Japanese Enter/Exit Verbs are Motion Verbs

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1 Introduction
Kita (1999) challenges the view that language exhaustively makes a fundamental distinction in change of location in space through time between the primitives, “(translational) motion” and “locatedness” (Talmy 1975, 1985), by claiming that “discrete change of state” should also be included among the primitives of this domain. Kita’s claim is based on Japanese Enter/Exit verbs (hairu/deru). He maintains that unlike English Enter/Exit verbs and verb phrases (enter, go into, exit, go out of), which are motion verbs, hairu/deru are not motion verbs but discrete change of state verbs, which semantically encode a change of location from outside to inside (hairu) from inside to outside (deru), and do not encode what happens during the transition between pre-state and post state.

The present study argues that Japanese Enter/Exit verbs are motion verbs, and questions Kita’s claim about these verbs as follows. First, the results of Kita’s Aktionsart tests on them actually show that they are punctual change of state motion verbs. Second, one piece of evidence for the above claim is that in certain sentences with these verbs, the interpretation of which entity moves during the transition may be reversed, but such a reversal can only occur in limited situations, and is not due to the lack of motion encoding in the verbs. Third, the use of hairu/deru for “teleporting” scenes, which has been hypothesized to be a diagnosis for the discrete change of state semantics expressed by Enter/Exit verbs, does not reflect this semantics.

The discussion proceeds as follows. Section 2 reviews Kita’s claim and Tsujimura’s (2002) critique of it. Section 3 describes the range of uses of hairu/deru. Section 4 shows how Kita’s evidence fails to show the lack of motion encoding in these verbs. Section 5 presents Enter/Exit verbs in Sidaama, a Cushitic language, which encode motion according to Kita’s criteria, but can be used for reversal cases and for teleporting cases. Section 6 concludes the paper.

Before we go on to the next section, the rest of this section takes a brief look at hairu/deru, and introduces the terminology used in the present study. (1) and (2) show the constructions where these verbs are typically used.

(1) Booru-ga hako-ni/hako-no naka-ni hait-ta.
ball-NOM box-to/box-GEN inside-to enter-PERF
‘The ball entered the box.’

(2) Booru-ga hako-kara/hako-no naka-kara/hako-no soto-ni de-ta.
blood-NOM box-from/box-GEN inside-from/box-GEN outside-to exit-PERF
‘The ball exited the box.’
The Figure is marked with the nominative case marker -ga, and the Ground is marked with either the goal/locative marker -ni or the source marker -kara; when a locational noun like naka ‘inside’ or soto ‘outside’ intervenes between the Ground and -ni/-kara, the Ground is marked with the genitive marker -no. The present study deals with hairu/deru as used in these constructions.

What Kita means by “Enter/Exit verbs” are those verbs whose static schematic components exhibit an enclosure relationship, where one entity is fully surrounded by another entity (e.g., a person walks into/out of a room). However, hairu/deru can be used for not only cases involving such a relationship (“Enter/Exit events”), but also cases where one entity is partially surrounded by another entity (e.g., a pole goes into/moves out of a ring). This study addresses the issue of whether or not motion is encoded in hairu/deru by looking into these verbs as used for each of the two types of geometric relations.

Instead of the well-established terms, Figure and Ground, the following three pairs of notions, which can sort out two different types of reversals involving hairu/deru in terms of what is reversed, are used in the discussion hereafter to characterize the entities participating in change of location events whose static schematic components exhibit surrounding relationships, including Enter/Exit events: (i) the referent of the subject NP vs. the referent of the ni-/kara-marked oblique NP (or the genitive-marked NP before naka/soto-ni/kara), (ii) surrounded entity vs. surrounding entity (in the post state of a hairu event and in the pre-state of a deru event), (iii) moving entity (or entity manifesting translocation) vs. stationary entity (during the transition).

As in (1) and (2), normally, the referent of the subject NP is surrounded by that of the oblique NP in the post state in the case of hairu and in the pre-state in the case of deru; during the transition from the pre-state to the post state, the referent of the subject NP moves, while that of the oblique NP is stationary. Thus, the two entities participating in hairu/deru events usually exhibit (A) in the following table. (B) and (C) in this table show two types of reversals that may apply to hairu/deru; the italicized parts indicate what is reversed. Even in such deviate cases, these verbs can be used under the conditions discussed later.

