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FAKE REFLEXIVE OBJECTS AND *RUN VERBS*^{*}

1 INTRODUCTION

This paper focuses on the occurrence of fake reflexive objects in resultative constructions with a directional phrase. Resultative constructions exhibit the structure as in (1) with the meaning that, as a result of the action meant by the matrix verb, the result phrase XP denotes the state achieved by the referent of the postverbal object NP₂ of which it is predicated.

(1) [NP₁ V NP₂ XP] where X = A, N, or P

The sentence in (2b), where the resultative phrase *green* is removed from the transitive resultative construction in (2a), is acceptable. This shows that the object which appears in resultative constructions must be licensed by the matrix verb, and therefore the sentence in (3a), where the object *the campground* is not licensed by the matrix verb *frighten*, is unacceptable (Carrier and Randall 1992).

(2) a. They painted the door green.
b. They painted the door.
(3) a. *The bears frightened the campground empty.
b. *The bears frightened the campground.

This observation leads us to conclude that intransitive verbs, which do not take direct objects, cannot appear in resultative constructions. However, the addition of a directional phrase, that is to say a resultative phrase, permits agentive verbs of manner of motion such as *jump*, *march*, *pad*, *roam*, *run*, *walk*, and *zigzag* to occur with a reflexive object. This reflexive object is not licensed by the matrix verb, so it is called a fake reflexive object.¹

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¹ Non-subcategorized objects are referred to as fake objects because these objects are not licensed by the matrix verb. See Simpson (1983).

(4) a. Kim ran herself to the store.
 b. *Kim ran herself.
 (5) a. Pam swept herself to exhaustion.
 b. *Pam swept herself.

The examples above show that agentive verbs of manner of motion which are classified into unergative verbs can appear in resultative constructions by the addition of the directional phrases. In contrast, the addition of the resultative phrases does not allow unaccusative verbs to take fake reflexive objects (Levin and Rappaport 1995).

(6) a. The door rolled open.
 b. *The door rolled itself open.
 (7) a. The shutter swung shut.
 b. *The shutter swung itself shut.

In German, fake reflexive objects can appear in resultative constructions, while fake reflexive objects in Japanese cannot (Washio 1997, 1999), as shown in (8a) and (8b) respectively.

(8) a. Fritz life sich müde. (German)
 Fritz ran himself tired
 ‘Fritz ran himself tired.’ (Boas 2003: 286)
 b. *boku-wa jibun-o kutakuta-ni odot-ta. (Japanese)
 I-TOP myself-ACC tired dance-PAST
 ‘I danced myself tired.’ (Washio 1997: 20)

As the examples above show, the appearance of the fake reflexive objects varies across languages. In Japanese, however, the occurrence of the fake object becomes more acceptable by the addition of the causative operator *sare-ru*, as shown in (9b).² The sentence in (9c) shows that this acceptance is also true of the object as well as the reflexive object.

(9) a. ??boku-wa kutakuta-ni odot-ta.
 I-TOP tired dance-PAST
 ‘I danced tired’
 b. ?boku-wa jibun-jishin-o kutakuta-ni odor-ase-ta.
 I-TOP myself-ACC tired dance-CAUSE-PAST
 ‘I danced myself tired.’
 c. boku-wa taro-o kutakuta-ni odor-ase-ta.
 I-TOP Taro-ACC tired dance-CAUSE-PAST
 ‘I danced Taro tired.’

Based on this observation, I argue that the limitation of the fake reflexive objects

² Some speakers judge the sentence in (9b) to be entirely ungrammatical, while others judge it as somewhat acceptable. Note that the addition of the reflexive fake object is a special phenomenon. Opinions may vary between speakers.

differs in degree but not in kind.³ My assumption is that the appearance of the fake objects, including fake reflexive objects, is related to the existence of the causative relation. Based on this assumption, I propose that the semantic primitive CAUSE should be included in the lexical semantic representation (below LSR) which agentive verbs of manner of motion exhibit, and as a consequence another variable, or causer, comes into being together with the addition of the semantic primitive CAUSE. These verbs have two variables at the level of the LSR, and one of two variables is realized as a fake reflexive object under some pragmatic constraints. This proposal shows that the fake reflexive object which is not licensed by the matrix verb in the syntax is really licensed on the LSR.

This paper is organized as follows: in the next section, I will examine some previous analyses of the fake objects in resultative constructions. In section 3, I will introduce the notion of conceptual structure which I employ in this article, and I will show what the verbal LSR is like. Further, I will introduce two kinds of LSR which agentive verbs manner of motion produce. In section 4, by observing the causative alternation of these verbs, I will propose that LSR is different from that I will introduce in section 3. Following this, I argue that the object called a fake reflexive object is present as a variable within the LSR. Section 5 concludes this paper.

2 PREVIOUS ANALYSES

Many researchers have so far made a great number of investigations into resultative constructions. In this section, I will survey six analyses based on three kinds of major approaches, syntactic, lexical-semantic, and constructional approaches, and then point out that these analyses cannot give a full explanation as to the distribution of the fake reflexive objects.

2.1 Syntactic Analyses and Resultative Constructions

In this section, I survey two syntactic approaches toward resultative constructions and show how these analyses account for the distribution of the postverbal NPs.

