot be linked together, and the representation in (i) is ill-formed.

20 The following examples indicate that a reflexive object is optional in the case of over- + V (cf. (ib)), while it is obligatory in the case of the analytic resultative construction (cf. (ia)):

(i) a. He ate *(himself) sick.
    b. She tends to overeat (herself).

I suggest that the optionality of a reflexive object in the case of over- + V is attributed to the fact that a complex predicate with over-, unlike the analytic resultative construction, is realized as an independent verb. This optionality of a reflexive object can be related to the historical phenomenon that in English, several intransitive verbs have been derived from transitive verbs with reflexive objects through the omission of these reflexive objects.
LCSs takes place, a new argument, which does not exist in the LCS of the base verb, appears in the derived LCS of the complex predicate.

4. Complex Predicates in English and Compound Verbs in Japanese

Section 3 has shown that complex predicates with over- are formed at the level of LCS in the same way as the resultative construction. Complex predicates with over- in English correspond to Japanese compound verbs like tabe-sugiru ‘overeat’ in (82a) and nomi-sugiru ‘overdrink’ in (82b), as already observed in Section 1:

(82) a. Kanojo-wa chokoreito-o tabe-sugita. (=4a))
     she-Top chocolate-Acc overate
     ‘She overate chocolate.’

     b. Kare-wa biiru-o nomi-sugita. (=4b))
     he-Top beer-Acc overdrank
     ‘He overdrank beer.’

Kageyama (1993) assumes that compound verbs like tabe-sugiru are formed at the level of syntax, not at the level of LCS.21

I will argue that the difference between English complex predicates and Japanese compound verbs in the level of formation can be reduced to the difference between the two languages in a boundedness parameter

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21 Ken-ichi Takami (personal communication) points out that in a certain context, a compound verb like koware-sugiru ‘overbreak’ is considered to be natural. Some speakers allow compound verbs such as hiraki-sugiru ‘overopen’ and ni-sugiru ‘overresemble’ in a colloquial expression. English complex predicates that correspond to these Japanese compound verbs are all ill-formed in any situation (see note 6). I will assume that the marginal acceptability of these Japanese compound verbs is due to their syntactic structures. Yumoto in Kageyama and Yumoto (1997) argues that at the syntactic level, the complement of the supplementary verb sugiru ‘overdo’ is not a base verb itself, but a whole clause projected by the base verb, as shown in (i):

(i) a. Kanojo-wa chokoreito-o tabe-sugita.
     she-Top chocolate-Acc overate
     ‘She overate chocolate.’

     b. [[Kanojo-wa chokoreito-o tabe VP] sugita VP]
A compound like koware-sugiru is allowed when the semantics of the whole clause projected by the base verb is compatible that of sugiru ‘overdo.’ Thus, the acceptability of such a compound verb sometimes varies according to circumstances. Over- in English, on the other hand, modifies LCS of a base verb itself, and the acceptability is fixed regardless of the speaker.
Ikegami (1981) argues that English and Japanese belong to *suru* ‘do’ type languages and *naru* ‘become’ type languages, respectively. In Kageyama (1996), the difference between *suru* ‘do’ type languages like English and *naru* ‘become’ type languages like Japanese is illustrated as in (83):

(83) difference in the perspectives of languages

\[
\begin{align*}
\text{English} & \quad \text{CAUSE} \quad \text{Japanese} \\
[x \text{ ACT ON } y] & \quad \text{BECOME } [y \text{ BE AT-z}] \\
\end{align*}
\]

(Kageyama (1996: 290))

The diagram in (83) indicates that in English, [ACT ON] is focused and the viewpoint of the speaker is directed from this [ACT ON] to a result, while in Japanese, [BECOME] is focused and the viewpoint of the speaker is directed from this [BECOME] to an action and a result.