<table>
<thead>
<tr>
<th>(A) Normal case</th>
<th>(B) Reversal Type I</th>
</tr>
</thead>
<tbody>
<tr>
<td>subject=surrounded=moving</td>
<td>subject=surrounded=stationary</td>
</tr>
<tr>
<td>oblique=surrounding=stationary</td>
<td>oblique=surrounding=moving</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(C) Reversal Type II</th>
</tr>
</thead>
<tbody>
<tr>
<td>subject=surrounding=moving</td>
</tr>
<tr>
<td>oblique=surrounding=stationary</td>
</tr>
</tbody>
</table>

Table 1: Characterizations of entities in surrounding relationships involving hairu/deru

2 Kita (1999) and Tsujimura (2002)

Talmy (1975, 1985) distinguishes the primitives in the domain of change of location in space through time, (translational) motion and locatedness (stationariness), and states that “only these two motion states are structurally
distinguished by language” (1985: 61). Kita (1999) challenges this by claiming that discrete change of state should also be counted in the inventory of primitives, because unlike English Enter/Exit verbs and verb phrases, Japanese Enter/Exit verbs semantically encode this notion rather than motion. In Kita’s view, what hairu/deru encode are “At one point in time, X is not in Y (hairu)/X is in Y (deru), and at a later point in time, X is in Y (hairu)/X is not in Y (deru),” but the motion of X during the transition is not encoded in the semantics of these verbs.

Kita provides two sets of evidence that hairu/deru are not motion verbs but rather discrete change of state verbs. First, according to him, hairu/deru behave differently, both from English Enter/Exit verbs and verb phrases, which encode motion (specifically, “analogue change of state” in Kita’s terminology), and from motion verbs in Japanese, which encode either punctual or analogue change of state. The results of his Aktionart tests on hairu/deru suggest that these verbs are not durative, i.e., they do not encode analogue change of state (Kita 1999: 314-316). When used with -te-iru, these verbs have the resultative state interpretation (e.g., Uma-ga saku-no naka-ni hait-te-iru. horse-NOM fence-GEN inside-to enter-CONN-exist ‘A horse has been inside the fenced-enclosure.’), unlike durative motion verbs, which normally have the progressive interpretation. Moreover, unlike durative verbs, these verbs cannot be the main verb of S1 in the construction “S1-nagara, S2” (“as the process denoted by S1 continues, the event denoted by S2 happens”) (e.g., *Taro-ga heya-ni hairi-nagara ... Taro-NOM room-to enter-nagara ...). Furthermore, hairu/deru can only be modified with marginal, if any, acceptability by the adverbiaal yukkurito ‘slowly,’ which can usually modify durative verbs (e.g., ???Taro-ga yukkurito heya-ni hait-ta. Taro-NOM slowly room-to enter-PERF to mean, ‘Taro entered the room slowly.’). Thus, these verbs are not durative, but seem to be punctual. Nevertheless, Kita (1999: 317-319) claims that they are not punctual, either, because they involve two points in time between which change takes place, namely, the initial moment of change, when the front end of the surrounded entity is at the boundary, and the final moment of change, when the rear end of the surrounded entity is at the boundary. For example, kuruma-ga tonneru-ni hait-ta shunkan (car-NOM tunnel-to enter-PERF to mean) may refer to either the moment when the front end of the car passes the boundary between the inside and the outside of the tunnel or the moment when its rear end passes the boundary. Kita concludes from these that hairu/deru express neither punctual nor analogue change of state, but discrete change of state.

Second, Kita argues that the default interpretation of what happens during the transition phase in certain sentences with hairu/deru is defeasible, because these verbs do not encode motion during the transition. Thus, these verbs are normally used for cases where (A) in Table 1 holds, but they can also be used for cases where (B) in the table applies. The following examples, which are adapted from Kita (1999: 311-312, 314), illustrate this; the default interpretations are shown in (a), and the reversed interpretations in (b).
(3) At Time 1, a circle and a square (smaller than the circle) are separated from each other. At Time 2, the square is inside the circle.

\[
\text{Sikaku-ga en-ni hait-ta.} \\
\text{square-NOM circle-to enter-PERF}
\]

‘The square entered the circle.’ (a) The square moved. (b) The circle moved.

(4) At Time 1, a square is inside a circle. At Time 2, the square and the circle are separated from each other.

\[
\text{Sikaku-ga en-kara de-ta.} \\
\text{square-NOM circle-from exit-PERF}
\]

‘The square exited the circle.’ (a) The square moved. (b) The circle moved.

(5) Uma-ga saku-no naka-ni hait-ta.

horse-NOM fence-GEN inside-to enter-PERF

(a) ‘A horse entered the fenced enclosure (e.g., by jumping over the fence).’ (b) ‘A horse was inside the fenced enclosure (because the fence was rebuilt to surround it).’

(6) Uma-ga saku-no soto-ni de-ta.

horse-NOM fence-GEN outside-to exit-PERF

(a) ‘A horse exited the fenced enclosure (e.g., by jumping over the fence).’ (b) ‘A horse was outside the fenced enclosure (because the fence was rebuilt to avoid encircling it).’

