

**“Zero” Encoding Strategy for Japanese Directed Motion Events:
A Case Study of Ballistic Motion Verbs with Goal *-ni* Phrases in Adnominal
Clauses ***

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1. Introduction

This paper deals with the co-occurrence of Japanese ballistic motion verbs with *-ni* phrases receiving goal interpretations (henceforth, goal *-ni* phrases) in adnominal clauses. It has been observed that goal *-ni* phrases may co-occur with only motion verbs that denote a result phase, regardless of their transitivity (Matsumoto (1997:186)). This observation is illustrated by comparing two predicates, for example, including the ditransitive verb *butukeru* ‘hit against’ and the ballistic motion verb *keru* ‘kick’, as shown in (1). Observe the following examples:^{1, 2}

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¹ The following abbreviations are used in the glosses of examples: ACC stands for accusative case marker, ASE for causative marker, ARE for malefactive marker, ASP for aspectual maker, COP for copular verb, DAT for dative case marker, GEN for genitive case marker, NOM for nominative case marker, PAST for past morpheme, TOP for topic marker.

² Some native speakers suggest that the verb *keru* ‘kick’ may take a *-ni* phrase as the goal argument. They point out that sentence (2) may be acceptable if the *-ni* phrase refers to an individual, as in (i):

- (i) Nakata-wa *Mearii-ni* booru-o ket-ta.
Nakata-TOP Mary-DAT ball-ACC kick-PAST.
‘Nakata kicked the ball *to Mary*.’

I feel that this sentence is more acceptable than (2), although I do not agree against their suggestion that the verb *keru* ‘kick’ may take a goal *-ni* phrase. Compare sentence (ii) with (i):

- (ii) *Nakata-wa *Mearii-ni* {isu/kaban}-o ket-ta.
Nakata-TOP Mary-DAT chair/bag-ACC kick-PAST
‘(Lit) Nakata kicked the {chair/bag} *to Mary*.’

If *keru* inherently takes the goal argument, (ii) could be completely acceptable regardless of what is referred to by its object NP, as is the case with the English counterpart to (ii). This contrast leads me to suggest that the acceptability of (i) is ascribed not to the verb semantics per se, but to context like play-by-play coverage of soccer matches. In such context, kicking the ball is the only means to pass the ball to an entity. To take things manageable, I focus only on the acceptability of the co-occurrence of the ballistic motion verbs with goal *-ni* phrases regardless of the specialized context.

- (1) a. Kare-wa booru-o kabe-ni butuke-ta.
 He-TOP ball-ACC wall-at hit against-PAST
 ‘He hit the ball against the wall.’
- b. ? Nakata-wa booru-o gooru-ni ket-ta. (Kageyama (2002:60))
 He-TOP ball-ACC goal-DAT kick-PAST
 ‘(Lit.) Nakata kicked the ball to the goal.’

As its intransitive use indicates, *butsukeru* entails a change in location, i.e. the surface contact of the ball with the wall; hence the acceptability of (1a). The verb *keru* ‘kick’, on the other hand, does not entail any result state, and (1b) is unacceptable (Kageyama (2002:60), Mihara (2004:96), among others).³

I point out, however, that even the ballistic motion verbs that cannot co-occur with goal *-ni* phrases *are* used with them in adnominal clauses. This is illustrated in (2).

- (2) Utida-ga mikata howaado-ni ket-ta booru-wa,
 Uchida-NOM ally forward-DAT kick-PAST ball-TOP
 aite difendaa-no te-ni ata-ta.
 opposition defender-GEN hand-DAT hit-PAST.
 ‘The ball that Uchida kicked toward his ally forward hit the hand of the opposition defender.’

Comparing (1b) with (2) raises a question why *keru* in (2) can be used with the goal *-ni* phrase, an issue that this paper addresses firstly.

Second, despite the co-occurrence of the ballistic motion verb with the goal *-ni* phrase in an adnominal clause, verbs of continuous imparting of force in some manner causing accompanied motion such as *hiku* ‘pull’ are not used with goal *-ni* phrases even in adnominal clauses, as shown in (3).

- (3) a. * Kanozyo-wa koinu-o heya-ni hii-ta.
 She-TOP puppy-ACC room-DAT pull-PAST
 ‘(Lit.) She pulled the puppy into the room.’
- b. ?? Kanozyo-ga heya-ni hii-ta koinu-wa yowattei-ta.
 She-NOM room-DAT pull-PAST puppy-TOP be weak-PAST
 ‘The puppy that she pulled toward the room was impaired.’

³ Japanese has V + V compounds, and among other things they permit ballistic motion verb + path verb compounds like *keri-komu* ‘kick into’ in *booru-o gooru-ni kerikomu* ‘to kick the ball into the goal’ to express directed motion.

The verb *hiku* ‘pull’ in (3) does not denote a result state of its patient, and hence (3a) is unacceptable. A predicate with this kind of verb as well as that with a ballistic motion verb typically denotes the transmission of a force from one entity to a second to move it to some location. Such similarity might lead us to predict that (3b) would be acceptable, contrary to the fact. The contrast between (2) and (3b) contributes to deeper understanding of the interaction between semantics and pragmatics in motion expressions.

Finally, I further point out that there is a particular situation where even verbs of continuous imparting of force in some manner causing accompanied motion can be used with goal *-ni* phrases without use of V + V compounds. An example is given in (4).

- (4) Sokoni-wa heya-ni isu-o hii-ta ato-ga at-ta.
 There-TOP room-DAT chair-ACC pull-PAST trace exist-PAST
 ‘There was a trace which was made by pulling the chair to the room.’

