JAPANESE MOTION VERBS

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1. Introduction

It has been pointed out that English motion verbs can be generally combined with a goal expression, while Japanese motion verbs such as hashiru 'run' and oyogu 'swim' are not used in quite the same way (Ikegami 1981, 1985, Yoneyama 1986) The combination of these verbs and the particle e that expresses a goal sounds unnatural.

(1) a) John-wa eki-e hashitta
   John-TOP station-to ran
   'John ran to the station'

b) John-wa kish- e oyoda
   John-TOP shore-to swam
   'John swam to the shore'

However, these verbs can take made 'as far as' or e mukatte 'toward' in natural expressions

(2) a) John-wa eki-made hashitta
    John-TOP station-as far as ran
    'John ran as far as the station'

b) John-wa eki-e mukatte hashitta
    John-TOP station-toward ran
    'John ran toward the station'

(3) a) John-wa kish-made oyoda
    John-TOP shore-as far as swam
    'John swam as far as the shore'

b) John-wa kish-e mukatte oyoda
    John-TOP shore-toward swam
    'John swam toward the shore'

Furthermore, if these verbs are made into a serial verb construction with the verb iku 'go', they can be compatible with the particle e.

(4) a) John-wa eki-e hashitte-ittta
    John-TOP station-to running-went
    'John went to the station running'
Kokue

b John-wa kishi-e oyuide-itta
  John-TOP shore-to swimming-went
  'John went to the shore swimming'

Ikegami (1981, 1985) accounts for this behavior of Japanese motion verbs by the notions 'process-oriented' vs 'goal-oriented'. Ikegami (1985 300) claims that Japanese motion verbs do not represent a motion as something goal-reaching, but rather as a process that may or may not lead to reaching the goal. Yoneyama (1986) also gives a similar explanation and attempts to formalize the semantic structure of Japanese motion verbs in the framework of Conceptual Semantics developed by Jackendoff (1983). However, Yoneyama's analysis is exclusively based on boundedness, and it leaves some problems with his classification of Japanese motion verbs.

One of main problems in the previous studies is that they do not explain the differences in compatibility among three types of motion verbs as shown in (5):

(5) a (=1a) ?John-wa eki-e hashitta
  John-TOP station-to ran
  'John ran to the station'

b John-wa okyoo-e agatta
  John-TOP roof-to went up
  'John went up to the roof'

c *John-wa Mary-no heya-e odotta
  John-TOP Mary-GEN room-to danced
  'John danced to Mary’s room'

The combination of the verb hashiru 'run' and the particle e sounds unnatural. However, the verb agaru 'go up' is compatible with e. On the other hand, the combination of odoru 'dance' and the particle e is totally inappropriate, no one accepts this combination.

Furthermore, there is a contradiction in the constraint on goal expressions:

(6) a (=1a) ?John-wa eki-e hashitta
  John-TOP station-to ran
  'John ran to the station'

b (=2a) John-wa eki-made hashitta
  John-TOP station-as far as ran
  'John ran as far as the station'

Both particles e and made specify a goal. However, the previous studies are exclusively based on the notion that e specifies a goal. The constraint does not apply to a goal expressed by the particle made.
In order to solve these problems, this paper, in the framework of Jackendoff's Conceptual Semantics (1990), examines the nature of the particles and analyzes Japanese motion verbs with different particles in various Path expressions. Finally, the classification of Japanese motion verbs and their conceptual structures will be formalized.

2. Jackendoff's Conceptual Semantics

Jackendoff (1983, 1990, 1991) proposes a theory of semantics called Conceptual Semantics, which hypothesizes that there is a form of mental representation called conceptual structure that is common to all natural languages. Conceptual structure is envisioned as a computational form that encodes human understanding of the world, and there is a set of correspondence rules that relate conceptual structure to syntactic structure.

The formation rules for conceptual structure include major conceptual categories such as Thing, Event, State, Place, Path, Property, Time, and Amount, each of which can be elaborated into a function-argument structure. The following are basic formation rules for the spatial domain that are relevant to the present discussion.