It has been hypothesized that those languages in which Enter/Exit verbs express discrete change of state can readily use these verbs to describe “teleporting” scenes, specifically “beaming in/out” scenes, where one entity magically disappears outside another entity and reappears inside it (“beaming in”) or disappears inside another entity and reappears outside it (“beaming out”), without any visible motion between the two locations, whereas those languages whose Enter/Exit verbs encode motion have difficulty using their Enter/Exit verbs for such situations (Hendricks & McQueen eds. 1996: 91-93, Senft 1999). In fact, hairu/deru can easily be used for such situations (although complex sentences that contain kieru ‘disappear’ and arawareru ‘appear’ describe the events in an unambiguous way), compared to English Enter/Exit verbs and verb phrases. Thus,

1 The clause in parentheses in (5b) should contain “rebuilt,” rather than “built,” which Kita incorrectly uses. Before any hairu event and after any deru event, the participating entities both have to exist. However, Kita’s (1999: 310) example for ‘Because Taro drew a very large circle, the square was in the circle,’ where hairu is used, may look like a counterexample to this. Nevertheless, this sentence, which is apparently rendered grammatically correct by ‘very large,’ is only possible when Taro was expected to draw a circle that would not surround the square; it is not acceptable when there is no such expectation or when he was expected to draw a circle around the square. Thus, a circle that would not surround the square has to preexist somehow in the discourse context in order for this sentence to be acceptable.

2 Kita mentions that the acceptability of (5b) and (6b) can differ across individuals. As discussed later, these interpretations are possible only when the horse can be regarded as immovable in comparison with the fence.
the use of Enter/Exit verbs for beaming in/out situations has been treated as a crosslinguistic diagnosis for a discrete change of state semantics as opposed to a motion semantics of Enter/Exit verbs.

Tsujimura (2002) disputes Kita’s first set of evidence for hairu/deru as discrete change of state verbs, and claims that these verbs do not behave differently from other motion verbs in Japanese. She points out that there are punctual motion verbs in Japanese, and even though hairu/deru are not durative, they are still motion verbs. For example, because the -te-iru forms of some motion verbs (e.g., tuku ‘arrive,’ iku ‘go,’ kuru ‘come’) have only the resultative state reading, the exclusive resultative state reading of hait-te-iru/de-te-iru does not necessarily mean that hairu/deru lack motion encoding.

Tsujimura further argues that hairu/deru are polysemous, and that like other Japanese intransitive motion verbs that have transitive counterparts (e.g., intransitive: agaru ‘move up,’ noru ‘get on,’ tikazuku ‘get closer’; transitive: ageru ‘raise,’ noseru ‘put up on top of,’ tikazukeru ‘make closer’), these verbs may be motion verbs, which encode motion, or may be inchoative (intransitive) counterparts of verbs of putting, which may or may not encode motion. However, it remains to be explained how these two senses can be distinguished, and why motion may not be encoded in hairu/deru when used as inchoative counterparts of verbs of putting. Moreover, she does not mention Kita’s second evidence, and it is not clear how she would address it.

The present study refutes Kita’s argument for hairu/deru as discrete change of state verbs as follows. First, as Tsujimura states, these verbs are punctual change of state motion verbs (section 4.1). Second, the type of reversal discussed by Kita is only possible under certain restricted conditions, and is not due to the property of hairu/deru as discrete change of state verbs (section 4.2). Third, Enter/Exit verbs in Sidaama, a Cushitic language, are durative like their English counterparts, but like hairu/deru, they can be used for reversal cases and for teleporting situations (section 5). In order to establish a background for the discussion on the above points in sections 4 and 5, the next section describes the range of uses of hairu/deru for change of location in space through time.

3 Range of uses of hairu/deru

3.1 Two types of geometric relationships

The participating entities show one of the following two types of geometric relationships in the post state for hairu and in the pre-state for deru.

The first type of geometric relationship is a “full surrounding relationship,” or an enclosure relationship. In this relationship, basically all of the portions of one entity are surrounded by another entity in all of the dimensions of both entities in the post state of hairu and in the pre-state of deru. Typically, an entity treated as a point or an extent is entirely surrounded by a volumetric or areal enclosure. Enter/Exit events, including the events expressed by the examples presented so far, concern the full surrounding relationship.
The other type of geometric relationship is a “partial surrounding relationship.” In this type of relationship, one entity is partially surrounded by another entity in all the dimensions relevant only to the surrounding entity in the post state of *hairu* and in the pre-state of *deru*. The surrounding relationship is partial from the viewpoint of the surrounded entity in that only a part of it is surrounded, although the surrounding relationship is maximal from the viewpoint of the surrounding entity in that the surrounded entity is surrounded by the surrounding entity in every possible dimension of the surrounded entity. Usually, a portion of a linear entity is surrounded by a two-dimensional, loop-shaped entity (which does not have to be circular) or a volume through which another entity can move, as demonstrated in the following sentences.

(7) Boo-ga wakka-ni hait-ta.
    pole-NOM ring-to enter-PERF
    ‘The pole went into the ring. (lit., The pole entered the ring.)’

(8) Boo-ga wakka-kara de-ta.
    pole-NOM ring-from exit-PERF
    ‘The pole moved out of the ring. (lit., The pole exited the ring.)’