(4) shows that the co-occurrence of the verb in question with the goal *-ni* phrase is acceptable in the “quasi-relative clause (Imoto (2003))” which modifies the NP *ato* ‘trace’. The contrast of (4) with (3b) raises the question why in (4) the verb can be used with the goal *-ni* phrase. To solve the question leads us to reveal to what extent the pragmatic support for the acceptability of a motion expression works.

To my knowledge, such three types of data have never figured into work on motion expressions, yet is crucial for understanding a new motion encoding strategy called the “zero” encoding strategy that has recently been proposed by Nikitina (2008). She assumes that some languages can encode a motion event without use of linguistic elements denoting a result meaning component. I believe that such data as (2), (3b), and (4) contribute to revealing how such strategy works in Japanese.

The aim of this paper is to reveal the “zero” encoding strategy in Japanese that make it possible to use the ballistic motion verb with the goal *-ni* phrase. I propose a new way to put it in linguistic theorizing on empirical and theoretical grounds. I argue that with respect to the lexical semantics, the predicate, not the verb or adpositional phrase itself, has some meaning component that is eligible to compose a path meaning component, and that the pragmatic support serves to supplement the “resulthood”, in order for such meaning components to compose a path meaning component. The approach in this paper captures what is crucial to Japanese motion expressions in terms of not only semantics but also pragmatics.

This paper is organized as follows. Section 2 outlines recent analyses of motion expressions and shows that there is another type of motion expression that has not been focused on before. The data that this paper deals with are classified into this type. After giving some basic descriptions of the data, in section 4 I propose how to deal with motion expressions without an element encoding a path. Using my proposal in section 4, Section 5 shows that the function of adnominal clauses lets ballistic motion verbs be used with goal *-ni* phrases, and that this analysis can also capture the fact that verbs of continuous imparting of force in some manner causing accompanied motion are not used with goal *-ni* phrases in adnominal clauses. Section 6 discusses a consequence of the proposal in section 4. Section 7 offers concluding remarks.

2. Background

Before going into the details of this paper, it is useful to outline some backgrounds of studies of motion expressions, so as to make clear how significant the data introduced in section 1 are. Cross-linguistic studies of motion expressions have been a fruitful line of researches since first brought to the forefront in the work of Talmy's (1975, 1985, 1991, 2000) intriguing proposal that languages fall into two types with respect to how they encode directed motion events. His pioneering research has inspired a great number of studies of an increasingly diverse set of languages. These studies, including Talmy's works, have focused on one type of motion expressions in which path "as a whole" is encoded in the verb or a satellite to the verb. For example, English characteristically encodes a path in a satellite to the verb, while Japanese characteristically in the verb, as illustrated in (5):

- (5) a. Mary walked to the store.
 b. Mearii-wa arui-te mise-ni it-ta.
 Mary-TOP walk-by store-at go-PAST
 'Mary walked to the store.'

The English preposition *to* in (5a) encodes a path, whereas the Japanese deictic verb *iku* 'go' in (5b) encodes it. Given these characteristic path-encoding patterns, English is classified into Satellite-framed languages, while Japanese into Verb-framed languages.

One of the intriguing observations is that languages have either Satellite- or Verb-framing strategies or both to encode path. Putting another way, Talmy shows that there are only two patterns about path encoding. English as a Satellite-framed

language proposed by Talmy (2000), for example, has not only satellites to the verb but also path verbs such as *go*, *come*, *enter*, *ascend*, and *descend* to encode a path, whereas Japanese as a Verb-framed language has only path verbs as the way to encode the path in motion event. Such characteristic encoding patterns lead us to predict that in Japanese, for example, a goal *-ni* phrase cannot occur without a path verb such as *iku* ‘go’ or *kuru* ‘come’, and this is true.

- (6) ??Mearii-ga eki-ni arui-ta.
 Mary-NOM station-at walk-PAST
 ‘(Lit.) Mary walked to the station.’

Except as to a specialized context pointed out by Namiki (2013), (6) is unacceptable. One might point out here that Japanese manner-of-motion verbs can be used with *-ni* phrases that denote directions of motion, as illustrated in (7):

- (7) Higasi-ni iti-kiro arui-ta tokoro-ni eki-ga aru.
 East-to 1-km walk-PAST place-at station-NOM exist
 ‘Walking 1 km to the east (from here), you will find a station there.’

(7) shows that the manner-of-motion verb *aruku* ‘walk’ co-occurs with the *-ni* phrase *higasi-ni* ‘to the east’. Indeed, Beavers et al. (2010:365) suggest, by quoting from Stringer (2003:53), that such data of *-ni* phrases indicate that the Talmyan approach is not tenable. However, there is a big problem with the criticism. As a number of studies in Japanese define, the *-ni* phrase in (7) is classified not into goal *-ni* phrases, but into directional *-ni* phrases, which make the goal of motion denoted by the predicate unspecific. Moreover, as the measure phrase *itikiro* ‘1 km’ in (7) indicates, the predicate does not violate the single delimiting constraint, proposed by Tenny (1994), according to which the event described by a verb only has one measuring-out and is delimited only once. If the *-ni* phrase in (7) denoted the goal, the predicate would be unacceptable, since the event denoted by the predicate event is delimited twice, i.e. by the measure phrase *1 km* and by the *-ni* phrase; hence (7) is not problematic for the Talmyan approach. Thus, as far as Talmy has dealt with, it seems to be valid that languages have only two possible strategies to encode path.

Some recent studies, however, deal with another type of motion expressions (see Thomas (2004), Gehrke (2007), Nikitina (2008), among others, on English). Examples are given in (8).