(7) a [PLACE] → [Place-PLACE-FUNCTION ([THING])]

b [PATH] → ([TO FROM TOWARD AWAY-FROM VIA] PATH)

c [EVENT] → [Event GO ([THING], [PATH])]

(7)a indicates that a Place-function such as IN and NEAR has one argument that belongs to the category Thing. The argument serves as a spatial reference point, in terms of which the Place-function defines a region. Similarly, in (7)b each of five Path-functions, TO, FROM, TOWARD, AWAY-FROM, and VIA has one argument belonging to the category Thing or Place. Each Path-function maps a spatial reference Thung or Place into a specified trajectory. (7)c shows that an Event-function GO has two arguments Thung and Path, and it denotes a Thung in motion traversing a Path. Accordingly, Jackendoff (1991) gives the following syntactic structure and the corresponding conceptual structure.

(8) a [s[NP BILL][VP went][PP into][NP the house]]

b [Event GO([Thish BILL], [Path TO([Place IN([Thing HOUSE])])])]

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Here the entire Event can be read as “Bill traverses a path that terminates at the interior of the house.” The standard thematic role Theme, the thing in motion, is the conceptual constituent that serves as the first argument of GO, it is shown as [-theme BILL]. Also, the thematic role Goal, the point at which the motion terminates, is the constituent that serves as the argument of TO, it is shown as [goal IN([theme HOUSE])].

3. Path vs. Manner

First, observe the following sentences:

(9) a (=5b) John-wa okuyoo-e agatta
John-TOP roof-to went up
‘John went up to the roof’

b John-wa sekii-e modotte
John-TOP seat-to went back
‘John went back to the seat’

c ?John-wa yama-no fumoto-e subetta
John-TOP mountain-GEN foot-to slid
‘John slid to the foot of a mountain’

d ?booru-wa tonari-no niwa-e korogatta
ball-TOP neighbor-GEN garden-to rolled
‘The ball rolled to the neighbor’s garden’

As shown in (9)c and d, the verbs suberu ‘slide’ and korogaru ‘roll’ behave the same way as hashiru ‘run’ and oyogu ‘swim’. The combination of these verbs and the particle e sounds unnatural.

However, the verbs agaru ‘go up’ and modoru ‘go back’ behave differently from other motion verbs. They are compatible with the particle e as shown in (9)a and b. As one way of accounting for this behavior, Talmy’s (1985) lexicalization types of motion verbs are useful here. Talmy distinguishes three types of motion verbs with respect to the particular components of a motion event represented in the verb root: motion verbs of Path conflation, Manner/Cause conflation, and Figure conflation. Verbs of Path conflation such as enter and exit express a Path and a fact of motion, verbs of Manner/Cause conflation such as run and swim express a Manner/Cause and a fact of motion, verbs of Figure conflation such as rain and spit express a Figure and a fact of motion. Under these categories, the verbs agaru ‘go up’ and modoru ‘go back’ are verbs of Path conflation, they express a motion occurring in a certain Path. On the other hand, suberu ‘slide’ and korogaru ‘roll’, like hashiru ‘run’ and oyogu ‘swim’, are verbs of Manner conflation, they express a motion occurring in a certain Manner. Accordingly, we can claim that verbs of Manner conflation, not Path conflation, have a constraint on goal expressions.
Talmy (1985) points out this kind of bifurcation of Path expressions and Manner expressions in many languages having predominant motion verbs of Path conflation. In Spanish, for example, if both Path and Manner are expressed in the same sentence, the verb root expresses Path, while Manner is expressed by an adverbial or a gerundive, however, the Manner component is often omitted.

(10) La botella entró a la cueva (flotando)
the bottle moved in to the cave (floating)

'The bottle floated into the cave.'

Furthermore, Jackendoff (1990) analyzes this behavior as the separation of GO-function and MOVE-function in conceptual structure. The GO-function expresses object-external motion that traverses an externally specified Path. On the other hand, the MOVE-function expresses Manner of motion, that is, object-internal motion reflecting the internal dispositions and motions of the parts of the object. Each conceptual structure is assigned by Jackendoff as follows.

