Why English Motion Verbs are Special?

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Kageyama, Taro. 2003. **Why English Motion Verbs are Special?** *Korean Journal of English Language and Linguistics* 3-3, 341-373. A cross-linguistic examination of motion constructions reveals that the nature of the special property of English motion verbs that Tenny (1995) discussed—namely, why English can freely append locational delimiters to manner-of-motion verbs, as in *Bill swam/rowed/canoed to the end of the lake*—resides not in the verbs but in the semantic structure of the prepositions that denote transition from motion to end location. It is further argued that the differentiation of bounded paths from non-bounded ones provides a clear-cut basis on which to distinguish motion constructions from resultative constructions. This proposal provides an alternative to the analyses of resultative constructions by Wechsler (1997) and Rappaport Hovav and Levin (2001).

Key Words: motion verbs, goal, boundedness, telicity, path, route, satellite, resultative construction

1. Introduction

In her paper entitled "How motion verbs are special," Tenny (1995) compares the "measuring-out" functions of three classes of verbs—change of state (*He cleaned the floor*), incremental theme (*She ate the sandwich*), and manner of motion (*She walked to the bridge*)—and observes that whereas the first two classes inherently have the objects that measure out the events, the last class is basically underspecified in telicity and acquire a temporal terminus by the "productive process" (p. 54) of adding a goal phrase, as in *Bill canoed to the other side of the lake*, or a path direct object, as in *They walked the Appalachian Trail*. Tenny goes on to suggest that this special property of manner-of-motion verbs comes from "the world knowledge

associated with distance as a *measuring-scale*" (p. 54). In a word, if motion ranges over a certain distance, that distance bears the same measuring-out function as the object of change-of-state verbs or incremental-theme verbs. She remarks as follows:

(1) This is consistent with our knowledge of the world, which tells us that given a kind or a manner of motion, that motion may be easily understood as translative, traversing distance. Furthermore, once we have translative motion, we may always have some place or location where that motion ends. The productivity of the construction lies in the productivity of the associated world knowledge. (Tenny p. 63)

Furthermore, concerning the universality of this world knowledge, Tenny carefully continues as follows:

(2) I have not adopted the assumption that world knowledge is universal, ... The properties of distance as a measuring-scale that ... make motion verbs special may be reflections of the world knowledge of the English speaker, as it is encoded in the English language. (p. 64)

As a matter of fact, it is fairly well known that the addition of a locational terminus to manner-of-motion verbs is not freely allowed in languages like Japanese, Korean, Spanish, and many other languages. Thus, the verbatim translation of the English sentence in (3a) will bring about ill-formed sentences like (3b) in Japanese and (3c) in Korean.

(3) a. English: *John walked into the kitchen.*
b. Japanese: **John-wa daidokoro-no-naka-ni aruita.*
J.-TOP kitchen-GEN-inside-to walked
c. Korean: **John-un puek-an-ey kele-ss-ta.*

J.-TOP kitchen-GEN-inside-to walked

From this it will follow that the "world knowledge" that Tenny attributed to English speakers is not universal, and that the productive process of adding a delimiting phrase to manner-of-motion verbs cannot be dispensed with as a mere pragmatic knowledge but instead must be viewed as part of the linguistic structure of English (and other languages that have the operation under discussion).

As a follow-up to Tenny's study, the present paper will address the question of why the native speakers of English have the knowledge that translative motion will end at some place but the speakers of Japanese, Korean, and other languages do not share it. Concerning this issue, there have been several proposals in the literature, but as far as I can see, they are observations or descriptions at best and fail to capture the real nature of the phenomena. Talmy's (1985, 2000) lexicalization typology based on conflation patterns or verb vs. satellite framing, though attractive, merely state factual tendencies which will encounter a number of exceptions and uncertainties. Levin and Rapoport's (1988) lexical subordination, Jackendoff's (1990) adjunct rule, and Pustejovsky's (1991) event composition provide good formalizations for the representation of the facts but offer no real explanation for why these mechanisms are available in English but not in Japanese.

In this paper, I will take a cross-linguistic approach to this issue, specifically comparing English with Japanese. (While I believe that what I describe about Japanese can be reduplicated for Korean, I leave the demonstration to Korean specialists.) In section 1, I will point out inadequacies of Talmy's conflation typology and present an alternative view based on the demarcation of path phrases into bounded and non-bounded ones. It is demonstrated that Japanese, Korean, and Spanish, which are deemed "Path-conflating" languages in Talmy's classification, reject bounded paths but are fully consonant

with phrases related to non-bounded paths like a Route, Direction, and Distance. In section 2, the exact nature of the special property of English motion structure is elucidated. It is shown that what is peculiar about English is not its manner-of-motion verbs but the semantic structure of the preposition *to*, which serves to bridge the two domains of durative motion and end location. This analysis is supported by the existence of special sets of transitional adverbials in Danish and other languages (what Talmy calls "path satellites"). In section 3, the distinction between bounded and non-bounded paths, observed in intransitive motion verbs, is carried over to transitive verbs of caused motion like *push* and *kick*. On the basis of the parallelisms between transitive and intransitive motion verbs, section 4 will point out inadequacies of recent studies on resultative constructions (Wechsler 1997, Wechsler and Noh 2001, Rappapoort Hovav and Levin 2001) and propose a clear distinction between motion constructions and resultative constructions.[1)]