- (8) a. [Standing just outside of the room]

- Mary walked in the room.
- b. [Standing next to the bed]
 Kim jumped on the bed. (Beavers et al. (2010:363))

These sentences show that the locatives receive goal interpretations in certain context. Such phenomena have also been observed in other languages (e.g. Pourcel and Kopecka (2006) on French; Marínez Vázquez (2001) on Spanish; Namiki (2013) on Japanese, among others). It should be noticed here that the sentences in (8) do not have any linguistic elements encoding path. The verbs *walk* and *jump* are classified into manner verbs, which specify the manner of carrying out actions, not into result verbs, which specify a resulting state of carrying out actions. These verbs cannot denote a path as a subtype of result, as Rappaport Hovav and Levin (2010) propose that a verb cannot lexicalize manner and path as a subtype of result at the same time. The locatives also cannot be seen as denoting a path: if they could encode a path, we would predict that for English native speaker, *John danced in the room* in an appropriate context could be understood as “John entered the room by dancing”. Taking all these facts together, it is obvious that elements in (8) do not encode paths at all.

The question arises whether such expressions as in (8) are motion expressions or not, as it has been thought that a motion event denoted by a sentence consists of a moving figure, a manner in which the figure moves, and path along which the figure moves (Talmy (2000), among others). On the basis of our generally accepted intuition about the semantics of the sentences in (8), it is reasonable to estimate that they denote motion events and that they must involve a path. For any theories that deal with motion expressions to elucidate the mechanism of motion event encoding cross-linguistically, it is necessary to pay close attention to this type of motion expression.

To capture the motion expression without a linguistic element encoding a path, Nikitina (2008:177) proposes that “[t]here is a third option of describing directed motion, which is widely used cross-linguistically and which is often ignored in the studies of motion expressions.” According to her, this option of expressing a directed motion event, called “zero” encoding strategy, relies on contextual inference rather than lexical encoding. Taking sentences like (8) as an example, she argues that even in a language like English, where directionality can be encoded lexically by means of a specialized preposition *into*, when some contextual factors including a verb’s lexical meaning, information of the location that the complements of *in* refer to, etc. allow for a focus on the result location rather than on the extended path of motion (e.g. the transition into a container rather than an area can be

conceptualized as punctual), the directionality use of the preposition *in* is allowed. (See Nikitina (2008) for more on this argumentation.)

Namiki (2012, 2013) and Namiki, Nishimaki, and Kogusuri (henceforth, Namiki et al.) (2012) showed that Japanese also has this “zero” encoding strategy. What was important in these studies is that Japanese differs from English in types of contexts triggering the contextual inference of change in location. As Namiki et al. (2012) pointed out, for example, (9) does not become acceptable even in the same context as (8).

- (9) * [Standing just outside of the room]
 Mearii-ga eki-ni arui-ta.
 Mary-NOM station-at walk-PAST
 ‘(Lit.) Mary walked to the station.’

Contrary to English, where the directionality use of *in* is not sensitive to the type of discourse mode (e.g. colloquial or literary style), in Japanese (9) is licensed only in “specialized” narrative contexts involving the omniscient narrator progressing the story. (See Namiki (2013) for details of this analysis.) Otherwise, cases of Japanese “zero” encoding strategy that are not sensitive to the type of discourse mode include the causative construction as in (10) and the adversative passive as in (11). (See Namiki (2012) for details of this analysis.)

- (10) Otori-o suiro-ni oyog-ase-ta.
 decoy-ACC conduit-to swim-ASE-PAST
 ‘Someone had the decoy swim to the conduit.’

(A. Oshima “*Kanto Folk*”)

- (11) Keisatu-wa hannin-ni eki-ni hasir-are-ta.
 Police-TOP criminal-by station-to run-ARE-PAST
 ‘(Lit.) Police let a criminal get away to the station.’

Taking (9-11) into consideration leads us to conclude that although Nikitina’s (2008) proposal seems to be true, her key system of the “zero” encoding strategy does not work in the same way on different languages, at least on Japanese. If so, all we have to do first is reveal what kind of pragmatic factor is essential to Japanese “zero” encoding strategy. To reveal it, it is useful to analyze the co-occurrence of ballistic motion verbs with goal *-ni* phrases descriptively.

3. Japanese Motion Expressions with/without Path

3.1. Basic data

As mentioned in section 1 and section 2, in Japanese as a Verb-framed language, in order for a sentence to involve a goal *-ni* phrase, a path needs to be encoded in the verb. This restriction is also true of most of the causative motion expressions. Causative motion events are usually expressed by a sentence with ballistic motion verbs, as listed in (12).

- (12) **Ballistic motion verbs:** *ageru* ‘toss’, *haziku* ‘flip’, *keru* ‘kick’, *nageru* ‘throw’, *tuku* ‘poke’, *utu* ‘hit (or slap/shoot)’, etc.

With careful attention to causative motion expressions, we can find that ballistic motion verbs fall into two classes in terms of the possibility of the co-occurrence of the goal *-ni* phrase. Crucial here to our argument is the observation that except for the verbs *nageru* ‘throw’ and *ageru* ‘toss’ as in (13), these verbs cannot co-occur with goal *-ni* phrases without the aid of other elements that encode paths, as exemplified in (14):⁴

- (13) a. Kare-wa booru-o kabe-ni nage-ta.
 He-TOP ball-ACC wall-at throw-PAST
 ‘He threw the ball against the wall.’
 b. Resiibaa-ga settaa-ni booru-o ageru.
 Receiver-NOM setter-at ball-ACC toss
 ‘The receiver tosses the ball to the setter.’