(11) a. GO-function
    \[ \text{Event GO((Thing), (Path))} \]

b. MOVE-function
    \[ \text{MOVE((Thing))} \]
    \[ \text{RESULT [Matter X]} \]

However, Jackendoff (1990:89) also points out that English, as a marked case, permits GO-function to be optionally incorporated into a motion verb of Manner conflation and gives the following examples.

(12) a. Willy wiggled out of the hole

b. Debbie danced into the room

The verbs *wiggled* and *danced* express Manner, however, they can occur with Path-expressions. These can be contrasted with either Spanish motion verbs or Japanese motion verbs.

4. Type of Path-function

The above observation indicates that in order to be compatible with goal expressions, Path must be conflated in the motion verb. However, not all verbs of Path conflation are compatible with goal expressions, as shown in (13).
The difference is clear from their conceptual structures. The verbs *agaru* ‘go up’ and *modoru* ‘go back’ have bounded Path-function TO that specifies a goal. However, *hana1eru* ‘go away’ and *tooru* ‘go through’ do not have the TO-function. Path-function AWAY-FROM and VIA are contained in *hanareru* and *tooru* respectively. These functions are unbounded, therefore, a goal expression is impossible.

Also, it should be noted that the bounded Path-function TO is contained in *agaru* ‘go up’ and *modoru* ‘go back’, therefore, these verbs can take the particle *made* ‘as far as’ that specifies a goal. However, they cannot take *e mukatte* ‘toward’ that expresses an unbounded Path as shown in (14).

(14) a (9a) John-wa okujoo-e agatta
    John-TOP roof-to went up
    ‘John went up to the roof’

b (9b) John-wa sek1-e mukatte agatta
    John-TOP seat-toward went up
    ‘John went up toward the roof’

c John-wa sek1-o/*-e hanareta
    John-TOP seat-ACC went away
    ‘John went away from the seat’

d John-wa kooeN-o/*-e tootta
    John-TOP park-ACC went through
    ‘John went through the park’

The difference is clear from their conceptual structures. The verbs *agaru* ‘go up’ and *modoru* ‘go back’ have bounded Path-function TO that specifies a goal. However, *hanareru* ‘go away’ and *tooru* ‘go through’ do not have the TO-function. Path-function AWAY-FROM and VIA are contained in *hanareru* and *tooru* respectively. These functions are unbounded, therefore, a goal expression is impossible.

Also, it should be noted that the bounded Path-function TO is contained in *agaru* ‘go up’ and *modoru* ‘go back’, therefore, these verbs can take the particle *made* ‘as far as’ that specifies a goal. However, they cannot take *e mukatte* ‘toward’ that expresses an unbounded Path as shown in (14).

(14) a John-wa okujoo-made agatta
    John-TOP roof-as far as went up
    ‘John went up as far as the roof’

b *John-wa okujoo-e mukatte agatta
    John-TOP roof-toward went up
    ‘John went up toward the roof’
Based on the above observation, I conclude that the conceptual structure of motion verbs of Path conflation is a basic Event structure containing GO-function and Path-function as follows

\[(\text{Event} \{ \text{Thing} \}, \{ \text{Path} \})^n\]

If the verb has the bounded Path-function TO, goal expressions are possible, however, other unbounded Path-functions are not compatible with goal expressions.

5. Implicit Path in Manner

In the previous sections, we observed that verbs of Manner conflation have a constraint on goal expressions. However, there are two types of verbs of Manner conflation, as shown in the following:

\[(16) \text{a} (=1a) \text{John-wa eki-e hashitta} \rightarrow \text{John ran to the station} \]

\[(16) \text{b} (=2a) \text{John-wa eki-made hashitta} \rightarrow \text{John ran as far as the station} \]

\[(16) \text{c} (=2b) \text{John-wa eki-e mukatte hashitta} \rightarrow \text{John ran toward the station} \]

\[(16) \text{d} (=4a) \text{John-wa eki-e hashitte-itta} \rightarrow \text{John ran to the station running} \]

\[(17) \text{a} (=5c) \text{Mary-no heya-e odotta} \rightarrow \text{John danced to Mary’s room} \]