(9) Ito-ga biizu-ni hait-ta.
    thread-NOM bead-to enter-PERF
    ‘The thread passed/was passed through the center of the bead. (lit., The thread entered the bead).’

(10) Ito-ga biizu-kara de-ta.
    thread-NOM bead-from exit-PERF
    ‘The thread pulled itself/was pulled from the center of the bead. (lit., The thread exited the bead).’

As seen shortly, *hairu/deru* can show different behavior depending on which of the relationships they express.

### 3.2 Two types of reversals

There are two types of reversals involving *hairu/deru* that correspond to the two types of geometric relationships mentioned above.

The first type (reversal type I) is the reversal that Kita uses for his second piece of evidence for *hairu/deru* as discrete change of state verbs. As summarized in (B) of Table 1 and as illustrated in (3)-(6), the interpretation of which entity moves during the transition may be reversed; instead of the subject/surrounded entity, the oblique/surrounding entity may be interpreted as moving. This type of reversal is basically restricted to cases where the participating entities are in a full surrounding relationship in the post state of a *hairu* event and

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3 (9) and (10) could be interpreted as ‘One end of the thread entered/exited the bead.’ These are examples of the full surrounding relation, where *ito* ‘thread’ metonymically refers to one of its ends. The ambiguity like the one between such interpretations and those in the glosses for (9) and (10) occurs when the surrounded entity is linear and the surrounding entity is a volume.
in the pre-state of a *deru* event. If the entities are in a partial surrounding relationship, the reversal interpretation is not possible (when the surrounding entity moves, reversal type II is used; see below). For example, no reversal type I interpretations can be given in (7)-(10); it is always the subject/surrounded entity (pole, thread) that should be interpreted as having moved.

The other type of reversal (reversal type II), shown in (C) of Table 1, involves a reversal in the static schematic component of *hairu/deru*. In this type of reversal, the subject/moving entity surrounds the oblique/stationary entity, instead of the other way around, in the post state of a *hairu* event and in the pre-state of a *deru* event. However, it is faithful as to which entity moves during the transition phase with respect to the subject vs. oblique distinction; the referent of the subject NP moves and the referent of the oblique NP is stationary. Reversal type II is exemplified by the following pairs of sentences.

(11) *Wakka-ga* *boo-ni* hait-ta.
    ring-NOM pole-to enter-PERF
    ‘The ring went onto the pole. (*lit.*, The ring entered the pole.)’

(12) *Wakka-ga* *boo-kara* de-ta.
    ring-NOM pole-from exit-PERF
    ‘The ring moved off of the pole. (*lit.*, The ring exited the pole.)’

(13) *Biizu-ga* *ito-ni* hait-ta.
    bead-NOM thread-to enter-PERF
    ‘The bead threaded itself/was threaded. (*lit.*, The bead entered the thread.)’

(14) *Biizu-ga* *ito-kara* de-ta.
    bead-NOM thread-from exit-PERF
    ‘The bead removed itself/was removed from the thread. (*lit.*, The bead exited the thread.)’

This type of reversal is limited to cases where *hairu/deru* express the partial surrounding relationship, and does not apply to cases where they express the full surrounding relationship. Thus, for example, (1) and (2) cannot undergo reversal type II (*Hako-ga booru-ni hait-ta./*Hako-ga booru-kara de-ta.*) to be used for cases where the box moves and surrounds or stops surrounding the ball.

So far, it has been shown that there are two types of geometric relationships that *hairu/deru* can express, and correspondingly there are two types

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4 Reversal type II is fairly common across languages that use their Enter/Exit verbs for a partial surrounding relation as well as a full surrounding relation, and can also usually be found in verbs for putting in/taking out in such languages (e.g., Korean, Amharic, some Romance languages) (Kawachi 2003). The same type of reversal is possible with a few other pairs of intransitive and transitive verbs in Japanese (e.g., *sasaru* ‘become pierced’ and *sasu* ‘pierce’).

5 In these sentences, the locational noun, *naka* ‘inside,’ cannot accompany the oblique NPs, because the referent of the subject NP is never surrounded by that of the oblique NP.
of reversals involving these verbs; reversal type I is exclusive to a full surrounding relationship, and reversal type II to a partial surrounding relationship.

3.3 Teleporting situations
Hairu/deru can be used for teleporting situations involving surrounding relationships, regardless of the type of surrounding relationship and regardless of any occurrence of either type of reversal.

As mentioned earlier, hairu/deru can be used for teleporting situations of a full surrounding relation, i.e., beaming in/out situations. They can also be used for teleporting situations involving reversal type I. For example, (3) and (5) can be used to describe not only situations where the subject/surrounded entity (square, horse) magically disappears outside the oblique/surrounding entity (circle, fence) and reappears inside it, but situations where the oblique/surrounding entity magically disappears and reappears around the subject/surrounded entity.