Hoekstra (1988) proposes that all resultative constructions exhibit a uniform syntactic structure independently of the type of verb. The postverbal NP and the following resultative phrase always form a Result Small Clause (Result SC), which is realized as the complement of the matrix verb. Under this analysis, the postverbal NP is not the argument of the matrix verb, specifically not the syntactic object, but the subject of the complement. Whether the occurrence of the Result SC is allowed by the verb depends on the type of verb, stative or non-stative. Since non- stative verbs,

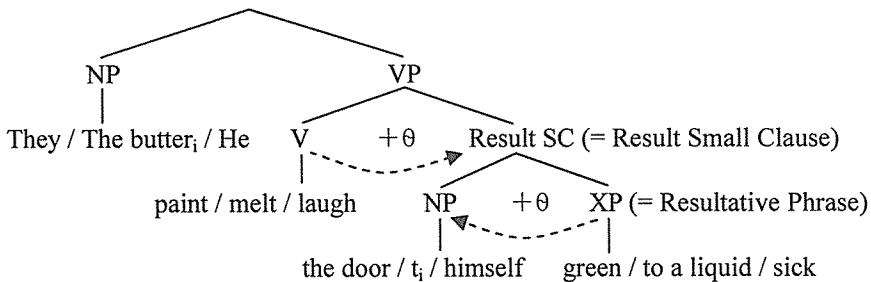
³ Reinhart and Siloni (2004) argue that reflexivization is essentially the same phenomenon across languages.

which denote an activity or process, have an optional result argument, they can take Result SC. In contrast, stative verbs not having an optional result argument cannot take Result SC.

(10) a. They painted the door green. (Transitive Verb)
 b. The butter melted to a liquid. (Unaccusative Verb)
 c. He laughed himself sick. (Unergative Verb)

According to Hoekstra's analysis, the sentences in (10a-c) are illustrated by the following structure:

(11) Binary Small Clause Analysis



The point of this analysis is to treat the resultative constructions with a fake reflexive object in the same way that resultative constructions based on transitive verbs are analyzed. The fake reflexive object *himself*, like the direct object *the door* licensed by the transitive verb, is assigned θ-role not by the matrix verb but by the resultative phrase. In addition to this syntactic structure, Hoekstra (1988) discusses a semantic relation: the immediately postverbal NP has a semantic relation with the following result complement. This consequence leads Hoekstra to conclude that the Binary Small Clause Analysis is motivated.

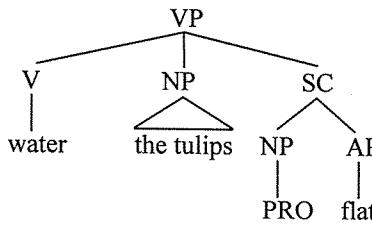
Carrier and Randall (1992) make objections to both the Binary Small Clause Analysis and the Hybrid Small Clause Analysis, and propose the Ternary Analysis. The Binary Small Clause Analysis assigns binary-branching VPs to both intransitive and transitive resultative constructions, while the Hybrid Small Clause Analysis assigns a binary-branching VP to intransitive resultative constructions and a ternary-branching VP to transitive resultative constructions.

Under the Hybrid Small Clause Analysis, the postverbal NP for transitive resultative constructions is a sister of the verb and therefore potentially an argument of the verb. In intransitive resultative constructions, on the other hand, the result phrase, which is represented as AP, is not a sister of the verb and therefore not its argument. According to this analysis, the sentences in (12a-b) are depicted in (13a-b).

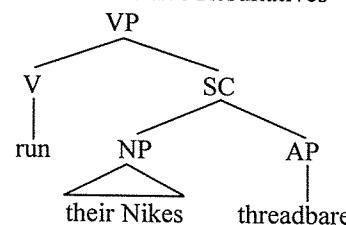
(12) a. The gardener watered the tulips flat.
 b. The joggers ran their Nikes threadbare.

(13) The Hybrid Small Clause Analysis

a. Transitive Resultatives



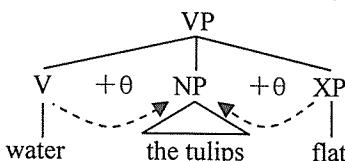
b. Intransitive Resultatives



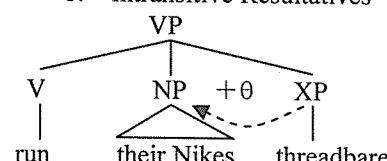
Like the Binary Small Clause Analysis and unlike Hybrid Small Clause Analysis, the Ternary Analysis assigns a uniform syntactic structure to transitive and intransitive resultative constructions, as shown in (14a-b).

(14) The Ternary Analysis

a. Transitive Resultatives



b. Intransitive Resultatives



(Carrier and Randall 1992: 180)

Under the Ternary Analysis, transitive and intransitive resultative constructions differ with respect to Argument Structure, though the two constructions show the same syntactic structure. According to Carrier and Randall (1992), adjectives belong to the category which takes a single external argument. Therefore, the postverbal NP is assigned two θ-roles: a role assigned from the matrix verb because it is the direct internal argument, and one assigned from the result phrase because of its external argument. The postverbal NP for transitive resultative constructions is an argument of both the verb and the result phrase. On the other hand, the postverbal NP for intransitive resultative constructions is not an argument of the verb but an argument of the result phrase.

In this section, I have examined some syntactic analyses. These analyses show that a fake reflexive object is licensed not by a matrix verb but a resultative phrase, and in the absence of a result phrase, therefore, intransitive constructions based on ergative verbs are unacceptable. Indeed, it is necessary to create a semantic relation between an object and a result phrase, but agentive verbs of manner of motion can take a fake object without a resultative phrase (see section 4.3), resulting in the unacceptability of the analysis which studies that a fake object is licensed by the resultative phrase alone. In section 4.3, I will account for the appearance of a fake object by another restraint.