2. Motion and Path

It will be appropriate to begin my discussion with Talmy's lexicalization typology of motion events, because it has been widely accepted in the literature and deserves close scrutiny. It will be shown that Talmy's analysis is inadequate in that it ignores the difference between bounded and non-bounded paths.

2.1. Talmy's Typology

Talmy divided a motion event into five components, shown in (4).

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(4) Talmy's five components of motion events
   a. Motion
   b. Figure (something that moves)
   c. Ground (the place where motion takes place)
   d. Path (the course of the motion)
   e. Co-event (Manner or Cause)

The gist of Talmy's proposal is that languages differ in the way those components are combined into a particular lexical verb. Specifically, he gives Co-event conflation and Path conflation as two major patterns of lexicalization, as illustrated in (5) (the third type of Figure conflation is dismissed here as it is irrelevant).

(5) Talmy's "lexicalization patterns"
   a. Co-event conflation: Motion + Co-Event (=manner or cause) (Talmy 2000:27)
      English and other Indo-European languages except for Romance, Finno-Ugric, Chinese, Ojibwa
      The rock slid/rolled/bounced down the hill.
         [*slide* = Motion + sliding manner]
      The napkin blew off the table.
         [*blow* = Motion + the wind's blowing]
   b. Path conflation: Motion + Path (Talmy 2000: 49)
      Romance languages, Semitic, Japanese, Korean, Turkish, Tamil, Polynesian, Nez Perce, Caddo
      Spanish example:
      La botella entr a la cueva (flotando)
      the bottle moved-in to the cave (floating)
      'The bottle went into the cave, floating.' (Talmy 2000: 49)

According to Talmy, the Spanish sentence in (6) is ungrammatical because the motion verbs of Spanish are Path-conflating, so that

manner verbs like "float" cannot occur in motion constructions.

(6) **La botella flot a la cueva.*
the bottle floated to the cave (Jackendoff 1990: 89)
'The bottle floated into the cave.'

In Talmy's view, one language may be either the Path-conflation type or the Manner conflation type but cannot be of both types, although borrowings from other languages may often compromise this ideal picture.

Now I'd like to point out that Talmy's typology does not fare very well for Japanese. According to Talmy, Japanese belongs to the Path conflation type, and there are indeed a large number of verbs in Japanese that seem to involve Path conflation, as exemplified in (7).

(7) Japanese Path-conflating verbs
hairu 'go in', *deru* 'go out', *saru* 'go away', *agaru* 'go up', *oriru* 'go down', *susumu* 'go forward', *toozakaru* 'go far away', *tikaduku* 'go near, approach'

At the same time, however, Japanese has quite a few Manner-conflating verbs as well.

(8) Japanese manner-of-motion verbs
a. non-volitoinal: *korogaru* 'roll', suberu 'slide', *tadayou* 'float, drift', *nagareru* 'flow'
b. volitional: *hasiru* 'run', *aruku* 'walk', *oyogu* 'swim', *tobu* 'fly', *buratuku* 'stroll'

As Talmy showed for Spanish, these manner verbs in Japanese cannot occur with delimiting Path phrases like "to a place" or "into a place".

(9) Japanese manner-of-motion verbs are not compatible with delimiting phrases.

a. **Taru-ga sooko-no naka-ni korogatta.*
keg-NOM storehouse-GEN inside-to rolled
'The keg went into the storehouse, rolling.

b. **Kodomo-ga genkan-ni aruita/hatta.*
child-NOM genkan-to walked/crawled
'The child went to the front door by walking/crawling.

While the ungrammaticality of (9) is correctly predicted by Talmy's typology, however, the grammaticality of (10) below will come as a surprise.

(10) a. *Taru-ga saka-o korogatta.*
keg-NOM hill-ACC rolled
'The keg rolled down the hill.'

b. *Ken-wa yama-miti-o aruita.*
Ken-TOP mountain-trail-ACC walked
'Ken walked (along) the mountain trail.'