Hairu/deru can also be used for teleporting situations of a partial surrounding relationship. For example, (7) and (9) can be used for situations where the subject/surrounded entity (thread, pole) magically disappears in a position where it is not surrounded by the oblique/surrounding entity (bead, ring) and reappears in a position where it is surrounded by the oblique/surrounding entity. These verbs can also be used for teleporting situations involving reversal type II. (11) and (13) can be used for situations where the subject/surrounded entity (bead, ring) magically disappears in a position where it does not surround the oblique/surrounded entity (thread, pole) and reappears in a position where it surrounds the oblique/surrounded entity.

Thus, the use of hairu/deru for teleporting situations is not restricted to full surrounding relationship cases including reversal type I cases, but is also possible with partial surrounding relationship cases including reversal type II cases. Therefore, the conditions under which these verbs are used for teleporting situations are different from those under which they are used for reversal type I. (Recall that reversal type I, which Kita claims occurs because of the lack of motion encoded in hairu/deru, is limited to a full surrounding relationship.) This suggests that the use of hairu/deru for teleporting situations and that for reversal type I cannot be attributed to the same property of hairu/deru, and that only one of them or neither of them is a sign of the lack of motion encoding in the verbs. This point is further discussed in section 5.

4 Japanese Enter/Exit verbs are motion verbs
This section shows how Kita’s evidence fails to prove that Japanese Enter/Exit verbs are discrete change of state verbs. 4.1 claims that hairu/deru are punctual change of state motion verbs. 4.2 shows that the use of hairu/deru for reversal type I is not to be ascribed to the lack of motion encoded in these verbs.

4.1 Aktionsart
Hairu/deru are basically punctual change of state motion verbs, and as Tsujimura (2002) states, there is no reason that these verbs have to be classified as non-motion verbs based on their Aktionsart.
According to Kita’s Aktionsart tests and those by other researchers (e.g., Hasegawa 1996, Toratani 1998, 2002), most Japanese non-agentive/self-agentive path verbs are classified as either punctual change of state verbs (achievement verbs) (e.g., *tuku* ‘arrive,’ *noru* ‘get on,’ *modoru* ‘return,’ *otiru* ‘fall,’ *saru* ‘leave,’ *iku* ‘go,’ *kuru* ‘come’) or analogue change of state verbs (accomplishment verbs) (e.g., *agaru* ‘move up,’ *sagaru* ‘move down,’ *noboru* ‘ascend,’ *oriru* ‘descend,’ *wataru* ‘move to the other side of (a plane)). *Hairu/deru* are punctual change of state motion verbs, although they may appear to display temporal duration, depending on the configurations of the participating entities (This applies to other verbs involving boundary-crossing as well; e.g., *koeru* ‘move beyond/over,’ *yokogiru* ‘cross,’ *kuguru* ‘pass through/under’).

*Hairu/deru* are undoubtedly punctual when the surrounded entity is treated as a point (e.g., a point enters/exits a circle). In such a case, as Kita has observed, their -*te-iru* forms have only the resultative state interpretation and do not have the progressive interpretation, they cannot be used in the simultaneity construction, and they cannot be modified by *yukkurito* (see section 2). However, when the surrounded entity is treated as an extent (e.g., a train consisting of many cars enters/exits a tunnel), *hairu/deru* may look durative and appear to involve two points in time between which the change occurs. Their -*te-iru* forms have both the progressive interpretation and the resultative state interpretation (e.g., *Densa-ga tonneru-ni hait-te-iru*. train-NOM tunnel-to enter-CONN-exist ‘The train is entering/has been inside the tunnel.’), they can be used in the simultaneity construction (e.g., *Densa-ga tonneru-ni hairi-nagara, oto-o tate-ta*. train-NOM tunnel-to enter-nagara, noise-ACC produce-PERF ‘As the train entered the tunnel, it made a noise.’), and they can be modified by *yukkurito* (e.g., *Densa-ga yukkurito tonneru-ni hait-ta*. train-NOM slowly tunnel-to enter-PERF ‘The train entered the tunnel slowly.’). *Hairu/deru* can show durative characteristics like these because the punctual property of these verbs, which is in conflict with the durative property of the event where the surrounded entity is usually regarded as an extent, changes to accord with it, owing to a “shift” (in Talmy’s terms) or “coercion” (in Pustejovsky’s terms).

Kita applies the above Aktionsart tests to his examples where the surrounded entities are normally treated as points, and claims that these verbs are not durative. Nevertheless, he argues that these verbs are not punctual, either. In order to demonstrate this, however, as Tsujimura points out, Kita uses examples in which the surrounded entity is usually treated as an extent (a car entering/exiting a tunnel). Based on these two types of examples, he unreasonably concludes that Japanese Enter/Exit verbs are neither durative nor punctual, and can be classified as neither analogue nor punctual change of state verbs.