2.2 Constructional Approaches to Resultative Constructions

Let us turn to the constructional analysis of resultative constructions. In this section, I review two analyses which Boas (2003) and Goldberg and Jackendoff (To appear) make of fake reflexive objects in intransitive resultative constructions.

Boas (2003) proposes that fake reflexive objects be realized as a result of the fact that under certain circumstances humans perceive their bodies as two separate entities, agents and patients. In other words, bodies can be construed as patient arguments that are undergoing some change of state caused by the agent, and the patient must, therefore, be explicitly mentioned in order to convey this specific viewpoint.

The information that a verb contains consists of two types of information; 'on-stage' information and 'off-stage' information. The former is what is called lexical meaning, or knowledge of a language, and the latter is encyclopedic knowledge, or real-word knowledge. Specifically, 'on-stage' information includes information about the prototypical event participants of an event-frame. For example, this information on the verb *run* under normal contextual background conditions is (1) a runner and (2) an energetic movement from point A to point B.

In contrast, 'off-stage' information is not usually expressed because it is by default associated with the word by the rest of the speech community. This information about the verb *run* includes the following information: running necessities the use of legs and feet, westerners typically wear shoes to run, energy is expended when running.

Let us consider the appearance of the fake reflexive object *himself* in (15b).

- (15) a. Chris ran home.
- b. Chris ran himself home.

According to his analysis, the fake reflexive object *himself* is licensed by world knowledge about running events that is contained in the 'W' off-stage information of the event-frame for *run*. This knowledge allows the fake reflexive objects to be realized in the immediately postverbal position according to the Linking Principle.⁴

In addition, Boas (2003) investigates the verbs denoting motion which cannot enter into resultative constructions, as shown in (16-17).

- (16) a. Pat zigzagged across the street.
- b. *Pat zigzagged herself across the street.
- (17) a. Eric roamed downtown.
- b. *Eric roamed himself downtown.

Though the verbs in (16) and (17) are the same agentive verbs of manner of motion as the verb *run*, the verb *run* can occur with the fake reflexive object, whereas those

⁴ Boas (2003: 244) defines Fake Object Licensing Condition as follows: (i) Agents are linked to subject position, patients are linked to direct object position, (ii) Resultative phrases conveying information about the prototypical end location of the agent are realized in immediate postverbal position, and (iii) Resultative phrases conveying information about the end result state or location of the non-prototypical patient are realized in immediate post-patient position.

verbs cannot. This different behavior is due to the difference in the event-frames that the verb *run* and the verbs in (16) and (17) express. The event-frames shown by the verbs in (16) and (17) only include the information representing the Agent and its directional property. The realization of the fake reflexive objects is closely connected with the encyclopedic knowledge of a verb, or its off-stage information.

Let us now turn to the relation between the verbal subevent and the constructional subevent. The meaning of a resultative sentence contains two separable subevents: the verbal subevent, which is determined by the matrix verb, and the constructional subevent, which is determined by the construction (Goldberg 1995, and Goldberg and Jackendoff to appear). In order to account for the issue of argument sharing between the verbal and constructional subevents, they propose Full Argument Realization, or the condition that both the argument obligatorily licensed by the verb and the syntactic arguments licensed by the construction must be simultaneously realized in the syntax, sharing syntactic positions if necessary in order to achieve well-formedness.

For example, consider the following resultative constructions with fake reflexive objects. Both the verb *walk* and the verb *pad* are verbs of motion. In spite of the fact that they contain the same subject, object and path phrase, however, the sentence in (18a) can be acceptable, while the sentence in (18b) cannot be acceptable:

(18) a. Bill walked himself into a coma.
b. *Bill padded himself into a coma.

Whether a verb requires an obligatory PP expressing a path argument can account for this difference.

(19) a. Bill walked (around the room) for hours.
b. Bill padded *(around the room) for hours.

The verb *pad* obligatorily requires a path phrase, while the verb *walk* does not obligatorily require it. This property of verbs and Full Argument Realization make the sentence in (20b) unacceptable.

(20) a. Bill walked himself into a coma.
Constructional subevent:
Agent: Bill; Patient: himself; Property: into a coma
Verbal subevent: Agent / Theme: Bill; Path: *implicit*
b. *Bill padded himself into a coma.
Constructional subevent:
Agent: Bill; Patient: himself; Property: into a coma
Verbal subevent: Agent / Theme: Bill; Path: *implicit*
c. *Bill padded himself into the room into a coma.
Constructional subevent:
Agent: Bill; Patient: himself; Property: into a coma
Verbal subevent: Agent / Theme: Bill; Path: into the room
(Goldberg and Jackendoff to appear)

Because the verb *walk* does not obligatorily require a path phrase, the Path in the verbal subevent of the verb is represented as implicit and its Path argument need not be expressed. Hence, the sentence in (20a) does not violate FAR. On the other hand, the verb *pad* obligatorily requires the Path argument, so the Path argument must be expressed. As a result of this, the sentence in (20b) violates FAR. In (20c), furthermore, both the path PP and property PP are expressed. (20c) is also in violation of FAR, because a shared argument must have parallel thematic roles in the subevent.

In short, Goldberg and Jackendoff (To appear) formulate the analysis as directly as possible in terms of the mappings between a form and a meaning, by employing the conditions of FAR. However, they cannot give a full explanation as to the appearance of a fake reflexive object. According to them, a fake reflexive object is present in a constructional subevent, but not a verbal subevent. In other words, a fake reflexive object is required in order to fill an argument which include resultative constructions. A construction will be formed by verbs which have common property, so an argument which is on the syntax must be licensed by the verb. Therefore, their analysis, in essence, does not account for the appearance of a fake reflexive object.