In (10), the manner-of-motion verbs *korogaru* 'roll' and *aruku* 'walk' comfortably sit in with "traversal paths" or "routes", which are marked by the accusative case in Japanese. One might be tempted to say that the accusative case itself has a special meaning of "traversal path", independently of the main verb used. This view cannot be upheld, however, because the traversal accusative is strictly restricted to those verbs which lexically denote motion, like *susumu* 'go forward', *noboru* 'climb, ascend', and *aruku* 'walk', and it is not compatible with simple activity verbs like *odoru* 'dance' (**yuka-o odoru* lit. 'to dance the floor') or *asobu* 'play' (**kootei-o asobu* lit. 'to play the schoolyard'). This means that the verbs used in (10) contain the notion of traversal path in addition to their characteristic manners, as represented in (11).

(11) a. *korogaru* 'roll' in (10a) = Motion + Manner ('rolling') + Path ('down')
b. *aruku* 'walk'in (10b) = Motion + Manner ('walking') + Path ('along')

Were we to follow Talmy's conflation patterns, we would have to conclude that *korogaru* 'roll' and *aruku* 'walk' in these examples conflate both Path and Manner. The simultaneous conflation of Manner and Path in a single verb should be precluded by Talmy's typology.

2.2. The Distinction Between Bounded and Non-bounded Paths

The preceding observations lead us to reject the distinction of Manner- and Path-conflation as a critical parameter to distinguish English from Japanese or Spanish. What is crucial, rather, is the distinction between Goal (and Source) phrases as in (9) and Route phrases as in (10). It will be shown that Route phrases are congenial to manner verbs in both English and Japanese, whereas Goal phrases are accepted only in English.

Since motion is ubiquitous in human activities, legions of analyses have been proposed concerning the semantic structure of motion verbs and the related path phrases. From a physical point of view, one's travel from home to school may be represented as a homogeneous structure, as graphically shown in (13), where the course from home to school is analyzed as a continuous scale composed of an indefinite number of locations starting from the home and terminating at the school, and the moving object is conceived of as changing its position successively along this course in proportion to the progress of time.

(12) Homogeneous motion structure

progress of time : t_0, t_1, t_2, ---------- > t_n
b b b b
change of place : p_1, p_2, p_3, ---------- > p_n
(home) (school)

In view of the fact that a variety of path phrases are indiscriminately combined with manner-of-motion verbs, it is quite reasonable that Jackendoff (1978, 1983) proposed to subsume all kinds of locational preposition – not only Source and Goal but also Route and Direction – under the broad rubric of "Path", as shown in (13).

(13)

$$[\text{PATH}] \rightarrow \left[\text{Path} \left\{ \begin{matrix} \text{TO} \\ \text{FROM} \\ \text{TOWARD} \\ \text{AWAY - FROM} \\ \text{VIA} \end{matrix} \right\} \left(\left\{ \begin{matrix} [\text{Thing } y] \\ [\text{Place } y] \end{matrix} \right\} \right) \right]$$

(Jackendoff 1983: 166)

Appealing as this analysis may be, it encounters problems when applied to Japanese. For Japanese, it is necessary to split up a Path into two groups, bounded and non-bounded, as in (14).

(14) a. Bounded paths: the origin and terminus of travel
Source (FROM), Goal (TO)
b. Non-bounded paths: the course between Source and Goal, and notions related to it
Route (VIA, such as *along, through, across, by,*), Direction (TOWARD), Extent (UP TO, AS FAR AS), Distance (measure phrases)

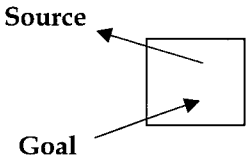
Bounded paths, namely the Source and Goal, bear a distinctive

status because aspectually, they induce telic events. In contrast, non-bounded paths are primarily concerned with atelic or durative processes. Here I employ the term "non-bounded" instead of "unbounded", because a Route is not inherently "boundless" but is only indeterminate or underspecified as to boundedness. Witness the sentences in (15), which are susceptible to both durative adverbs and time-delimiting adverbs.

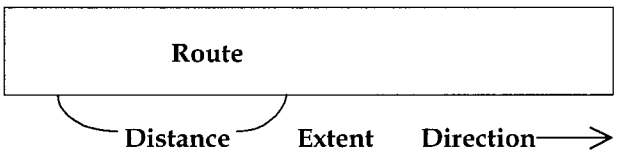
(15) a. *The endless procession walked by the church (in two hours/for many hours).* (Cf. Declerck 1979: 768)
b. *Mary walked the Appalachian Trail (in three months/for three months).* (Tenny 1995: 55)

In addition to the Route, I regard such notions as Direction, Distance, and Extent, as being aspectually non-bounded, because they are all defined in relation to the Route, as graphically represented below:

(16) Motion structure
a. Bounded paths (Aske's (1989) "telic path phrases")



b. Non-bounded paths (Aske's "locative path phrases")



My distinction of two types of path echoes a similar proposal by Aske (1989) based on Spanish data and so is expected to have a universal applicability (see also Slobin (1996) and Slobin and Hooiting

(1994)).