### 4.2 Reversal type I

Kita concludes from the occurrence of reversal type I that the motion of the subject/surrounded entity and the stationariness of the oblique/surrounding entity are defeasible, and therefore no motion is encoded in Japanese Enter/Exit verbs. However, the question is whether or not this type of reversal has applicability
general enough to make it reasonable to draw the conclusion that Japanese Enter/Exit verbs do not care which entity moves. The fact is that it occurs only in limited situations, and does not reflect an essential property of these verbs.

The possibility of the reversal interpretation of a sentence with hairu/deru used for a full surrounding relationship depends largely on the immovability of the subject/surrounded entity relative to the oblique/surrounding entity. Sentences like (3) and (4) allow the reversal interpretations only when the subject/surrounded entity is perceived as immovable in comparison to the oblique/surrounding entity. If the subject/surrounded entity in these sentences were perceived as in active motion, the reversal interpretations would usually be impossible.

In sentences (1)-(2) and (5)-(6), the subject/surrounded entity is normally perceived as much more movable than the oblique/surrounding entity. Thus, the reversal interpretations are generally impossible or highly unlikely. On the other hand, if the subject/surrounded entity can never be perceived as movable, only the reversal interpretation is possible, as in the following pairs of sentences.

(15) *Tokyo-ga boofuu-iki-no naka-ni hait-ta.*
Tokyo-NOM storm-zone-GEN inside-to enter-PERF
‘It came about that Tokyo was in the storm zone. (*lit.,* Tokyo entered the storm zone.)’

Tokyo-NOM storm-zone-GEN outside-to exit-PERF
‘It came about that Tokyo was out of the storm zone. (*lit.,* Tokyo exited the storm zone.)’

(17) *Puuru-ga ie-no kage-ni hait-ta.*
pool-NOM house-GEN shade-to enter-PERF
‘It came about that the swimming pool was in the shade of the house. (*lit.,* The swimming pool entered the shade of the house.)’

(18) *Puuru-ga ie-no kage-kara de-ta.*
pool-NOM house-GEN shade-from exit-PERF
‘It came about that the swimming pool was out of the shade of the house. (*lit.,* The swimming pool exited the shade of the house.)’

In these examples, it is not the subject/surrounded entity (Tokyo, swimming pool) but rather the oblique/surrounded entity (storm zone, shade) that should be interpreted as moving, and it is not the latter but the former that should be interpreted as stationary. These are instances of a form of fictive motion, “frame-relative motion” (Talmy 1996, 2000), in which a factively stationary entity is fictively depicted as moving and a factively moving entity is fictively depicted as stationary, as in sentences like *I sat in the car and watched the scenery rush past me* and *I was walking through the woods and this branch that was sticking out hit me* (Talmy 1996: 238). Thus, the above type of reversal is not due to the general property of hairu/deru as non-motion verbs that are neutral about which entity
moves during the transition phase. It is only possible in cases where the subject/surrounded entity is perceived as immovable when compared to the oblique/surrounding entity. This type of reversal is not ascribable to the use of hairu/deru as inchoative counterparts of putting verbs, either. Immovable entities cannot be put into or taken out of other entities.

Reversal type I must be due in part to the general fictivity pattern in language that can also be found in vision (Talmy 1996). However, it is possible in only a limited number of languages, and there seem to be certain language-specific factors responsible for the occurrence of such a reversal in these languages. This study hypothesizes that one such factor is the lack of expressions for the reversal cases, which apparently motivates reversal type II as well.

There is one thing that is common between the two types of reversals — the surrounding entity moves without changing its overall shape. Unlike English, Japanese lacks expressions that can be used appropriately for cases where one entity moves, without changing its overall shape, to a position where it surrounds or stops surrounding another entity. First, Japanese lacks adpositions or adpositional complexes like English on(to) and off (of). On(to) can be used for motion events at the end of which one entity is supported by another, and off (of) can be used for motion events at the beginning of which one entity is supported by another, even when the supported entity surrounds the supporting entity (e.g., The ring went on(to) the pole for (11)/The ring moved off (of) the pole for (12)). Furthermore, unlike English, which can use the verb surround for the above type of situation (e.g., The circle surrounded the square for (3b)/The ring surrounded the pole for (11)), Japanese has no verb other than hairu/deru that can be used for such a situation. The Japanese verb kakomu cannot be used for this type of situation, although it corresponds to one of the senses of surround, “spread all around someone/something so as to surround him/her/it” (e.g., Saku-ga ie-o kakon-da. fence-NOM house-ACC surround-PERF ‘The fence (gradually) surrounded the house.’). Thus, hairu/deru are used for such a situation, although they fictively depict the motion of the surrounded entity and the stationariness of the surrounding entity in reversal type I cases and deform the endpoint or starting point schema in reversal type II cases.