2.3 Analyses based on Lexical Conceptual Structure

In this section, I will review the two lexical-semantic analyses of resultatives.

First, a verb in resultative construction is derived from the base verb according to the operation of lexical subordination which is at work at the level of the Lexical Conceptual Structure (Levin and Rapoport 1988, Rapoport 1993). This process takes a verb root in its basic or original meaning such as the LSRs illustrated in (22a) and (23a), and subordinates it as a means or manner component under the semantic primitive CAUSE, resulting in the derivation of a complex LSR shown in (22b) and (23b) respectively.⁵

- (21) a. Ethan wiped the counter dry.
b. Ayala laughed herself sick.
- (22) a. wipe₁: [x 'wipe' y]
b. wipe₂: [x CAUSE [y BECOME (AT) z] BY [x 'wipe' y]]
- (23) a. laugh₁: [x DO 'laugh']
b. laugh₂: [x BECOME (AT) z] BY [x DO 'laugh']]

The LSR of the verb in resultative constructions is different from that of its base verb. Specifically, the operation of lexical subordination allows the new verb to have an additional variable (z), which is not present in the LSR of its original verb. In addition, the causative meaning of the resultative construction is derived from the LSR of the subordinated verb.⁶

⁵ Baker (2003: 221) argues that “ordinary transitive verbs are decomposed into (at least) three elements: they have a representation like [x CAUSE [y BE [ADJECTIVE]]]...”

⁶ Carrier and Randall (1993) claim that resultative verbs are derived from base verbs by a lexical rule.

Second, I review a primal analysis of resultative constructions. Under this analysis, the resultative construction with direct object, including fake reflexive object, is considered a construction which consists of two subevents, and whether a fake reflexive object appears in the syntax depends on the relation between those subevents (Levin and Rappaport 1995, Kageyama 1996, Rappaport and Levin 2001, and others).

For example, let us consider the sentence in (24a). This sentence is composed of the first subevent representing that he drank something and the second subevent expressing that he fell asleep, and the semantic primitive CAUSE connects the first subevent with the second subevent. When the subject in the first subevent is identical with that in the second subevent, the subject in the second subevent is realized as a reflexive pronoun. In contrast, the elimination of the reflexive pronoun leads to the unacceptability of the resultative construction, as demonstrated in (24b):

(24) a. Bill talked himself hoarse.
 b. *Bill talked hoarse.

The elimination of the direct object means that the subject in the second subevent is not filled with the variable. As mentioned above, the verb which enters into the resultative construction with an object contains the LSR shown in (25), and therefore the variables x and y in this representation are realized as a subject and an object respectively.

(25) [[x ACT (ON y)] CAUSE [y BECOME <STATE / PLACE>]]

In brief, a fake reflexive object is required so that a subject position in the second subevent will be filled with the variable. Accordingly, it matters little whether the object is licensed by the verb. Like constructional approaches, these analyses account for the existence of a fake reflexive object by capturing the meaning of a construction. Therefore, these proposals also offer a poor explanation for the appearance of a fake reflexive object.

3 THEORETICAL FRAMEWORK

In this section, I offer an outline of a model of a Lexical Conceptual Structure. But I will introduce only parts which are concerned with the items I deal with in this paper.⁷

Jackendoff (1990) proposes that the innate formation rules for conceptual structure include a repertoire of major conceptual categories, which contain entities such as Thing, Event, Place and Path. Each category permits a variety of more specific elaborations, which can be stated as specialized formation rules. As some of the most important for the spatial domain, he lists the following conceptual categories:

⁷ See Jackendoff (1990) and Rappaport and Levin (1998) for details.

(26) a. [PLACE] → [Place PLACE-FUNCTION ([THING])]
 b. [PATH] → [Path TO/FROM/TOWARD/VIA ([THING/ PLACE])]
 c. [EVENT] → [Event GO ([THING], [PATH])]
 d. [EVENT] → [Event STAY ([THING], [PLACE])]
 e. [EVENT] → [Event CAUSE ([THING/EVENT]), [EVENT]]]

For example, the LSR of the verb *run* gives the following structure, which is that of the motion verbs:

(27) run: [Event GO ([Thing], [Path])]

According to Jackendoff (1990), the syntactic structure with the verb *run* corresponds to the conceptual structure expressed in (28b). Specifically the subject of the sentence corresponds to the first argument of GO, and PP corresponds to the second argument.

(28) a. $[_S [_NP \text{ John}] [_VP \text{ ran} [_PP \text{ into} [_NP \text{ the room}]]]]$
 b. $[_{\text{Event}} \text{ GO} ([_{\text{Thing}} \text{ JOH}], [_{\text{Path}} \text{ TO} ([_{\text{Place}} \text{ IN} ([_{\text{Thing}} \text{ ROOM}])]))]$

Rappaport and Levin (1998) also argue that verbs are given an articulated LSR taking the form of a predicate decomposition. A predicate decomposition is made up of two major types of components, primitive predicates and “constants”. Specific combinations of semantic primitives, ACT (ON), CAUSE, BECOME, represent the structural aspect of verb meaning, and the constants, THING, STATE, PLACE, represent the idiosyncratic element of meaning. The various combinations of semantic primitives constitute the basic stock of LSR of a language. A verb’s meaning consists of an association of a constant with a particular LSR. Universal Grammar provides an inventory of the LSRs consisting of various combinations of semantic primitives. The inventory of the LSR is illustrated in (29).⁸

(29) a. [x ACT<*MANNER*>] (Activity)
 b. [x <*STATE*>] (State)
 c. [BECOME [x <*STATE*>]] (Achievement)
 d. [[x ACT<*MANNER*>] CAUSE [BECOME [y <*STATE*>]]] (Accomplishment 1)
 e. [x CAUSE [BECOME [y <*STATE*>]]] (Accomplishment 2)
 (Rappaport and Levin 1998: 108)

Rappaport and Levin (1998) assume that though the set of LSRs is fixed, the set of constants is limitless. Each constant has an ontological categorization, which is drawn from a fixed set of types, STATE, THING, PLACE, etc. The ontological type of a constant determines its basic association with a particular LSR.