Here it is worthy of note that Distance and Extent are deemed non-bounded in lexical aspect. This is suggested by the fact that in Danish, motion verbs followed by a distance measure select the "have" (atelic) auxiliary rather than "be" (telic) in the perfect.

(17) a. *Han har get 2 km.* (atelic)
he has walked 2km
b. *Han er get hjem.* (telic)
he is walked home (Danish: Pedersen 1999)

Although Distance and Extent phrases can participate in the temporal delimitation of motion events, as in *John walked up to the cave/five kilometers in an hour*, I assume that the telicity here is induced as a grammatical aspect by means of a calculation based on the correspondence relation between the amount of the path or incremental theme consumed and the time elapsed during the consumption (see Krifka (1992, 1998) and Verkuyl and Zwarts (1992) for mathematical formalizations of this mechanism).

Now, Japanese verbs of motion are basically categorized into two types: one selecting a bounded path, and the other selecting a non-bounded path. The verbs that select bounded paths are further divided into those that focus on a Source and those that focus on a Goal.

(18) a. Verbs that select bounded paths.
i. Goal-oriented: *tuku* 'arrive', *tootyaku-suru* 'arrive', *tyakuriku-suru* 'land'
ii. Source-oriented: *saru* 'depart', *hanareru* 'leave'
b. Verbs that select non-bounded paths.
i. Manner-of-motion verbs: *hasiru* 'run', *aruku* 'walk', *oyogu* 'swim', *korogaku* 'roll', *suberu* 'slide', *tadayou* 'float, drift'
ii. Verbs with unspecified directions: *samayou* 'wander',

urotuku 'prowl about'

Needless to say, the Goal- or Source-oriented verbs can freely take a Goal or Source phrase because of their lexical property. What concerns us is the group of verbs in (18b), namely, the verbs that select only a Route without specifying a Goal in themselves.

When combined with manner-of-motion verbs, Source and Goal phrases serve to delimit the motion event. As pointed out at the outset, those bounded paths are incompatible with the manner-of-motion verbs in Japanese and other languages.

(19) English: *I walked to the library.*
Spanish: ?* *Ayer camin a la biblioteca.*
yesterday I-walked to the library (Aske 1989: 14)
Japanese: ?* *Watasi-wa tosyokan-ni aruita.*
I-TOP library-to walked
'I went to the library on foot.'
Korean: **John-un puek-an-ey kele-ss-ta.*
J.-TOP kitchen-into walked
(Alan Hyun-Oak Kim, p.c.)

(The Japanese example in (19b) may sound acceptable to some speakers, but even so, the particle *ni* crucially does not imply an actual arrival at the destination but only a continuous motion toward it, as shown by the fact that time-delimiting adverbs like "in 30 minutes" do not fit in.)

In contradistinction to these bounded path phrases, unbounded path phrases like a Route, Direction, Distance, or Extent are entirely permissible with manner-of-motion verbs not only in English but also in Japanese and Spanish, as demonstrated in (20) (Kageyama and Yumoto 1997).

(20) a. Route

English: *John walked through the tunnelfor two hours.*
Japanese: *John-wa tonneru-no-naka-o ni-zikan aruita.*
J.-TOP tunnel-GEN-inside-ACC 2-hours walked
Spanish: *Juan camin por el tunel dos horas.*
Juan walked through the tunnel two hours
(Aske 1989: 7)

b. Direction
English: *They ran toward the cave.*
Japanese: *Karera-wa dookutu-no-hoo-e hasitta.*
they-TOP cave-GEN-direction-toward ran
Spanish: *Corrieron hacia adentro de la cueva.*
they-ran towards inside of the cave (Aske 1989: 5)

c. Distance
English: *John walked five kilometers.*
Japanese: *John-wa go-kiro aruita.*
J.-TOP five-kilometers walked

d. Extent
English: *John walked as far as the cave.*
Japanese: *John-wa dookutu-made aruita.*
J.-TOP cave-up.to walked
Spanish: *Juan camin hasta la cueva.*
J. walked as.far.as the cave

In (20d), I identify the Japanese particle *made* 'up to, as far as' as the marker of an Extent, thus differing from Tsujimura (1994), who treat it as a Goal marker. There are various reasons for regarding *made*-phrases as non-bounded, one of which is that sentences involving them can accommodate not only time-delimiting adverbials like "in an hour" but time-duration adverbials like "for an hour" as well.

To sum up so far, the demarcation of bounded and non-bounded paths, which is neutralized in English, is strictly observed in Japanese, Spanish, and other languages. For those languages, manner-of-motion

verbs reject Source and Goal phrases but are fully congruous with non-bounded path expressions.