5 Enter/Exit verbs in Sidaama, a Cushitic language of Ethiopia
This section presents Enter/Exit verbs in Sidaama, a Highland-East Cushitic language spoken in South Central Ethiopia (Kawachi 2004, in preparation), to demonstrate that the uses of Enter/Exit verbs for reversal type I cases and for teleporting situations have nothing to do with the property of Enter/Exit verbs as non-motion verbs.

Enter/Exit verbs in Sidaama are e’-a/ful-a (-a is the infinitive suffix), respectively. The oblique NP takes the goal postposition -ra or the locative postposition (-te for feminine nouns, -ho for unmodified masculine common nouns, -ra for modified masculine common nouns or masculine proper nouns)
with e'-'a, and takes the source postposition -nni with ful-a. As in Japanese, the oblique NP may be accompanied by the locational noun, giddo ‘inside’ or gobba ‘outside.’ Like English Enter/Exit verbs and verb phrases, these verbs are analogue change of state verbs according to Kita’s criteria. First, these verbs can be used in the progressive form. Second, e'-'a/ful-a can be a verb in S1 in a simultaneity construction similar to “S1-nagara, S2.” Third, these verbs can readily occur with a manner adverbial like suununni ‘slowly.’ Examples are shown below.

(19)
\[
\begin{align*}
\text{(a) min-i-ra} & \quad e'-'a-\text{-nni no.} \\
\text{ise} & \quad \text{house-GEN-to} \quad \text{enter-3SG.F-INF-INST EXIST.3} \\
\text{3SG.F} & \quad \text{(b) min-i-nni} \quad \text{ful-t-a-nni no.} \\
& \quad \text{house-GEN-from} \quad \text{exit-3SG.F-INF-INST EXIST.3}
\end{align*}
\]

‘She is in the process of (a) entering/(b) exiting the house.’

(20)
\[
\begin{align*}
\text{(a) min-i-ra} & \quad e'-'a-\text{-nni} \\
\text{ise} & \quad \text{house-GEN-to} \quad \text{enter-3SG.F-INF-INST} \\
\text{3SG.F} & \quad \text{(b) min-i-nni} \quad \text{ful-t-a-nni} \\
& \quad \text{house-GEN-from} \quad \text{exit-3SG.F-INF-INST}
\end{align*}
\]

\[
\text{bartore} \quad \text{č’abīš-id-u.}
\]

torch \quad \text{light-MID-PERF.3SG.F}

‘As she (a) entered/(b) exited the house, she lit the torch.’

(21)
\[
\begin{align*}
\text{(a) min-i-ra} & \quad e'-'u. \\
\text{ise} & \quad \text{suununni} \quad \text{house-GEN-to} \quad \text{enter-PERF.3SG.F} \\
\text{3SG.F slowly} & \quad \text{(b) min-i-nni} \quad \text{ful-tu.} \\
& \quad \text{house-GEN-from} \quad \text{exit-PERF.3SG.F}
\end{align*}
\]

‘She (a) entered/(b) exited the house slowly.’

However, unlike English Enter/Exit verbs and verb phrases and like hairu/deru, e'-'a/ful-a cover the two types of geometric relationships in 3.1, and also allow the two types of reversals in 3.2. The full surrounding relationship is demonstrated in (19)-(21) and below. (22a) and (22b) are Sidaama descriptions of the scenes that the Japanese sentences (3) and (4) would depict, respectively. (Sidaama lacks words for ‘square’ and ‘circle,’ but can use ‘this thing’ and ‘that thing’ to refer to the two figures.)

(22)
\[
\begin{align*}
\text{(a) ričč-i-ra} & \quad e'-'i. \\
kuni & \quad \text{ričč-i} \quad \text{hakko} \quad \text{thing-GEN-to} \quad \text{enter-PERF.3SG.M} \\
\text{this thing-NOM that} & \quad \text{(b) ričč-i-nni} \quad \text{ful-i.} \\
& \quad \text{thing-GEN-fromexit-PERF.3SG.M}
\end{align*}
\]

‘This thing (square) (a) entered/(b) exited that thing (circle).’
Like (3) and (4), these sentences normally have the default interpretation (The square moved.), but can have the reversal type I interpretation (The circle moved.) only when the subject/surrounding entity is immovable as compared to the oblique/surrounded entity. Similarly, the following pair of sentences may mean that the tree grew and a portion of it entered or exited the fenced enclosure, or may mean that the fence was rebuilt to surround or stop surrounding the tree, which was stationary.

\[(23)\]
\[
\begin{align*}
\text{hakk’iččo} & \quad \text{hutt’-u} \\
\text{tree(NOM)} & \quad \text{fence-GEN}
\end{align*}
\[
\begin{align*}
(a) & \quad \text{giddo-ra} & e’-u. \\
(b) & \quad \text{giddo-nni} & \text{ful-tu}
\end{align*}
\]

‘It came about that the tree was (a) inside/(b) outside the fenced enclosure. (lit., The tree (a) entered/(b) outside the fenced enclosure.)’