A LSR represents the two aspect of verb's meaning: the structural part of a verb's

⁸ <MANNER> represents a modifier constant, which is associated with the semantic primitive in a LSR that the constant modifies.

meaning, which is relevant to determining the semantic classes of verbs that are grammatically relevant, and the idiosyncratic part of a verb meaning, which distinguishes that verb from other members of the same class. Following this idea, the class of the manner of motion verbs contains the LSR shown in (30a), and the class of the externally caused verbs of change of state involves the LSR illustrated in (30b).⁹

(30) a. manner → [x ACT< *MANNER* >]
 (e.g. jog, run, creak, whistle, ...)
 b. externally caused state →
 [[x ACT] CAUSE [BECOME [y < *STATE* >]]]
 (e.g. break, dry, harden, melt, open, ...)

As mentioned above, the LSR of motion verbs is regarded as that demonstrated in (27) or (30a). This representation, however, fails to capture the fact that agentive verbs of manner of motion can participate in the causative alternation, which I will deal with in the next chapter. Kageyama (1996), therefore, proposes the following LSR for agentive verbs of manner of motion:

(31) run: [x_i ACT] CONTROL [x_i MOVE [PATH]]

The LSR in (31) is not derived from a basic form, but is inherent in agentive verbs of manner of motion. If agentive verbs of manner of motion are verbs which contain two variables, it may be possible to capture the fact that these verbs can participate in the causative alternation. I agree to the proposal that these verbs involve two variables in the LSR, because my assumption is also that agentive verbs of manner of motion contain two variables. However, I have a different proposal, which I will discuss in detail in section 4.2.1.

4 THE TRANSITIVE USE OF UNERGATIVE VERBS

4. 1 Causative Alternation

Externally caused verbs of change of state, not only in English but also in other languages, can exhibit the causative alternation, whereas unergative verbs cannot, as shown in (32) and (33) respectively.

(32) a. Pat broke the window.
b. The window broke.

⁹ Each rule pairs a constant of a particular ontological type, which is specified on the left of the arrow, with the LSR to the right of the arrow.

(33) a. The crowd laughed.
b. *The comedian laughed the crowd.
(cf. The comedian made the crowd laugh.)
(Levin and Rappaport 1995: 79-80)

According to Levin and Rappaport (1995), what distinguishes causative alternation verbs from non-alternating verbs is the difference of the LSR. In other words, transitive verbs which participate in causative alternation have a complex LSR involving the predicate CAUSE, while unergative verbs contain a lexical semantic representation without the predicate CAUSE which is composed of a single subevent.¹⁰

(34) a. Causative alternation verb: [[x ACT (ON y)] CAUSE [y BECOME z]]
b. Unergative verb: [x < Manner >]

In addition, since the class of the verbs which do not contain the semantic predicate CAUSE cannot have two kinds of variables, which are realized as a subject and an object respectively (see chapter 3), the existence of the semantic predicate CAUSE is essential for the causative alternation.

In order to account for the mechanism of the causative alternation, Levin and Rappaport (1995) proposes, by employing the operation of lexical binding, the relation between the LSR of *break* and the argument structure of both its intransitive and transitive form as follows:

(35) a.	Transitive break	
	LSR	[[x DO-SOMETHING] CAUSE
	Linking rules	↓
	Argument structure	x
		↓
		[y BECOME BROKEN]]
		↓
		< y >
b.	Intransitive break	
	LSR	[[x DO-SOMETHING] CAUSE
	Lexical binding	↓
	Linking rules	∅
	Argument structure	↓
		[y BECOME BROKEN]]
		↓
		< y >

According to Levin and Rappaport (1995), the binding of the external cause takes place in the mapping from the LSR onto argument structure. The binding of a position in argument prevents that position from being projected onto the syntax. Since the position is not projected into argument structure, there is no argument associated with this position in the syntax.

In short, the participation of a verb in the causative alternation depends upon whether the verb contains the LSR describing externally caused eventuality which

¹⁰ See Pustejovsky (1991) for discussion.

consists of two subevents. In contrast, unergative verbs give an LSR which is composed of a single event, so cannot exhibit the causative alternation. However, agentive verbs of manner of motion, which are a subclass of unergative verbs, can participate in the causative alternation. I will deal with this phenomenon in the following section.

4.2 *Causative Alternation of Unergative Verbs*

As observed in the section above, externally caused verbs of change of state can exhibit the causative alternation, whereas unergative verbs cannot. Based on this observation, Levin and Rappaport (1995) characterize causative alternation verbs as externally caused verbs. Since these verbs, which can exhibit causative alternation, have a causative LSR, the criteria for detransitivization are met. In contrast, unergative verbs do not contain a causative LSR, with the result that these verbs cannot exhibit causative alternation. However, agentive verbs of manner of motion which are a subclass of unergative verbs can participate in the causative alternation, as demonstrated in (36) and (37).