3. Transition from Motion to Static Location

Given that a Route and a Goal/Source belong to distinct domains of motion structure, each representing a separate eventuality, why is it that English is able to combine them freely into a single accomplishment eventuality by simply appending a Goal/Source phrase to a motion verb? The answer to this question must simultaneously answer the question of why the same process is not operative in Japanese (that is, without resorting to compound verbs: see section 4).

According to Tenny's (1995: 63) speculation introduced at the outset, the native speakers of English have the world knowledge that translative motion will end at some place. However, Tenny ends up throwing the problem up in the air when she cautions that this knowledge may not be universal. In this section, I will argue that this privilege of English speakers is eventually attributed to the semantic structure of the preposition *to*.

The solution to the problem will be found in explicating how the Route is connected to the end location. An obvious condition is that the endpoint of the Route is indexically identical to the ultimate Goal, as shown in (21).

(21) DURATIVE MOTION — END LOCATION

[[ ]$_x$ MOVE [Route p_1, p_2,... p_z]] [[ ]$_0$ BE AT-[p_z]]

extent of Route — ultimate goal

(21) shows that the subject (x) moves along a Route from the origin, p_1, up to the last point on the Route, p_z ("Extent"), this p_z is identified with the ultimate goal of the travel. I suppose this conceptualization

of translative motion corresponds to what Tenny (1995) referred to as the English speakers' knowledge of the world. The identification of the extent with the ultimate goal is certainly a necessary condition but not a sufficient condition, however, because languages like Japanese, Korean, and Spanish do not permit a free addition of a Goal phrase even if the identity condition in (21) is met.

From the linguistic point of view, it must be said that the motion structure is not homogeneous as suggested in (12) above but consists of two disparate, heterogeneous domains, one representing a durative process along a Route and the other representing an achievement event involving the arrival at a Goal or departure from a Source. Although many verbs of inherently directed motion, such as "go" and "return", cover both domains in their lexical meaning, manner-of-motion verbs are basically limited to the process domain. For these verbs, then, it is necessary to invoke some measures to bridge the two domains. A straightforward way to achieve this purpose is to utilize what Talmy (1985) calls "Path satellites" in Germanic and other languages. Danish is particularly instructive because it systematically distinguishes three kinds of path adverbials, as illustrated in (22) (Harder et al. 1996, Pedersen 1999).

(22)

motion along a Route	**transition** →	(static) end-location
udad '(move) outward'	*ud* '(go) out'	*ude* '(be) out'
ndad 'inward'	*ind* '(go) in'	*inde* '(be) in'
opad 'upward'	*op* '(go) up'	*oppe* '(be) up'
nedad 'downward'	*ned* '(go) down'	*nede* '(be) down'

(Dutch examples from Harder et al. 1996)

Of prime importance is the set of "transitional adverbials" like *ud* '(go) out', shown in the middle of each triplet of motional, transitional, and static adverbials.

The use of transitional satellites (adverbials or verbal prefixes) is

further illustrated in (23) with examples from Danish, Dutch, German, and Russian.

(23) a. Danish: *De flyttede ud til Victor.*
they moved out:TRANSIT to Victor
'They moved out to Victor's place.'
(Harder et al. 1996: 189)

b. Dutch: *Daniel fietst naar school toe.*
D. bikes to school to:TRANSIT
'Daniel bikes to school.' (Van Hout 1998: 59)

c. German: *Er ging ins Zimmer her-ein.*
he went into room here-into:TRANSIT
'He went into the room.' (Harder et al. 1996: 168)

d. Russian: *Ya v-bez(al v dom.*
I in:TRANSIT-ran into house
'I ran into the house.' (Talmy 1985: 105)

The Path satellites, underlined in the above examples, serve to mediate between the motion and the attainment of the goal.

It thus appears that the availability of transitional adverbs in a given language determines the possibility of whether or not manner-of-motion verbs can directly take a Goal phrase in that language. However, although the transitional adverbs are largely obligatory for Danish, Dutch, and Russian, English does not require them at least on the surface. Children learning English therefore cannot make use of transitional adverbials as a trigger to set the parameter of their language as a telic language. Without recourse to transitional adverbials, how can we determine that English is a telic language while Japanese, Spanish, and other languages are not?

I propose that a simple answer is found in the semantics of the preposition *to*, which is essentially a marker of dynamic motion. Thus, even without utilizing special transitional adverbials, English is able to represent the transition by means of *to*, which is also used in the

expression of Extent (*up to*) and of Direction (*toward*). This situation in English presents a marked contrast to Japanese, where the "dative" particle *ni* is essentially a marker of static location, typically used as a locative marker in existential sentences, although it can be used with verbs of inherently directed motion like *iku* 'go' and *kaeru* 'return' as well. Thus, the literal translation of *Tokyo-ni iku* 'go to Tokyo' should be *go at Tokyo*. This difference between *to* and *ni* is represented in (24).