- (14) a. ? Nakata-wa booru-o gooru-ni ket-ta. (= (1b))

⁴ I do not say that (13a) always denotes that the ball reaches the wall. In fact, denying the contact of the ball with the wall does not yield a contradiction with (13a):

- (i) Kare-wa booru-o kabe-ni nage-ta-ga, booru-wa kabe-ni atara-nakat-ta.
 He-TOP ball-ACC wall-at throw-PAST-but, ball-TOP wall-at hit-not-PAST
 ‘He threw the ball to the wall, but it did not hit against the wall.’

This may indicate that the predicate includes TOWARD meaning component rather than TO meaning component. In this paper, following Talmy (2000), I classify TOWARD into one type of path. Moving toward some place presupposes the presence of the goal, and is construed as moving along a path leading to the goal. Since in Japanese as a Verb-framed language, the verb is the only way to lexicalize a result, when it does not lexicalize a result, the predicate includes TOWARD rather than TO (this argumentation may be related to a property of Japanese as a BECOME-language proposed by Ikegami (1981), but I set it aside here). In addition, the *-ni* phrase in question corresponds to the goal as a part of path, not to path as a whole. Below, regardless of the type of path that a predicate includes, I call the *-ni* phrase denoting the goal the goal *-ni* phrase.

He-TOP ball-ACC goal-DAT kick-PAST

‘(Lit.) Nakata kicked the ball to the goal.’

b. ? Taro-wa pankuzu-o yuka-ni hazii-ta.

Taro-TOP crumb-ACC floor-at flip-PAST

‘(Lit.) Taro flipped crumbs to the floor.’

As to the verb *ageru* ‘toss’ in (13b), as its intransitive use indicates (e.g. *booru-ga yane-ni agaru* ‘the ball climbs onto the roof.’), it entails change in location. The verbs *nageru* ‘throw’, *keru* ‘kick’, and *haziki* ‘flip’, on the other hand, do not specify the result state of the entity referred to by the object; hence the sentences in (14) are strange.

The question to be raised here is why the verb *nageru*, but not *keru* and *haziku*, with the goal *-ni* phrase is acceptable without the aid of a compounding form that encodes a path. To answer the question, it is useful to reveal what the verbs lexicalize with respect to meaning components consisting of motion events. Intuitively, they lexicalize manners carrying out actions to move something to some place. What distinguishes them is whether or not the verbs entail the entity moving; *nageru* does entail such a situation, but the others do not. This can be borne out by the fact that denying change in location leads to a contradiction with *nageru*, but not with the other verbs *keru* and *haziku*, as shown in (15).⁵

(15) a. # Kare-wa booru-o nage-ta-ga, booru-wa mattaku
He-TOP ball-ACC throw-PAST-but ball-TOP at all
ugoka-naka-tta.
move-not-PAST

‘He threw the ball, but it didn’t move anywhere.’

b. Kare-wa booru-o {ket/hazii}-ta-ga, booru-wa mattaku
He-TOP ball-ACC kick/flip-PAST-but ball-TOP at all
ugoka-naka-tta.
move-not-PAST

‘He {kicked/flipped} the ball, but it didn’t move anywhere.’

As to (15a), when you throw a ball, its spatial position must change even if it returns to our hand as a result (you may want to imagine that you throw a ball straight up into the air, and after a few seconds it falls into your hands as the original place).

⁵ The #-mark indicates contradiction.

opposition defender-GEN hand-DAT hit-PAST.

‘The ball that Uchida kicked toward his ally forward hit the hand of the opposition defender.’

- b. Kiipaa-ga gooru-rain-ni hazii-ta booru-wa, huunnimo
 Keeper-NOM goal-line-at knock-PAST ball-TOP unfortunately
 aite sensyu-ni watat-ta.
 opposition player-DAT pass to-PAST
 ‘Unfortunately, the ball that the goalkeeper knocked toward a goal line passed to an opposition player.’

Although the VPs in (16) do not denote that the referents to the objects receive the ball, the *-ni* phrases indicate the goal toward which the ball moves. Additionally, even the ungrammatical sentence in (ii) in fn. 2 becomes acceptable when it occurs in the adnominal clause, as in (17).

- (17) Nakata-ga Mearii-ni ket-ta {isu/kaban}-wa,
 Nakata-TOP Nary-DAT kick-PAST chair/bag-TOP
 kanozyo-no kao-ni atat-ta.
 she-GEN face-DAT hit-PAST
 ‘The {chair/bag} that Nakata kicked to Mary hit against her face.’

Given the fact that (14) itself is hard to interpret as kicking or kicking the ball toward the goal in general, and that (ii) in fn. 2 is unacceptable by itself, it is worthwhile to investigate what licenses the co-occurrence of the ballistic motion verbs with the goal *-ni* phrases in (16) and (17). Since (16) and (17) do not include any lexical items that encode paths, it can be taken as a result of the use of “zero” encoding strategy.

Taking a glance at the contrast of (16) with (14), we can easily recognize that what licenses the co-occurrence in question is a function of the adnominal clause, which I discuss in greater details in section 5. It should be noticed here, however, that things are not so manageable. Interestingly enough, although ballistic motion verbs are used with goal *-ni* phrases in adnominal clauses, other verbs including *osu* ‘push’ and *hiku* ‘pull’ which are called verbs of continuous imparting of force in some manner causing accompanied motion, as listed in (18), are still unacceptable when they co-occur with goal *-ni* phrases. Examples are given in (19), one of which is repeated from (3b).⁷

⁷ A few, but not many informants point out that the verb *hikizuru* ‘drag’ can be used with a

(18) **Verbs of continuous imparting of force in some manner causing accompanied motion:** *hikizuru* ‘drag’, *hiku* ‘pull’, *osu* ‘push’, etc.