In Kageyama (2001, 2002), this difference in the speaker's perspectives between English and Japanese is reduced to the difference in a boundedness parameter between the two languages:

(84) Boundedness Parameter

\[
\begin{align*}
[+ \text{ Bounded}] & \quad [0 \text{ Bounded}] & \quad [- \text{ Bounded}] \\
\text{English} & \quad \text{Japanese} & \quad \text{Chinese} \\
[\alpha \text{ Bounded}] & \quad & \\
\end{align*}
\]

(Kageyama (2001: 13))

English and Japanese are given [+Bounded] value and [0 Bounded] value, respectively, as shown in (84). The boundedness parameter fixes whether there is a tendency toward an ‘event boundary’ in the action chains of events like the one in (34a) (Kageyama (2001)). [+Bounded] English has a strong tendency toward the ‘event boundary,’ as already argued in Section 2. [0 Bounded] Japanese, on the other hand, is neutral as to boundedness; as indicated in (83), the viewpoint of the speaker is directed to both the event boundary and [ACT ON].

Kageyama (1996) argues that the derived resultative construction in English can be formed at the level of LCS through the conflation of [ACT (ON)] with [BECOME [BE AT]] as in (85), as already reviewed in Section 3:

(85) \[
[x \text{ ACT (ON } y)] \quad \text{CAUSE } [y \text{ BECOME } [y \text{ BE AT-z}]]
\]

According to Kageyama (2002), the conflation of events is only allowed
in [+Bounded] English. In [0 Bounded] Japanese, the derived resultative construction is prohibited as shown in (86a):22

(86) a. *Kare-wa kinzoku-o tairani tataita.
   he-Top the metal-Acc flat pounded
   'He pounded the metal flat.'

   a'. Kare-wa kinzoku-o tataki-nobashita.
   he-Top the metal -Acc pound-flattened
   'He pounded and flattened the metal.'

b. Kare-wa kakine-o shiroku nutta.
   he-Top the fence -Acc white painted
   'He painted the fence white.'

The conflation of events is not allowed in Japanese, because there is no tendency to event boundary (Kageyama (2002)). In Japanese, only the inherent resultative construction is allowed, as in (86b). In Japanese, compound verbs like tataki-nobasu in (86a'), which is supposed to be formed not at the level of LCS but at the level of argument structure in Kageyama (1993, 1996), correspond to the derived resultative sentences in English (Kageyama (1996, 2002)).

If it is assumed that over- + V is a kind of the resultative construction, the reason why compound verbs in Japanese, which correspond to complex predicates in English, are formed at the level of syntax is clarified. Since in Japanese, compared to English, the operation to derive the resultative construction is incomplete in LCS, expressions that correspond to complex predicates with over- and the derived resultative construction cannot be formed in the same way as complex predicates with over- and the resultative construction in English. In other words, an operation other than conflation is needed for the productive formation of expressions with resultative predicates like over- and flat in (86).

In Kageyama (2001, 2002), the following three operations are proposed; 'conflation of LCS,' 'cloning of LCS' and 'supplementation of LCS.' It has been already observed that conflation of LCS is not allowed in [0 Bounded] Japanese. According to Kageyama (2001, 2002), 'cloning' and 'supplementation' are allowed in [0 Bounded]

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22 In the future, I would like to consider empirical problems of the analysis of the resultative construction in Kageyama (1996) pointed out by Takami and Kuno (2002).
Cloning is an operation to copy a part of LCS and add the copied structure to the base LCS. \([\text{ACT ON}]\) in (87), for example, is copied from \([[[x \text{ ACT}] \text{ CAUSE} [y \text{ BECOME} [y \text{ BE AT} z]]]]\), and added to the base LCS.

\[(87) \quad [x \text{ ACT}] \text{ CAUSE} [y \text{ BECOME} [y \text{ BE AT} z]] \rightarrow [x \text{ ACT}] [x \text{ ACT}] \text{ CAUSE} [y \text{ BECOME} [y \text{ BE AT} z]]\]

However, expressions that correspond to *over- + V* and the derived resultative construction cannot be formed through this operation when the base LCS lacks \([\text{BE AT}]\) and \([\text{TO GOAL}]\). In other words, resultative predicates like OVER cannot be realized in any part of the LCS if \([\text{BE AT}]\) and \([\text{TO GOAL}]\) are not copied from the LCS of the base verb.