(24)

	non-bounded domain	**bounded domain**	
	DIRECTION/EXTENT	TRANSITION	LOCATION
English	*X goes up to/toward Y*	*X goes to Y*	*X is at Y*
Japanese	*X-ga Y-made/e iku*	*X-ga Y-ni iku*	*X-ga Y-ni iru*

In (24), there is a boundary between Direction and Extent (on a Route), on the one hand, and Transition and Location, on the other, and this boundary is crossed by the dynamic preposition *to* in English, because it has a dynamic, transitional meaning in itself. If we represent the notion of "transition" with the semantic predicate BECOME (meaning 'inchoation'), we can decompose the meanings of the prepositions *to*, *onto*, and *into* as follows:

(25) *to* Y: BECOME AT-Y
onto Y: BECOME AT-SURFACE-of Y
into Y: BECOME AT-INSIDE-of Y

In contrast, the Japanese particle *ni* has no meaning of transition per se, designating only a static location. It is true that this particle is employed for such verbs of directed motion as *iku* 'go', *kaeru* 'return', *agaru* 'ascend', and *hairu* 'enter'.

(26) *John-wa New York-ni itta/kaetta.*
J.-TOP N.Y.-at went/returned
'John went/returned to New York.'

The meaning of transition, however, is already contained in the verbs themselves and therefore cannot be ascribed to the locative particle *ni*.

Given the static nature of *ni*, then, the transition from a Route to a Goal with manner-of-motion verbs (which are indeterminate as to the ultimate goal) is left unencoded in Japanese, and as a consequence the two domains cannot be bridged.

(27)

UNBOUNDED MOTION	TRANSITION	GOAL
X-ga aruku/korogaru	~~X~~ →	*Y-ni*
NOM walk/roll		Y-at
X MOVE [Route]		AT-Y

The same situation holds for Korean, Spanish, and French as well. The figure in (28) shows that those languages can embody transition only by taking advantage of the static locative markers used with directed motion verbs like "go".

(28) "Non-bounded languages" have no special marker for transition.

	DIRECTION	EXTENT	TRANSITION	LOCATION
Japanese:	*e*	*made*	*(ni)*	***ni***
Korean:	*eulo*	*ggaji*	*(ey)*	***eye***
Spanish:	*hacia*	*hasta*	*(a)*	***a***
French:	*vers*	*jusque*	*(à)*	***à***

On the other hand, English and other Germanic languages are possessed of specific transition markers which are identical in form to the prepositions for Direction or Extent.

(29) "Bounded languages" have prepositions indicating dynamic transition.

	DIRECTION	EXTENT	TRANSITION	LOCATION
English:	*toward*	*up* ***to***	***to***	*at*
Gerrman:	*auf...**zu***	*bis **zu***	***zu***	*an, zu*
Danish:	*hen imod*	*hen **til***	***til***	*ved*
Dutch:	***naar**...toe*	*tot, tot aan*	***naar***	*aan*

The generalization here is evident: the different organizations of the transition markers are held responsible for the cross-linguistic variation on the availability of the delimited motion construction with manner-of-motion verbs.

The validity of my claim will be reinforced by the fact that the preposition *to* in the combinations of *into* and *onto*, though optional for directed motion verbs (30a, 31a), is obligatory for manner-of-motion verbs which do not have the meaning of transition inherently (30b, 31b).

(30) a. *She parked the car in the drive and went {into/in} the house.*
b. *She parked the car in the drive and walked {into/#in} the house.*

(31) a. *The ball went {onto/on} the green.*
b. *The ball rolled {onto/#on} the green.*

The symbol "#"in (30b) and (31b) indicates that the sentences, albeit acceptable in the purely locative sense, cannot be interpreted in the goal readings at issue. (An exception is the verb *jump*, which allows the simple preposition *on* as well as the complex one *onto* in *He jumped on(to) the table.* It appears that *jump* contains the meaning of transition.)

In a nutshell, if a language has an explicit marker of transition, as in English, Danish, and other langauges, it can freely combine a Goal or Source phrase with manner-of-motion verbs to make an accomplishment event. On the other hand, if a language has only a

static location marker, the motion domain and the location domain must remain unbridged. What Tenny called the knowledge of the world is now identified as the linguistic knowledge that is traced back to the semantic structure of the tiny lexical item *to*.

Our analysis receives support from those languages that have serial verb constructions. In these languages, the transition must be marked by an overt morpheme when an actual arrival is meant (Slobin and Hoiting 1994).