- (19) a. ??Kanozo-ga heya-ni hii-ta koinu-wa yowattei-ta.
 She-NOM room-DAT pull-PAST puppy-TOP be weak-PAST
 ‘The puppy that she pulled toward the room was very impaired.’
 b. ??Kare-ga kuruma-ni osi-ta kaato-wa kowaretei-ta.
 He-NOM car-DAT push-PAST cart-TOP be broken-PAST
 ‘The cart that he pushed to his car was broken.’

These verbs are analogous to ballistic motion verbs in that they are used to denote a transmission of a force from one entity to a second to move it to some location. Nonetheless, the adnominal clauses do not improve the acceptability of the co-occurrence of the verb *hikizuru* ‘drag’ and *osu* ‘push’ in (19) with the goal *-ni* phrases. The contrast of (16) and (17) with (19) leads us to predict that although the function of the adnominal clause seems to contribute to the “zero” encoding strategy in Japanese, what types of predicates the strategy is available for is dependent on the lexical semantics of the verbs. In what follows, to capture the prediction appropriately, I propose a strategy of “path coercion” based on meaning compositionality.

4. Proposal

4.1. Compositionality

I adopt a general theory of compositionality, an approach where grammar is compositional if the meaning of an expression can be reliably computed from the meanings of its parts. This is summarized in (20):

(20) Compositionality:

goal *-ni* phrase. In fact I find some examples on Google, as illustrated in (i):

- (i) Medatuyooni heya-ni sitai-o hikizut-ta-no-desu.
 obtrusively room-at body-ACC drag-PAST-NOM-PLITE
 ‘(The criminal) dragged the body into the room to mark it.’

If (i) is completely acceptable, the factor that licenses the co-occurrence of the verb with the goal *-ni* phrase may be attributed to the same as the case of the verb *nageru* ‘throw’ as shown in section 3.1. Like *nageru*, denying change in location leads to a contradiction with *hikizuru*, as in (ii).

- (ii) #Kare-wa sitai-o heya-ni hikizut-ta ga, mattaku ugok-anakat-ta.
 He-TOP body-ACC room-at drag-PAST but at all move-not-PAST
 ‘He dragged the body into the room, but it didn’t move at all.’

I do not investigate the reason why the native speakers vary in the acceptability of (i).

- a. The meaning of a compositional expression is ascribed to regularly consisting of the elements that the expression has.
- b. A meaning composition is acceptable if the meaning of one of its constituents overlaps that of the other constituent.

Many theories in semantics more or less stand on meaning compositionality (e.g. the classical Davidsonian account for verb-adverb selection, Jackendoff's (1990) conceptual structures for selectional restriction on the subject and/or object, Iwata's (2008) further specification for English verb-based resultatives, Langacker's (2008) constructions in chapter 3, etc.). For example, the verb *drink* takes a liquid as the subcategorized object but not the other entities like an apple or meat. Jackendoff (1990) captures this fact by formulating the lexical meaning of *drink*, as in (21b).

- (21) a. Mary drank beer.
- b. *drink*: [_{Event} CAUSE ([_{Thing}]_i, [_{Event} GO ([_{Thing} LIQUID]_j, [_{Path} TO ([_{Place} IN ([_{Thing} MOUTH OF ([_{Thing}]_i)))]))] (Jackendoff (1990:53))
- c. *beer*: [_{Thing} BEER <+liquid>]

We can understand what the sentence “Mary drank beer” tells, because *drink* specifies its object as being liquid and *beer* is liquid. Thus, this type of analysis leads us to assume that when we construe a construction, the meaning of the constituent must overlap that of another constituent.

The same holds true for directed motion expressions. When we understand an event as a directed motion event, it needs to consist of, at least, a moving figure, motion, (sometimes manner,) and path, as represented in (22).

(22) **Directed Motion Event**: Figure + Motion + (Manner) + Path

Take sentence (23a) for instance: the verb *walk* entails motion and a manner carrying out the action; and the prepositional phrase *to the classroom* denotes a path. The VP *walk to the classroom* is constructed, because path can be thought of trajectory of moving figure. This is represented in (23d), where I use bold type to indicate the overlap of the meaning components.

- (23) a. John walked to the classroom.
- b. walk: [motion, manner]
- c. to the classroom: [path]

- d. walk to the classroom: $\left[\begin{array}{l} \text{motion, manner} \\ \text{path} \end{array} \right]$

Apparently, there is no area of overlap in (23d). However, note that the predicate in (23a) denotes a type of change, which is defined by the literature including Beavers (2011) as a transition of a theme between initial and final states on a scale in an event. For an entity to be a theme, it is presupposed that the entity moves along a scale, that is, path. Such theoretical presupposition leads us to assume that in the predicate in (23a) the motion meaning component overlaps with the path meaning component. This assumption is borne out by the fact that we can say “he danced into the room,” while we cannot say, for example, “he laughed to the room (indicating that he enters the room laughing).”⁸

4.2. Decomposition of Path

Let us apply the compositionality approach to Japanese motion expressions in turn. As mentioned in section 2, contrary to English prepositions like *to*, *into*, and *onto*, Japanese goal *-ni* phrases do not have the path meaning component as a whole that the English preposition has. Here, based on the literature including Jackendoff (1990) and Talmy (2000), I assume that the conception of path can be decomposed into two more conceptions; “route” (or “vector” as a term of Talmy (2000)), along which an entity moves, and “place”, at which the motion ends (i.e. “goal”), as represented in (24), and represents Japanese counterparts to (23) as in (25).⁹

(24) path \rightarrow <route + place (goal)>

(25) a. Taroo-ga kyoositu-ni aruite itta.

b. aruku: [motion, manner]

c. iku: [motion, path (route, place (goal))]

d. kyoositu-ni [place]

e. kyoositu-ni aruite iku: $\left[\begin{array}{l} \text{motion, manner, route, place} \\ \text{place} \end{array} \right]$

(25e) shows that (part of) path overlaps with place, because place is a part of meaning components that compose path. The compositionality approach can also lead us to predict that when the verb lacks path, it cannot be used with the goal *-ni* phrase, as there is no area of overlap between the meaning component denoted the verb and that denoted by the goal *-ni* phrase (cf. (6)). I reflect the path

⁸ I ignore here idiomatic expressions such as “he wore the jacket to the party.”