- (36) a. The lions jumped through the hoop.
- b. The trainer jumped the lions through the hoop.
- (37) a. The rats ran through the maze.
- b. The psychologist ran the rats through the maze.

(Brousseau and Ritter 1991: 54)

Brousseau and Ritter (1991) call the causative alternation shown in (36) and (37) the Compelled Movement Alternation, which occurs with agentive verbs of manner of motion. The sentences in (36b) and (37b) are derived by adding active arguments *the trainer* and *the psychologist* respectively. The lions are directly responsible for the jumping event in the sentences in (36), and the trainer is only indirectly responsible for the jumping event in (36b). The sentence in (36b) adds an indirect agent for the action. Hence, Brousseau and Ritter (1991) propose that the LSR for the transitive use of the verb *jump* is derived from the LSR for the intransitive use by adding a component of indirect causation, which is formalized as the semantic primitive CAUSE. According to Brousseau and Ritter (1991), the LCSs of the intransitive form and transitive form of the verbs *jump* and *run* are illustrated as follows.¹¹

- (38) a. LCS of *jump_a*: [x DO MOVE ...] (Intransitive Form)
- b. LCS of *jump_b*: [y CAUSE [x DO MOVE ...]] (Transitive Form)
- (39) a. LCS of *run_a*: [x DO MOVE ...] (Intransitive Form)
- b. LCS of *run_b*: [y CAUSE [x DO MOVE ...]] (Transitive Form)

¹¹ For simplicity of exposition, they only include those portions of the LCS representations that are relevant for the discussion in their paper. Hence, the LCSs given in the text are incomplete.

The observation above shows that agentive verbs of manner of motion can exhibit the causative alternation. Indeed, the suggestion which Brousseau and Ritter (1991) make may seem to be on target in some sense, but the operation that transitive form is derived from intransitive form by the addition of the semantic primitive CAUSE is unacceptable. Kageyama (1996) argues that in English, intransitive verbs, without restriction, cannot be converted into transitive verbs, so the process of causativization cannot be considered productive. Based on this analysis, we must find out the way in which intransitive verbs are derived from transitive verbs.

In the next subsection, I will revise the LSR for agentive verbs of manner of motion, which I demonstrated in chapter 3, and as a consequence give a full explanation as to why agentive verbs of manner of motion which include only one variable can take both a subject and an object without employing the derivation by the addition of the semantic primitive.

4.2.1 Proposal My assumption in this paper is that the causative meaning of the resultative constructions is not derived from some operation that adds a new semantic primitive to the base verb, but the agentive verbs of manner of motion intrinsically contain the causative meaning. As Boas (2003) mentioned in section 2.2, under certain circumstances humans can perceive their bodies as two separate entities, agents and patients. Following this idea, I argue that non-stative verbs include two kinds of subjects in the LSR. In other words, non-stative verbs, on the level of the conceptual structure, contain a causer other than an agent who actually performs the action expressed by the verb. In order to distinguish this subject from the normal subject, I will refer to this one as Conceptual Subject. Based on this assumption, I propose the following LSR:

(40) LCS for fundamental agentive verb of manner of motion
 [Event x_i CAUSE [x_i DO MOVE [_{PATH} (z)]]]

The subject of the semantic primitive DO, which is usually mapped onto the surface subject, is an agent who actually performs the action denoted by the verb, whereas the conceptual subject, the subject of the semantic primitive CAUSE, is a causer who causes the surface subject to perform the action.

Kageyama (1996) chooses the semantic primitive CONTROL but not the semantic primitive CAUSE (see section 3). I, however, argue that the semantic primitive CAUSE is included in the LSR which the agentive verbs of manner of motion show. The support for the existence of the semantic primitive CAUSE comes from the analysis that the semantic primitive CAUSE is included when there is an argument that is indirectly responsible for the action (see Brousseau and Ritter 1991: 55). Kageyama (1996) defines the notion of the semantic primitive CONTROL as follows: x CONTROL y means that x has a direct influence on y . In other words, x is directly responsible for the event expressed by y . The use of semantic primitive CONTROL may enable us to account for the difference between the following sentences:

(41) a. The trainer jumped the lions through the hoop.
 b. *The lightning jumped the horse over the fence.

(Levin and Rappaport 1995: 112)

Levin and Rappaport (1995) argues that the ‘cause’ argument in the causatives shown in (41) can only be an agent in the true sense, never an instrument or a natural force; in (41b) *the lightning* does not have a direct influence on the event, so the sentence is unacceptable. Note, however, that I argue that the subject of the semantic primitive CAUSE is a conceptual subject. The conceptual subject is not directly responsible for the event, but it is the subject of the semantic primitive DO that is directly responsible for the event. A conceptual subject is not an agent in the true sense, so the existence of the semantic primitive CAUSE is unproblematic.

In addition, the ungrammaticality of the sentence in (41b) can be explained as follows. Normally, the conceptual subject is identical with the subject of the semantic primitive DO, so the conceptual subject is mapped onto the syntax. When the conceptual subject is different from the subject of the DO, the conceptual subject is realized as a surface subject and the subject of the primitive DO as a surface object. That is to say, the surface subject that participates in the causative alternation must be the subject that appears in the intransitive use.

(42) a. The trainer jumped.
 b. *The lightning jumped.

This proposal shows that the argument that appears in the causative alternation can be constrained without providing a restriction on the cause argument.