(32) Motion verbs in serial verb constructions

a. *MAN HOUSE RUN APPROACH ENTER.* (Sign Language of the Netherlands)
'The man ran into the house.'(ENTER explicitly marks transition.)

b. *Lan chay vào vu n.* (Vietnamese, Carol Lord 1993)
Lan run enter garden
'Lan ran into the garden.'

c. *Eri weni-ni ama suo-mi.* (Ijo, Mark Sebba 1987)
he walk-linker town enter-simple.past
'He walked into a town.'

(a, b, c from Slobin and Hoiting 1994: 492)

Without the second verb "enter", the sentence could not mean that the subject really got into the place.

4. Caused Motion Construction

In the preceding two sections, we elucidated the importance of the distinction between bounded paths (Goal and Source) and non-bounded paths (Route and related notions) in intransitive motion verbs. We now turn attention to transitive verbs of motion, which will yield the same result as the intransitive motion verbs.

Clear examples come from verbs like *push, kick, thrust,* and *pull,*

which share the meaning that an object changes its position because of the physical force exerted by the subject in various manners like "pushing" or "kicking".

(33) Verbs of action and unbounded motion: *push, kick, thrust, pull*

ACTION NON-BOUNDED MOTION

[[ ]$_x$ ACT ON-[ ]$_y$] CAUSE [[ ]$_y$ MOVE [$_{Route}$ p_1, p_2, ...]]

The existence of motion structure is indicated by the occurrence of Route and distance phrases as shown in (34).

(34) a. *Beckham kicked the ball 30 meters into the goal.*
b. *Sue pushed the shopping cart along the street to the supermarket.*
c. *Sue pushed the shopping cart three blocks to the supermarket.*

Just as intransitive verbs of manner-of-motion are fully compatible with non-bounded paths like a Route, a Direction, or a Distance in both English and Japanese, verbs of physical impact like *kick* and *push* are universally receptive to these phrases. Observe the parallel sentences in (35) and (36) involving direction and distance phrases.

(35) Direction
a. *She kicked her sandal towards the door.*
a′. *Kanozyo-wa sandaru-o doa-no-hoo- ketta.*
she-TOP sandal-ACC door-GEN-direction-toward kicked
b. *The policemen pushed the crowd backwards.*
b′. *Keikan-wa gunsyuu-o usiro-e osita.*
policeman-TOP crowd-ACC back-toward pushed

(36) Distance
a. *Beckham kicked the ball 30 meters.*
a′. *Beckham-wa booru-o 30 meetoru ketta.*
B.-TOP ball-ACC 30 meters kicked

b. *Ken pushed the shopping cart three blocks.*
b'. *Ken-wa kaimono-yoo-kaato-o san-burokku osita.*
K.-TOP shopping-for-cart-ACC three blocks pushed

However, when these verbs are followed by locational end-points, the same discrepancy as with manner-of-motion verbs emerges, as shown in (37).

(37) a. *Ken pushed the shopping cart to the supermarket.*
a'. **Ken-wa syoppingu-kaato-o suupaa-ni osita.*
K.TOP shopping-cart-ACC supermarket-to pushed
b. Jim pushed the wheelchair out of the sick room.
b'. *#Jim-wa kurumaisu-o byoositu-kara osita.*
J.-TOP wheelchair-ACC sickroom-from pushed
(This sentence does not mean 'Jim went out of the sickroom by pushing the wheelchair', but only something like 'Jim was in the sickroom and tried to push the wheelchair outside the room by extending his arms to it.')
c. *Beckham kicked the ball into the goal.*
c'. ?**Beckham-wa booru-o gooru-ni ketta.*
B.-TOP ball-ACC goal-DAT kicked

Addition of end-points is permitted in English, but not in Japanese.

Again, the delimiting constructions like (37a, b, c) is made possible by the use of the dynamic preposition *to*. Notice that *to* cannot be replaced by the static *in* or *on* in (38), while transitive verbs of inherently directed motion can use either the dynamic *to* (and its kin) or the static *on* and *in* in (39).

(38) a. *#Beckham kicked the ball in the goal.* (Does not mean 'He shot the goal')
b. *John pushed/dragged the box {onto/*on} the table.*
(b from Snyder (1995: 462))

(39) a. *He put the money {in/into} his pocket.*
b. *She sprayed paint {on/onto} the kitchen wall.*

Now consider verbs like *rub, tap,* and *tickle.* These verbs share the meaning of 'applying force to the object' with *kick* and *push,* but unlike *kick* verbs, *rub* verbs do not involve motion or a Route in themselves.

(40) Transitive verbs of surface contact (cf. Rappaport Hovav & Levin 1998)
squeeze, rub, tap, tickle: [ ]$_x$ ACT<Manner> ON-[ ]$_y$

The nonexistence of a Route is shown by the impossibility of adding a measure phrase like *an inch* in (41).