⁹ To keep things manageable, I ignore here the deictic meaning component of the verb *iku*.

decomposition in the representation of (23) in English, as in (26), which shows that the motion overlaps with the route.

- (26) a. John walked to the classroom.
 b. walk: [motion, manner]
 c. to the classroom: [path (route, place)]
 d. walk to the classroom: $\left[\begin{array}{l} \mathbf{motion}, \text{ manner} \\ \mathbf{route}, \text{ place} \end{array} \right]$

One might think that the motion and route meaning components in (26d) do not overlap. It is natural, however, for theories that employ the scale analysis to assume that they overlap, as a number of scholars define all types of change as a transition of a theme along a scale that defines the change (Tenny (1994), Dowty (1991), Jackendoff (1996), Beavers (2011), among others). Employing this insight, I assume that a moving figure overlaps with the route meaning component via the motion meaning component; hence the motion and route meaning components overlap.

4.3. *Compositionality and Pragmatics*

A question to raise here is how to apply the explanation given in the previous section to the motion expressions that lack path meaning components like (27), which is repeated from (8a).

- (27) Mary walked in the room. (the intended meaning is that Mary entered the room by walking.)

In addition, the compositionality approach should capture the fact that some manner-of-motion verbs including *dance* avoid the directional use of *in*, as in (28):

- (28) * Mary danced in the room (from the outside).

The contrast of (27) with (28) indicates that the *in* phrases denote only the place at which motion ends, not the path. Additionally, neither of the verbs do not encode paths. Thus, (27) seems to be problematic for the compositionality approach.

To resolve this problem, I propose two kinds of reinforcement of the compositionality approach. First, I reinforce the definition of directed motion events. Recall that I decompose the conception of path into two subparts; route and place. I apply the decomposition of path to (22), as represented in (29):

(29) **Directed Motion Event** (revisited):
 Figure + Motion + (Manner) + Route + Place

(29) shows the semantic condition for an event to be construed as a directed motion event. Put another way, we may in principle construct a directed motion expression when the constituents denote the conceptions in (29), and this is exactly the case of motion expressions without an element encoding a path, as in (27).

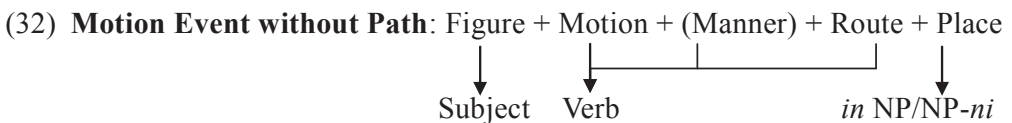
If my reinforcement is correct, then it is predicted that *walk* has the route meaning component, but *dance* does not. This prediction is borne out by the fact that the former, not the latter, can take a “route NP” as its object, as shown in (30):

- (30) a. John walked the street (to the station).
- b. * John danced the street (to the station).

Based on the prediction that *walk*, but not *dance*, has the route meaning component, we can easily give an account for the contrast in (30); the route meaning component is realized as *the street* in (30a). Such linguistic phenomenon is not unique to English. This diagnostic for Japanese manner-of-motion verbs produces the same result, as in (31):

- (31) a. Mearii-wa dooro-o arui-ta.
 Mary-TOP street-ACC walk-PAST
 ‘Mary walked the street.’
- b. * Mearii-wa dooro-o odot-ta.
 Mary-TOP street-ACC dance-PAST
 ‘Mary danced the street.’

As Namiki (2012) shows, it is necessary for the verbs to have the route component when Japanese “zero” encoding strategy are correctly employed. From (30) and (31), we find (29) to be a semantic constraint for an event to be construed as a directed motion event. For convenience, I represent the lexicalization pattern in the “zero” encoding strategy as in (32):



As (32) represents, in the “zero” encoding strategy Motion, Manner, and Route are

packaged into the verb, and Place into the pre/adpositional phrase.

It should be noticed here that in (32) the meanings of V and PP do not overlap at all. Recall the definition of compositionality given in (20). The theory of meaning compositionality requires parts of meanings in V and PP to overlap. Then, I propose a new way to interact semantics with pragmatics; it is the context or construction in construction grammar or event frame that connects un-overlapped meaning of V with that of PP in motion expressions. In fact, as mentioned in section 2, the directional use of *in*, for example, is licensed only in an appropriate context, where the place denoted by the *in* phrase is contextually emphasized as the goal of motion.

- (33) a. [Standing just outside of the room]
 Mary walked in the room. (= (8a))
- b. Semantics: <Figure, Motion, Manner, Route, Place>
 ↓
 Pragmatics: “the room is the goal of motion”
 ↓
 <Place> → <Goal>

In (33), the route meaning component does not semantically overlap with the place meaning component at all in the sense that an event is construed as a directed motion. However, the context that the moving figure does not exist within the room guarantees the place to be the goal of the motion denoted by the verb. Thus, My approach assumes that what the pragmatic support or the “zero” encoding strategy means is that the context guaranteeing the “resulthood” connects the route meaning component with the place meaning component.