I will propose, following Yumoto in Kageyama and Yumoto (1997), that in Japanese, expressions that correspond to *over-* + V are formed through ‘supplementation’ of the LCS of the supplementive sugiru ‘overdo’ represented in (88a):

\[(88) \quad \text{a. sugiru ‘overdo’: } [[[\text{EVENT}] \text{ MOVE} [y \text{ TO OVER-STANDARD}]\]]
\text{b. taberu ‘eat’: } [x \text{ ACT}_{\text{eat}} (y)]
\text{c. tabe-sugiru ‘overeat’: } [[[\text{EVENT} [x \text{ ACT}_{\text{eat}} (y)] \text{ MOVE} [y \text{ TO OVER-STANDARD}]]\]]\]

The representation in (88a) indicates a process that an event goes beyond standard (Yumoto in Kageyama and Yumoto (1997: 123)). OVER is already contained in this LCS. The empty subject position of \([\text{MOVE}]\) is a slot for the LCS of the verb to be inserted.

Supplementation is an operation to supplement the LCS of a verb with the LCS of another verb. In (88c), the subject position of \([\text{MOVE}]\) in the LCS of sugiru is supplemented with the LCS of the base verb taberu ‘eat’ through the insertion of the LCS of taberu into the subject position of \([\text{MOVE}]\) in the LCS of sugiru, and the compound verb tabe-sugiru is derived.

I will argue, following Kageyama (2002), that supplementation of LCS in (88c) takes place when the base verb (e.g. taberu) is combined with sugiru at the level of syntax. According to Kageyama (1996), a sentence is simultaneously formed and interpreted at the level of syntax and LCS, as shown in (89). Argument structure intervenes between the two levels:
Kageyama (2002: 33) proposes that arguments of the base verb (e.g. kanojo ‘she’ and chokoreito ‘chocolate’ in (82a)) are syntactically realized if the LCS of the base verb is inserted into the subject or complement position of predicates as in (88c). The sentence in (90) shows that the newly inserted base verb (e.g. taberu in (88c)) can be replaced by so suru ‘do so’:

(90) Kanojo-wa chokoreito-o tabe-sugi, kare mo soo shi-sugita.
    she-Top chocolate-Acc overate, he too so did-over
    ‘She overate chocolate, and he did so, too.’

Kageyama (1993) argues that this fact is evidence for suggesting that compound verbs like tabe-sugiru are formed at the level of syntax.

I will also claim that in Japanese, expressions that correspond to the derived resultative construction are formed through supplementation of LCS of a verb like nobasu ‘flatten’ that contains a resultative predicate as in (91a):

(91) a. nobasu ‘flatten’:
    [x ACT <manner> ON y] CAUSE [y BECOME [y BE AT FLAT]]

b. tataku ‘pound’: [x ACT ON y]

c. tataki-nobasu ‘pound-flatten’:
    [x ACT <tataku> ON y] CAUSE [y BECOME [y BE AT FLAT]]

In (91c), the manner constant in the LCS of nobasu is supplemented with the LCS of tataku ‘pound’ through the insertion of the LCS of tataku into the manner constant of the LCS of nobasu, and the compound verb tataki-nobasu is derived.

Supplementation in (91c) takes place when arguments of the base verb are identified with those of tataku at the level of argument structure (Kageyama (1993, 1996)). According to Kageyama (2002: 43), arguments of the base verb (e.g. tataku in (91a)) cannot be syntactically realized if the LCS of the base verb is inserted into a subsidiary element like a manner constant as in (91c). In (86a’), the arguments of nobasu (e.g. kare ‘he’ and kinzoku ‘the metal’) are syntactically realized instead. The sentence in (92) shows that the newly inserted base verb (e.g. tataku in (91c)) cannot be replaced by so suru ‘do so’:
This fact shows that compounds like *tataki-nobasu* are not formed at the level of syntax; they are formed at the level of argument structure (Kageyama (1993)).

5. Conclusion

In this paper, I have proposed that complex predicates with *over* are formed at the level of LCS in the same way as the resultative construction. I have also argued that the difference between complex predicates with *over* in English and corresponding compound verbs in Japanese in the level of derivation can be reduced to the difference between the two languages in the boundedness parameter.

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