\[(17) \text{b} (=5c) \text{Mary-no heya-made odotta} \rightarrow \text{John danced as far as Mary’s room} \]
The verbs *odoru* 'dance' and *hazumu* 'bounce' are motion verbs of Manner conflation. However, these verbs behave differently from other verbs of Manner conflation. The difference becomes immediately apparent, *odoru* 'dance' and *hazumu* 'bounce' do not take any particle specifying a Path. This means that these verbs cannot express a Path unless they are combined with the verb *ikku* 'go'. What accounts for these differences is that these verbs inherently have a difference in meaning. Verbs such as *hashiru* 'run' implies that the subject externally traverses a Path. However, verbs such as *odoru* 'dance' and *hazumu* 'bounce' have no such implication. This means that the combination of the verb with an implicit Path such as *hashiru* 'run' and the particle *e* is not totally inappropriate, although to many speakers it sounds unnatural. On the other hand, *odoru* 'dance' and *hazumu* 'bounce', without an implicit Path, cannot express any Path as the occurrence of the particle *e* is unacceptable.

Accordingly, two types of motion verbs of Manner conflation should be distinguished. Verbs such as *hashiru* 'run' and *nyogu* 'swim' imply a Path, that is, they have an implicit GO-function in conceptual structure. On the other hand, verbs such as *odoru* 'dance' and *hazumu* 'bounce' do not, they have only MOVE-function. Each structure is assigned as follows:

(19) Verbs of Manner conflation with implicit Path

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GO( [Thing] \{Path \}A )
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\Delta \text{event} \{\text{Manner}X\}
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(20) Verbs of Manner conflation without implicit Path

\[
\begin{align*}
\text{MOVE}([\text{Ibang, L}]) \\
\text{\textsc{fomi} \text{[Manner X]}}
\end{align*}
\]

Furthermore, the verb *ha\text{zu\textmu} ‘bounce’ shows an interesting characteristic. Examine the following sentences:

(21) a (=18a) *booru-wa tonari-no niwa-e hazuN\text{nda}’
ball-TOP neighbor-GEN garden-to bounced
‘The ball bounced to the neighbor’s garden’

b (=18b) *booru-wa tonari-no niwa-made hazuN\text{nda}’
ball-TOP neighbor-GEN garden-as far as bounced
‘The ball bounced as far as the neighbor’s garden’

c (=18c) *booru-wa tonari-no niwa-e mukatte hazuN\text{nda}’
ball-TOP neighbor-GEN garden-toward bounced
‘The ball bounced toward the neighbor’s garden’

d (=18d) booru-wa tonari-no niwa-e hazuN\text{nde}-\text{itta}’
ball-TOP neighbor-GEN garden-to bouncing-went
‘The ball went to the neighbor’s garden bouncing’

(22) a. *booru-wa te\text{Njoo-e hazuN\text{nda}’}
ball-TOP ceiling-to bounced
‘The ball bounced to the ceiling’

b booru-wa te\text{Njoo-made hazuN\text{nda}’}
ball-TOP ceiling-as far as bounced
‘The ball bounced as far as the ceiling’

c booru-wa te\text{Njoo-e mukatte hazuN\text{nda}’}
ball-TOP ceiling-toward bounced
‘The ball bounced toward the ceiling’

d *booru-wa te\text{Njoo-e hazuN\text{nde}-\text{itta}’}
ball-TOP ceiling-to bouncing-went
‘The ball went to the ceiling bouncing’

As observed earlier, the verb *ha\text{zu\textmu} ‘bounce’ is a motion verb of Manner conflation that does not imply an externally traversed Path. However, the above examples indicate that the compatibility of this verb and the particles varies depending on its reference point, that is, *tonari no niwa ‘neighbor’s garden’ or te\text{Njoo ‘ceiling’}.

Also, it should be pointed out that *ha\text{zu\textmu} ‘bounce’ expresses one single movement, in which the subject bounces into the air away from a surface. By combining with *iku ‘go’, such a single movement can change into the repetition of the movement, *hazuN\text{nda}-iku ‘go-bouncing’ expresses the
repetition of bouncing. As a result, this verb can express an externally traversed Path. However, taking teNjoo 'ceiling' as the reference point, hazumu can express a single upward movement and, in such a context, the repetition of the movement is not possible. Accordingly, the serial verb expression hazuNde-ku 'go-bouncing' is impossible as shown in (22)d.