Japanese also has the “zero” encoding strategy, though the types of contexts are different from those in English. As mentioned in section 2, the co-occurrence of manner-of-motion verbs with goal *-ni* phrases is acceptable in causative constructions and adversative passives, as shown in (10) and (11), repeated as (34) and (35) respectively.

- (34) Otori-o suiro-ni oyog-ase-ta.
 decoy-ACC conduit-to swim-ASE-PAST
 ‘Someone had the decoy swim to the conduit.’
- (35) Keisatu-wa hannin-ni eki-ni hasir-are-ta.
 Police-TOP criminal-by station-to run-ARE-PAST
 ‘Police let a criminal get away to the station.’

As Namiki (2012) argues, as to the cases of causative constructions such as (34), what makes it possible is the speaker's assumption that the causation produces a transition to(ward) the goal by the end of the event from a contextually determined place at the beginning of the event. Likewise, the co-occurrence of the manner-of-motion verb with the goal *-ni* phrase in adversative passives including (35) is licensed by the presupposition of a directed motion event, which is attributed to a function of adversative passives. From these argumentations, the pragmatic support of the "zero" encoding strategy in Japanese can be reduced as in (36).

- (36) In Japanese the route and place meaning components can overlap when a pragmatic support guarantees the occurrence of a transition to(ward) the goal by the end of the event from a contextually determined start place at the beginning of the event.

In what follows, I show that the semantic condition on directed motion event (29) and the pragmatic support (36) can apply to the main data that this paper deals with.

5. Analysis

As shown in section 3, the co-occurrence of ballistic motion verbs with goal *-ni* phrases is licensed in the adnominal clause, as in (16), repeated as (37), whereas that of verbs of continuous imparting of force in some manner causing accompanied motion with them is not, as in (18), repeated in (38).

- (37) a. Utida-ga mikata howaado-ni ket-ta booru-wa,
 Uchida-NOM ally forward-DAT kick-PAST ball-TOP
 aite difendaa-no te-ni ata-ta.
 opposition defender-GEN hand-DAT hit-PAST.
 'The ball that Uchida kicked toward his ally forward hit the hand of the opposition defender.'
- b. Kiipaa-ga gooru-rain-ni hazii-ta booru-wa, huunnimo
 Keeper-NOM goal-line-at knock-PAST ball-TOP unfortunately
 aite sensyu-ni watat-ta.
 opposition player-DAT pass to-PAST
 'Unfortunately, the ball that the goalkeeper knocked toward a goal line passed to an opposition player.'
- (38) a. ??Kanozo-ga heya-ni hii-ta koinu-wa yowattei-ta.
 She-NOM room-DAT pull-PAST puppy-TOP be weak-PAST
 'The puppy that she pulled toward the room was very impaired.'

- b. ??Kare-ga kuruma-ni osi-ta kaato-wa kowaretei-ta.
 He-NOM car-DAT push-PAST cart-TOP be broken-PAST
 ‘The cart that he pushed to his car was broken.’

Employing the compositionality approach proposed in the section above, I analyze the contrast of (37) with (38) with respect to the semantic condition on directed motion events and the pragmatic support.

5.1. On the Semantic Condition

I start with the semantic condition in (29). We have observed (15) in section 3, which shows that the verbs in (37) do not entail an entity moving. The same thing holds true of the verbs in (38), as shown in (39):

- (39) Kare-wa tukue-o {hii/osi}-ta-ga, tukue-wa mattaku
 He-TOP table-ACC pull/push-PAST-but table-TOP at all
 ugoka-naka-tta.
 move-not-PAST
 ‘He {pulled/pushed} the table, but it didn’t move anywhere.’

Although a table may move when you pull or push it, the transition is dependent on what is referred to by the NP *the table*: you cannot move the table weighting 1 ton by pulling or pushing it. Thus, verbs of continuous imparting of force in some manner causing accompanied motion as well as ballistic motion verbs do not take *-ni* phrases as goal arguments in general.

On the basis of the semantic condition in (29), we predict that ballistic motion verbs, not verbs of continuous imparting of force in some manner causing accompanied motion, have the route meaning component. However, this prediction seems to be incorrect. A piece of linguistic evidence is the acceptability of the “V + *dasu*” compounding, which means to get an entity out of some place by Ving.

- (40) a. *keri-dasu* ‘kick out’, *haziki-dasu* ‘flick out’, *tuki-dasu* ‘shove out’
 b. *hiki-dasu* ‘withdraw’, *osi-dasu* ‘push out’ (*osu* not in use of the ballistic motion verb)

As shown in (40), both ballistic motion verbs and verbs of continuous imparting of force in some manner causing accompanied motion are compatible with the “V + *dasu*” compounding form. As the meaning of the verb *dasu* indicates, it has the

route and place meaning components. Additionally, we have confirmed that those verbs do not have the place meaning components. On my compositionality approach, a meaning composition is acceptable if the meaning of one of its constituents overlaps that of the other constituent. Taking the linguistic fact and my proposal together, it follows that the V-V compounds in (40) are acceptable, as they adhere to the semantic condition in (36). Then, why is (38) unacceptable?

A possible explanation is that it is degree of difficulty in reading off the route meaning component that differentiates the two data in the acceptability. As its name indicates, the predicate including a ballistic motion verb denotes that the manner encoded by the verb modifies only the point at which an entity transfers the force to the other, while that including a verb of continuous imparting of force in some manner causing accompanied motion denotes that it modifies all of the process along which the event develops: as to the motion event denoted by the predicate including *keru*, the route is produced a punctual action of kicking; on the other hand, as to that denoted by the predicate including *osu* or *hiku*, the route is produced only when pushing or pulling event is continuous to some extent. Thus, the contrast between (37) and (38) tells us that when the manner modifies the whole process of the event, the verb is difficult to use with a goal *-ni* phrase in an adnominal clause that may trigger the path coercion.