As I mentioned above, agentive verbs of manner of motion, like transitive verbs, contain the two variables on the level of the LSR, and the intransitive use of these verbs is derived from the transitive use of these verbs. In contrast, Levin and Rappaport (1995) argues that agentive verbs of manner of motion are unaccusative verbs and the transitive use of these verbs is derived from the intransitive use by the addition of the semantic primitive CAUSE. On the evidence that the directional phrases that are optional in the intransitive use of the agentive verbs of manner of motion are obligatory in their transitive use, they argue that the causative use of agentive verbs of manner of motion is qualitatively different from that shown by verbs such as *break*.

(43) a. The horse jumped (over the fence).
 b. The rider jumped the horse over the fence.
 c. ?The rider jumped the horse.
 (44) a. The mouse ran (through the maze).
 b. We ran the mouse through the maze.
 c. *We ran the mouse.

(Levin and Rappaport 1995: 111)

They argue that the characteristic of the motion verbs in other languages is that these verbs are unaccusative verbs. In the following section, I will discuss this

characteristic.

4.2.2 *Auxiliary Selection* In Romance and Germanic languages, which exhibit alternation of 'have' and 'be' ('auxiliary selection') according to verb class, 'have' occurs with transitive verbs and unergative verbs, while 'be' occurs to varying degrees with unaccusative verbs (Sorace 2000, Bentley and Eythórssón 2003).

Levin and Rappaport (1995) also indicates that in Italian unaccusative verbs take the auxiliary *essere* 'be', as shown in the following examples:

(45) a. Gianni ha aperto la porta. (Italian)
 Gianni has opened the door
 'Gianni opened the door.'
 b. La porta si è aperta.
 the door REFL is opened
 'The door opened.'

In addition, agentive verbs of manner of motion in German and in Italian switch from the auxiliary 'have' to the auxiliary 'be', when these verbs are embedded in a predicate which has been telicized by a directional phrase.

(46) a. Hans und Rita haben/ * sind im saal Getanzt. (German)
 Hans and Rita have/ are in the hall danced
 'Hans and Rita danced in the hall.'
 b. Hans und Rita sind/ * haben in den Saal getanzt.
 Hans and Rita are/ have into the hall danced
 'Hans and Rita danced into the hall.'

(47) a. Maria ha corso/ è corsa velocemente. (Italian)
 Maria has run/ is run fast
 'Maria ran fast.'
 b. Maria è corsa/ * ha corso in farmacia.
 Maria is run/ has run to the pharmacy
 'Maria ran to the pharmacy.'

(Sorace 2000: 876)

The observation above shows that the switch from transitive verbs or unergative verbs to unaccusative verbs is caused by the addition of the directional phrase, which can delimit the event denoted by the verb. Similarly, Takezawa (1993)¹² proposes that the unergative verbs *run* switches to the unaccusative verb *run* when a directional phrase is added. The characteristic of the directional phrase is similar to that of the resultative phrase, which can delimit the event expressed by the verb (see Tenny 1994). Accordingly, the directional phrases can be considered to be the resultative phrases.

¹² Takezawa (1993) regards the manner of motion verbs as unaccusative verbs in order to account for the predication relation between the subject and directional phrase.

(48) a. hammer the metal (for an hour / * in an hour).
 b. hammer the metal flat (*for an hour / in an hour).
 (49) a. wring the towel (for an hour / * in an hour).
 b. wring the towel dry (*for an hour / in an hour).

Now, let us consider the following resultative constructions:

(50) a. However, if fire is an immediate danger, you must jump clear of the vehicle.
 b. *you must jump yourself clear of the vehicle.
 (51) a. Don't expect to swim / jog yourself sober!
 b. *Don't expect to swim / jog sober.

(Levin and Rappaport 1995: 186-87)

The resultative phrase in (50) denotes the result of a change in location, whereas that in (51) denotes the result of a change of state. This difference is parallel with the appearance of the fake reflexive objects. Therefore, Levin and Rappaport (1995) argue that agentive verbs of manner of motion enter into different resultative patterns depending on whether they describe directed or non-directed motion. In other words, the verb used in (50a) is an unaccusative verb, whereas that in (51) is an unergative verb.

Their analysis, however, is problematic. The shift of the auxiliary takes place by way of the addition of the directional phrase, namely the delimitness of the event. As Tenny (1994) mentioned above, however, all the resultative phrases, including the directional phrases, can delimit the event. Levin and Rappaport (1995) argue that the change in the auxiliary takes place only with the addition of the directional phrase, and thus they cannot account for the reason why the addition of the predicate which denotes the result of the change of state cannot permit the switch of the auxiliary to take place.

In addition, there are some cases where, in spite of the addition of the directional phrase, auxiliary selection does not take place, as demonstrated in (52):

(52) a. Paola ha nuotato/* è nuotata con perfetto stile. (Italian)
 Paola has swum / is swum with perfect style
 ‘Paola swam with perfect style.’
 b. Paola ha nuotato/* è nuotata a riva.
 Paola has swum / * is swum to the shore
 ‘Paola swam to the shore.’

(Sorace 2000: 876)

Moreover, Kageyama (1996) argues that the allowance of their analysis makes it difficult to account for the fact that transitive verbs cannot be derived from true unaccusative verbs such as *appear*, *occur*.

Accordingly, agentive verbs of manner of motion cannot be considered to be unaccusative verbs. These verbs show the transitive form on the level of the LSR, and the intransitive form is derived from the transitive form. In the next section, I will

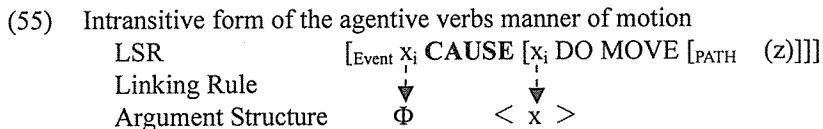
consider a way of mapping the argument onto the syntax.