6. The conceptual structure of e, e mukatte, and made

The particle e is generally used for a goal expression and English to is used as the corresponding preposition. Also, e mukatte expresses an unbounded Path and corresponds to English toward. In conceptual structure the preposition to most directly expresses the Path-function TO as formulated by Jackendoff (1983, 1990, 1991). TO defines a Path that terminates at Thing or Place serving as its argument, and the thematic role Goal is assigned to the argument.

Jackendoff (1991) develops a family of conceptual features and functions to account for the semantics of noun phrases and applies the machinery to detailed analyses of the Path-function. In this analysis, Path and Place can be combined into a subcategory called Space, Place can be regions of any dimensionality, while Path can be only 1-dimensional and must be directed. The following structure for TO is assigned by Jackendoff:

\[
\text{TO X} = \begin{bmatrix}
+ b, -1 \\
\text{DIM 1d DIR} \\
\text{Space BDBY}^*([\text{Thing / Space X}])
\end{bmatrix}
\]

Here TO specifies a 1-dimensional bounded directed Space (i.e., a bounded Path), the Path is bounded on its positive end by the Thing or Space X that is a Goal.

On the other hand, for TOWARD, Jackendoff assigns two possible structures:

\[
\text{(24) a TOWARD X} = \begin{bmatrix}
-b, -1 \\
\text{DIM 1d DIR} \\
\text{GR} \begin{bmatrix}
+ b, -1 \\
\text{DIM 1d DIR} \\
\text{BDBY}^*([X])
\end{bmatrix} \\
\text{Space}
\end{bmatrix}
\]
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b  \( \text{TOWARD } X = \begin{bmatrix} -b_x - 1 \\ \text{DIM} \text{d DIR} \\ \text{Space BDBY}^*(X) \end{bmatrix} \)

TOWARD is described as a 1-dimensional unbounded directed space (i.e., an unbounded Path). The structure (24)a indicates that TOWARD \( X \) is treated as a "ground-up" version of TO \( X \), that is, as the path of which TO \( X \) is composed. Alternatively, the structure (24)b indicates that TOWARD \( X \) is treated as a space that is bounded by but does not include the Goal \( X \).

However, it should be noted that the Japanese particle \( e \) is not strictly the same as the English preposition \( to \). It is pointed out that in addition to a Goal expression, the particle \( e \) expresses an unbounded Path also, that is, \( e \) can express a similar meaning to \( e \text{ mukatte} \) "toward". This is shown from the following examples as well.

(25) a John-wa Mary-e chikazuta
    John-TOP Mary-toward went near
    'John approached Mary'

b John-wa eki-e mukatta
    John-TOP station-toward went toward
    'John left for the station'

\textit{Chikazuta} 'go near' and \textit{mukau} 'go toward' are motion verbs in which an unbounded Path is conflated. Thus, we expect not \( e \) but \( e \text{ mukatte} \) 'toward' to appear. However, these verbs actually take the particle \( e \), which does not express a goal but specifies an unbounded Path. It seems that these explicit unbounded Path verbs neutralize the TO-function of the particle \( e \) and allow it to express the TOWARD-function. Also, in the sentence with the verb of Manner conflation such as \textit{hashiru} 'run' that does not have any specific Path function, if the speaker means \textit{toward} by the particle \( e \), the sentence is natural to the speaker as follows.

    John-TOP station-to ran
    'John ran to the station'

Speaker B  John-wa eki-e hashitta
    John-TOP station-toward ran
    'John ran toward the station'

It is considered that this is also one of the reasons why the combination of the verb \textit{hashiru} 'run' and the particle \( e \) is acceptable to some speakers.