There are also cases where only the reversal interpretation is possible. In the following sentences, the subject/surrounded entity (puddle) is immovable compared to the oblique/surrounding entity (shade), and contrary to what the sentences depict, the former is stationary and the latter moves, as in the Japanese examples (15)-(18).

\[(24)\]
\[
\begin{align*}
\text{haameelo} & \quad \text{min-u} \\
\text{puddle(NOM)} & \quad \text{house-GEN}
\end{align*}
\[
\begin{align*}
(a) & \quad \text{č’aal-i-ra} & e’-u. \\
(b) & \quad \text{č’aal-i-nni} & \text{ful-tu}
\end{align*}
\]

‘It came about that the puddle was (a) in/(b) out of the shade of the house. (lit., The puddle (a) entered/(b) exited the shade of the house.)’

Thus, even though Sidaama Enter/Exit verbs are durative, they can be susceptible to the reversal type I interpretation under the same conditions as hairu/deru. Again, this corroborates that reversal I is not triggered by the lack of motion encoding in Enter/Exit verbs.

Sidaama examples of the partial surrounding relationship are shown below. These sentences correspond to the Japanese examples (9) and (10).

\[(25)\]
\[
\begin{align*}
\text{kirre} & \quad \text{thread(NOM)}
\end{align*}
\[
\begin{align*}
(a) & \quad \text{diigo-te/diigo-te giddo-ra} & e’-u. \\
(b) & \quad \text{diigo-te-nni/diigo-te giddo-nni} & \text{ful-tu}
\end{align*}
\]

‘The thread (a) passed/was passed through/(b) pulled itself/was pulled from the center of the bead (lit., The thread (a) entered/(b) exited the bead).’
Sidaama also permits reversal type II. As in the Japanese sentences (13) and (14), when the surrounding entity that is in a partial surrounding relationship with the surrounded entity moves, it can be the subject of e’-a/ful-a.

\[
\text{(26)} \quad \begin{cases} 
\text{diigo} & \text{e’-u.} \\
\text{bead(NOM)} & \text{ful-tu.} \\
(a) \text{ kirre-te} & \text{enter-PERF.3SG.F} \\
(b) \text{ kirre-te-nni} & \text{exit-PERF.3SG.F} \\
\end{cases}
\]

‘The bead (a) threaded itself/ was threaded/(b) removed itself/ was removed from the thread. (lit., The bead (a) entered/(b) exited the thread.)’

It has been shown that, although the Sidaama verbs e’-a/ful-a have temporal duration, they allow the two types of reversals like Japanese Enter/Exit verbs. Also like Japanese, this language does not have adpositions that are analogous to on(to) and off(of), nor does it have a verb like surround; the Sidaama verb dois-a has only one of the senses of surround, “spread all around so as to surround,” like Japanese kakomu, and is restricted to cases where one entity moves incrementally to surround another entity. Therefore, again, one of the reasons that such reversals occur in Sidaama may be because there are no expressions other than e’-a/ful-a available for the reversal cases.

Moreover, like hairu/deru, e’-a/ful-a can be used for teleporting situations regardless of the type of surrounding relation and regardless of the occurrence of either of the types of reversals (though complex sentences containing the verbs ba’-a ‘disappear’ and leell-a ‘appear’ can describe such situations unambiguously). Sentences for ‘She entered/exited the house’ (ise min-i-ra e’-u./ise min-i-nni ful-tu.) can be used for situations where a person disappears at a location outside (e’-a)/inside (ful-a) a house and reappears at a location inside (e’-a)/outside (ful-a) it. The Sidaama verbs e’-a/ful-a can also be used for teleporting situations of reversal type I. For example, (22a), (23a), and (24a) can be used even when the oblique/surrounding entity (circle, fence, shade) magically disappears at a location where it does not surround the subject/surrounded entity (square, tree, puddle) and reappears at a location where it surrounds the subject/surrounded entity. This applies to partial surrounding relation cases including reversal type II cases as well. (25a) and (25b) can be used to describe teleporting situations involving a partial surrounding relation where the thread changes its location by disappearing and reappearing, and (26a) and (26b) can be used to describe teleporting situations of reversal type II cases where the bead changes its location by disappearing and reappearing.

Therefore, even though e’-a/ful-a are durative, they can be used for teleporting situations. Hence, the use of Enter/Exit verbs for such situations cannot be a diagnosis for the lack of motion encoding in them.
6 Conclusion
The present study has argued that Japanese Enter/Exit verbs are motion verbs that encode punctual change of state, and do not provide a counterexample to the exhaustive motion-locatedness dichotomy in change of location in space through time. Neither the use of Enter/Exit verbs for reversal cases nor their use for teleporting situations can be ascribed to the lack of the encoding of motion in these verbs. Exactly why Enter/Exit verbs are used for these types of situations in some languages is left for future research.

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