4.3 The Mapping of Two Variables onto the Syntax

Finally, I consider how to realize two variables which agentive verbs of manner of motion contain. On the level of the LSR, these verbs include two variables, but these variables are not always realized at the same time, as shown in (53) and (54).

- (53) a. Kim ran.
- b. Kim ran to the store.
- (54) a. John walked.
- b. John walked to the school.

In these sentences, one of two variables is realized as a subject and the other is not an object, whether the directional phrase is added or not. This surface subject comes into being by the realization of the subject of the semantic primitive DO, but not the CAUSE. As I observed above, it is the subject of the semantic primitive DO that is directly responsible for the event denoted by the verb. Note that the subject of the semantic primitive CAUSE is a conceptual subject. Accordingly, the subject of CAUSE is normally present only in the LSR, so it is not mapped onto the syntax. The following schema shows the relation between the LSR of an agentive verb of manner of motion and the argument structure of its intransitive form:



In the intransitive form, the subject of the semantic primitive CAUSE is not realized, and as a consequence the intransitive form does not contain the causative meaning. This is because the causative meaning expressed by the semantic primitive CAUSE is produced from the realization of its subject. The intransitive form includes only the meaning denoted by DO, an agent performs an action of his own accord.

Next, let us consider the transitive form of agentive verbs of manner of motion, as shown in (56) and (57):

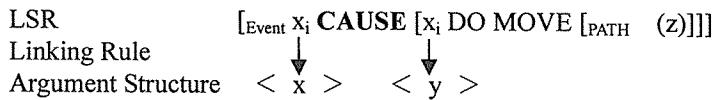
- (56) a. After school, I marched down to the public library.
- b. Hannah raced to the landing pad that Luke was taking off from.
- (57) a. After school, I marched myself down to the public library.
- b. Hannah raced herself to the landing pad that Luke was taking off from.

(Boas 2003: 241- 242)

As I proposed above, the two variables which agentive verbs of manner of motion contain are not realized simultaneously. But when these two are realized at the same

time, these variables appear on the syntax as a subject and an object respectively. Therefore, the realization of the variable is stipulated as follows: when the subject of the CAUSE is realized as a surface subject, the subject of DO must emerge as a reflexive object. I will schematize the relation between the LSR of an agentive verb of manner of motion and the argument structure of its transitive form:

(58) Transitive form of the verb *run*



Unlike the intransitive form, the subject of the semantic primitive CAUSE appears on the syntax. As a result of this realization, the transitive form contains the causative meaning denoted by the CAUSE. The existence of the CAUSE invites the change of the meaning. In other words, the sentence with a fake reflexive object is different from that without it in the interpretation of their sentences.¹³ Some speakers judge that, in the sentence with the fake reflexive object, the agent in the sentence is obliged to perform the action denoted by the verb, whereas the agent in the sentence without it is not. The difference of this interpretation might be the key to accounting for the ungrammaticality of the following sentences in (59b) and (60b):

(59) a. Kim ran herself to the store.

b. *Kim ran herself.

(60) a. He crawled himself out of bed and into his chair.

b. *He crawled himself.

These sentences show that the fake reflexive object cannot appear without the directional phrase. In order to capture a close relation between the fake reflexive object and the directional phrase, I will appeal to a pragmatic constraint. The sentence with a fake reflexive object has the meaning that an agent forces himself to perform an action. Therefore, the appearance of the fake object requires the interpretation that an agent is obliged to do an action. This meaning is evoked by not only the semantic primitive CAUSE but also further information because this cannot emerge by the CAUSE alone.¹⁴ Further information, or the addition of the directional phrase, is of vital importance for the appearance of the reflexive fake object.

According to this assumption, the following sentence can also be accounted for.

(61) I walk the dog every morning.

Not directional phrase but temporal adverbial phrase is added to the sentence in (61), but it can be explained that the temporal adverbial phrase is added in order to obtain

¹³ Note that in the sentence with the CAUSE the subject of the DO is realized as a fake reflexive object, whereas in the sentence without it the subject of the DO appears as a surface subject, and as a consequence the fake reflexive object is not present on the syntax.

¹⁴ Note that the CAUSE is normally only in the LSR and the meaning denoted by it is not expressed, so special circumstances are necessary for the emergence of this meaning.

the interpretation that a surface subject is obliged to perform the event denoted by the verb phrase. Therefore, the appearance of the fake object is restricted by a pragmatic constraint.

5 CONCLUSION

This paper has proposed that the semantic primitive CAUSE and the variable *causer*, which is a subject of the CAUSE, are present in the LSR which shows agentive verbs of manner of motion, and both their transitive and intransitive form are derived from the identical LSR. According to this proposal, the fake reflexive object appears by the realization of the variable in the LSR, and can be regarded as an argument licensed by the verb on the level of the LSR.

In addition, the existence of a fake reflexive object requires some pragmatic constraint, resulting in the occurrence of a directional phrase. This interpretation, however, may vary among speakers. Accordingly, the appearance of a fake reflexive object is not always permitted.

The appearance of an object justifies my proposing that agentive verbs of manner of motion, like transitive verbs, include the semantic primitive CAUSE in the LSR. Moreover, the fact that the LSR of agentive verbs of manner of motion are parallel with those of transitive verbs on the level of conceptual structure is fruitful for the analysis of the reflexive objects which occur with transitive verbs and intransitive verbs in the same way.

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