Next, I will focus on the particle \textit{made} that corresponds to English \textit{as far as}. As already discussed, the particle \textit{made} 'as far as' specifies a goal \textit{Made}, like the particle \( e \), defines a Path that
termimates at a certain point. This causes a contradiction in the constraint on goal expressions as follows:

(27) a (=1a) John-wa eki-e hashitta
    John-TOP station-to ran
    'John ran to the station'

b (=2a) John-wa eki-made hashitta
    John-TOP station-as far as ran
    'John ran as far as the station'

c (=2b) John-wa eki-e mukatte hashitta
    John-TOP station-toward ran
    'John ran toward the station'

d (=4a) John-wa eki-e hashitte-1tta
    John-TOP station-to running-went
    'John ran to the station running'

The verb hashiru 'run' is not compatible with the particle e that specifies a goal, while it can take made that also specifies a goal, as shown in (27)a and b. However, if we focus on not only boundedness but also an inherent meaning the particle made has, this problem can be solved. Made not only specifies a goal, but also implies the whole process for attaining the goal. Therefore, the particle made behaves like a particle specifying an unbounded Path. I will assign the following structure to made 'as far as'

\[
\begin{bmatrix}
+ b_1 - 1 \\
\text{DIM1dDIR}
\end{bmatrix}
\]

\[
\text{COMP} \left[ \begin{bmatrix}
- b_1 - 1 \\
\text{Space DIM1dDIR}
\end{bmatrix} \right]
\]

Here made specifies a 1-dimensional bounded directed space (i.e., a bounded Path), however, the Path is composed of an unbounded Path that is terminated by the Goal X. Made places a boundary on an otherwise unbounded Path.

Furthermore, it is worth pointing out that durational adverbial tests for made show interesting results.1

(29) a John-wa eki-made 30-pun-de itta
    John-TOP station-as far as 30-minutes-in went
    'John went as far as the station in 30 minutes'
Examples (29) and (30) clearly indicate that an event expressed by the sentence is bounded. However, in (31), taking hashiru 'run' as the verb, the sentence can be both bounded and unbounded. The verb hashiru 'run', unlike iku 'go and agaru 'go up', does not have any specific Path-function. Therefore, both bounded and unbounded nature of the particle made appear in the sentence.

In short, the fact that made 'as far as' specifies a bounded Path but it also implies an unbounded Path for attaining the goal can account for the contradiction in the constraint on goal expressions. The verb hashiru 'run' is a motion verb of Manner conflation with an implicit Path, and this verb is compatible with made even though it specifies a goal. This is because made implies an unbounded process also. Accordingly, Ikigami's claim that Japanese verbs are 'process-oriented' is plausible. However, we cannot simply claim that Japanese motion verbs of Manner conflation cannot express a goal.

7. Summary and Conclusion

Based on our observations, Japanese motion verbs and their conceptual structures are classified as follows:

(32) Path conflation

agaru 'go up', oriru 'go down', hataru 'go in', deru 'go out', hanareru 'go away', saru 'go away', yoru 'go near', chikazuku 'go near', susumu 'go forward', sagaru 'go backward', go down', modoru 'go back', mawaru 'go around', tooru 'go through', sugiru 'go past', wataru 'go across', koeru 'go across', kuguru 'go through under', makau 'go toward', etc.
As observed above, Japanese motion verbs are predominantly verbs of Path conflation. As shown in such languages, there is a constraint on Path expressions by verbs of Manner conflation. Verbs of Path conflation already contain GO-function and Path-function. Therefore, if a bounded Path, that is, the TO-function is contained, these verbs are compatible with particles that specify a bounded Path. Characteristically, the particle *e* can have TOWARD sense also depending on the verbs with which it occurs, therefore the TOWARD-function can be compatible with *e*.

Verbs of Manner conflation are divided into two types: verbs with implicit Path (i.e., implicit GO-function) and verbs without implicit Path (i.e., only MOVE-function). Verbs without GO-function cannot express any Path; they cannot take particles that specify Path. However, if the verb implies an externally traversed Path, that is, if it contains an implicit GO-function, a Path expression is possible. Since no specific Path-function is contained in these verbs, the verbs can take various Paths.

However, there is a constraint on goal (bounded) expressions. It is possible that these verbs take the particle *e*, but the expressions sound unnatural to many speakers. Furthermore, one interesting point is that these verbs can take *made* 'as far as' that specifies a bounded Path. The way of accounting for this behavior is that this particle not only expresses a goal but also implies the whole process for attaining the goal, therefore, *made* can be treated like a particle specifying an unbounded Path.