This is not a surprise to my approach. It has been found that types of manner influence more or less the “zero” encoding strategy, that is, the path coercion. As Nikitina (2008) argues, the directional use of *in* is hard to license when the verb expresses a highly specific manner of motion (e.g. *pat*, *amble*, etc.). According to her, this is ascribed to a way of conceptualization of an event: when the process is conceptually “focused on”, the result is not so much focused on as it, and vice versa.

In sum, the two types of verbs have the route meaning components, which may make the predicates candidates for denoting a directed motion event. However, verbs of continuous imparting of force in some manner causing accompanied motion denote manners that modify the whole process of the event, which prevents us from using the “zero” encoding strategy.

5.2. *On the Pragmatic Factor*

For the pragmatic support in (37), it is natural to focus on the function of adnominal clauses. It is said that the adnominal clause functions as the presupposition of a proposition denoted in the clause (Levinson (1983)). Thus, we cannot deny the proposition of adnominal clause, as in (42).

(42) # *Katute sakaeta inka-bunmei-wa*

at one time flourishing Inca-civilization-TOP
 sakaetei-nakat-ta.
 be flourishing-not-PAST
 ‘(Lit.) Incan civilization that was flourishing at one time was not
 flourishing.’

The same holds true for the adnominal clause in (37):

(43) # Utida-ga mikata howaado-ni ket-ta booru-wa,
 Uchida-NOM ally forward-DAT kick-PAST ball-TOP
 mattaku ugoka-naka-tta.
 at all move-not-PAST
 ‘The ball that Uchida kicked toward his ally forward did not move at
 all.’

The function of presupposition that adnominal clauses have can guarantee that a moving figure moves toward the goal of motion.

Recall that a manner-of-motion verb with a goal *-ni* phrase is acceptable in an adversative passive form in which the motion event is presupposed. The example is repeated from (35).

(44) Keisatu-wa hannin-ni eki-ni hasir-are-ta.
 Policemen-TOP criminal-by station-to run-ARE-PAST
 ‘Policemen let a criminal get away to the station.’

(44) denotes that *keisatu* ‘policemen’ are affected by the action of the causer; suffering them means that the criminal’s getting away to the station has already achieved before they are affected. Thus, as is the case of adversative passives, ballistic motion verbs with goal *-ni* phrases are acceptable in adnominal clauses because of the function of adnominal clause as presupposing the proposition.

To sum up my analysis, ballistic motion verbs can be used with goal *-ni* phrases in adnominal clauses because (i) the predicates in question have all meaning components that are necessary to construe an event as a directed motion event, and (ii) the function of adnominal clause as presupposing the proposition guarantees that the place meaning component is construed as the goal of motion. This is represented in (45).

- (45) a. Utida-ga mikata howaado-ni ket-ta booru-wa... (= (37a))
 b. Semantics: <Figure, Motion, Manner, Route, Place>
- ↓
- Pragmatics: presupposition of the directed motion event
- ↓
- <Place> → <Goal>

6. Consequence

As I have stated in the section above, verbs of continuous imparting of force in some manner causing accompanied motion may be candidates for the co-occurrence with goal *-ni* phrases because of their route meaning components, although it is not licensed in the adnominal clause. I have argued that it is their manner meaning components that prevent the function of adnominal clauses from improving the acceptability of the co-occurrence of verbs of continuous imparting of force in some manner causing accompanied motion with goal *-ni* phrases.

However, on the basis of my analysis, the co-occurrence of these verbs with goal *-ni* phrases should be possible because predicates including them do not violate the semantic condition in (29). Thus, we can predict that if there is an appropriate context that helps us read off the route meaning component even in the motion event denoted by the predicate including a verb of continuous imparting of force in some manner causing accompanied motion. Indeed, we can find a case where even though the elements in the sentence do not encode a path, this type of verb can be used with goal *-ni* phrases. This is exemplified in (46).

- (46) Sokoni-wa heya-ni isu-o hii-ta ato-ga at-ta.
 There-TOP room-DAT chair-ACC pull-PAST trace exist-PAST
 ‘There was a trace which was made by pulling the chair to the room.’

Although as seen in section 3 and section 5, the co-occurrence of the verb *hiku* ‘pull’ with a goal *-ni* phrase is unacceptable in an adnominal clause, it is acceptable in (46).

According to Imoto (2003), the main NP *ato* ‘trace’ of the quasi-relative clause is a kind of product resulting from the event denoted by the relative clause. Traces usually correspond to the processes of the event producing them. In other words, if the trace goes from the start point to the goal, it means that an entity moves to the goal. Additionally, the sense of the NP *ato* is completely compatible with the manner meaning component that produces the trace with the development of the event of moving the chair to the room by pulling in (46). Thus, the nature of the

NP *ato* can license even verbs of continuous imparting of force in some manner causing accompanied motion to be used with goal *-ni* phrases.

7. Conclusion

This paper proposed that even a path as a whole is not encoded in a sentence, when the sentence has the two meaning components “route” and “place” that compose a path together, and when an appropriate context are given, we can express a direct motion event by using manner verbs with locatives. This paper introduced a new phenomenon that ballistic motion verbs can be used with goal *-ni* phrases not in normal context but in adnominal clauses. The function of the adnominal clause as the presupposition of the proposition enables ballistic motion verbs to be used with a goal *-ni* phrase. Finally, this paper showed that the proposal can also deal with the case of verbs of continuous imparting of force in some manner causing accompanied motion in quasi-relative clauses including the main NP *ato* ‘trace’.

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