In Japanese motion verbs, then, verb-particle compatibility depends on the verb's conflation patterns. Path conflation or Manner conflation. This reflects the separation of the GO-function and the MOVE-function, which is suggested by Jackendoff. Furthermore, our observation indicates that Talmy's lexicalization types Path and Manner do not strictly correspond to GO and MOVE respectively, some verbs of Manner conflation have an implicit Path as well. Therefore, the GO-
function should be included in such verbs of Manner conflation in conceptual structure, the GO-
function plays a direct role in expressing Path:

Finally, it is worth pointing out the role of the particles in Japanese particles, like English prepositions, directly specify Path. However, as shown above, it is not the case that there is a clear-
cut one-to-one correspondence between particles and functions. The particle は is an example of this
This particle, unlike English to, may have both the TO-function and the TOWARD-function, this
means that は can specify both bounded and unbounded Paths. Therefore, this obviously affects verb-
particle compatibility. Furthermore, the choice of TO or TOWARD may depend on the speaker or
contexts. Also, the behavior of the particle は shows that the simple bounded vs. unbounded
distinction is not enough to explain all facts of motion verbs. Accordingly, we cannot simply claim
that Japanese motion verbs of Manner conflation cannot be compatible with bounded Path.
However, the verb-particle compatibility is obviously influenced by the concept of boundedness, and
Kogami's claim that Japanese verbs are "process-oriented" is supported by the observed behavior of
motion verbs.

NOTES

1 Some Speakers accept the sentences (1)a and b I will discuss this matter later

2 The verb いく 'go' is compatible with the particle は

      John-wa eki-e itta
       "John-TOP station-to went"

3 The bounded/unbounded distinction is based on the actualization of a terminal point (or a
delimiter) in Path expressions, for example, to the house specifies a Path that attains a goal (i.e.
a bounded Path), while toward the house does not specify the goal of a Path (i.e. an unbounded
Path)

4 Yoneyama claims that in Japanese most motion verbs are based on Manner. However,
Japanese motion verbs are predominantly Path-based. The list of Japanese motion verbs will be
shown in the final section

5 Also, these verbs can take まで 'as far as' or まで 'toward', and further, if combined
with いく 'go', they can be compatible with は

6 English is known as a language having predominant motion verbs of Manner conflation
Jackendoff (1990) proposes a language-particular rule (GO-adjunct rule) that accomplishes this
incorporation. For detailed discussion see Jackendoff (1990)
7 *Modoru* has a *selectional restriction* (general semantic restrictions on arguments, explicit information about its arguments is supplied by the verb) on the argument of Path-function TO, Thing must be a "former point or place". The lexical conceptual structure of *modoru* is as follows:

\[ \text{[EvenGO([former]Path(TO([former]FORMER POINT)])A)} \]

8 An argument marked by the *linking subscript A* must be expressed by a syntactic argument. This treatment is discussed in Jackendoff (1990 ch 11, and also 1991)

9 If the sentence expresses a single movement of *hazumu* 'bounce', the use of the particle *e* or *made* can be acceptable. However, such an expression requires a particular context. I will discuss this matter later.

10 In a sense, *hazumu* 'bounce' has an implicit vertical Path. However, this is different from the externally traversed Path that Jackendoff means by Path. Therefore, I put verbs like *hazumu* 'bounce' and verbs like *odoru* 'dance' into the same category.

11 The features such as boundedness (+b), internal structure (+i), dimensionality and directionality, and the functions such as PL (plural), ELT (element of), COMP (composed of), GR (ground), PART (part of), CONT (containing), BD (bound) and DBBY (bounded by) are proposed. For detailed discussion, see Jackendoff (1991).

12 GR (ground) is an extracting function, its output is a sub-entity of its argument. The inverse of GR is COMP (composed of) that is an including function. It maps its argument into larger entity that includes the argument.

13 *30-pun-de* 'in 30 minutes' can be added to bounded propositions, while *30-pun-kan* 'for 30 minutes' can be added to unbounded propositions.

14 Verbs listed here are based on data in Wienold (1995).

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