(41) a. *Sue rubbed cold cream (*an inch) onto her skin.*
[[ ]$_x$ ACT ON-[ ]$_y$] CAUSE [BECOME [[ ]$_y$ BE AT-ON-[ ]$_z$]]
b. *He shook fruit (*three meters) from the tree.*
c. *She tickled the child (*50 centimeters) off the chair.*

When accompanied by delimiting prepositional phrases, then, these verbs denote an instantaneous change (without a motional path). Because of this, caused motion sentences that involve no Route will be better categorized as "resultative constructions".

As expected, Japanese does not allow delimiting phrases to be attached to *kosuru* 'rub', *tataku* 'tap', or *kusuguru* 'tickle'.

(42) a. **Mary-wa koorudo-kuriimu-o hada-ni kosutta.*
(OK if *kosuri-komu* 'rub-put.in')
M.-TOP cold-cream-ACC skin-at rubbed
'Mary rubbed cold cream onto her skin.'
b. **Kare-wa ki-kara mi-o yusutta.*
(OK if *yuri-otosu* 'shake-let.fall')

he-TOP tree-from fruit-ACC shook
'He shook fruit from the tree.'

This section has observed that transitive verbs of caused motion exhibit parallel behavior to intransitive manner-of-motion verbs with respect to the distinction of bounded and non-bounded path phrases. This parallelism has non-trivial implications for the theoretical analysis of motion constructions and resultative constructions, as discussed in the next section.

5. On the Distinction Between Motion Constructions and Resultative Constructions

The availability of Route and other non-bounded path phrases with *kick* and *push*, pointed out above in (35)-(36), will be highly instrumental in separating motion constructions from resultative constructions. In a recent paper on the English resultative constructions, Rappaport Hovav and Levin (2001) regard delimited motion constructions as a kind of resultative constructions and argue that only those sentences with an object NP followed by a resultative XP truly count as resultative constructions. By this criterion, both intransitive resultative constructions with "bare XP" resultatives like *The vase broke to pieces* and intransitive motion sentences like *She danced out of the room* are excluded from resultative constructions. Their proposed distinction based on whether a resultative phrase is bare or is accompanied by an object NP, however, fails in two respects.

First, Rappaport Hovav and Levin's chief motivation for their distinction is that the object plus resultative pattern involves two events whereas the bare resultative pattern has a single event. According to this diagnosis, delimited motion sentences like *He ran to the station* consist of only one event, because there is no object NP. However, comparison of such English sentences with their Japanese

counterparts involving compound verbs will reveal that the English motion sentences comprise two events, namely, the event of the subject's continuous motion along a Route and the event of the subject's getting to the destination. To see this, it is necessary to examine Japanese sentences involving compound verbs first.

(43) a. *Ken-wa oodoori-o* [Route] *(500 meetoru) hasitta.*
K.-TOP main-street-ACC (500 meters) ran
'Ken ran (500 meters) down the main street.'
b. *Ken-wa eki-ni* [Goal] *tuita.*
K.-TOP station-at arrived
'Ken got to the station.'

The sentences in (43a) and (43b) are predicated by single verbs, *hasiru* 'run' and *tuku* 'arrive'. Following the normal patterns, the manner-of-motion verb "run" takes a Route phrase in (43a), and the directed motion verb "arrive" takes a Goal phrase in (43b). Now what happens if the two verbs are compounded into *hasiri-tuku* lit. 'run-arrive' or 'get there by running'?

As a "verb-framing" language (Talmy 2000), Japanese has the morphological means of verb compounding for the representation of manner and goal. However, the meaning denoted by comopund verbs is not a simple concatenation of two events. The acceptable argument realization is represented in (44a), where only a Goal phrase shows up. This pattern is demanded by the morphological "Right-hand Head Rule", which says that only the head of the compound verb—namely, "arrive" in the case of "run-arrive"—can project its argument structure, which is Agent and Goal.

(44) a. *Ken-wa eki-ni* [Goal] *hasiri-tuita.*
K.-TOP station-at run-arrived
'Ken got to the station by running.'
b. **Ken-wa oodoori-o* [Route] *eki-ni* [Goal] *hasiri-tuita.*

K.-TOP main.street-ACC station-at run-arrived
'Ken ran down the main street to the station.'

c. **Ken-wa 500 meetoru* [Distance] *eki-ni* [Goal] *hasiri-tuita.*
K.-TOP 500 meters station-at run-arrived
'Ken ran 500 meters and got to the station.'

d. **Ken-wa oodoori-o* [Route] / *500 meetoru* [Distance] *tuita.*
K.-TOP main.street-ACC / 500 meters arrived
lit. 'Ken arrived 2 kilometers/along the main street.'

On the other hand, the non-head of the compound, i.e. "run", cannot project its Route argument, so that sentence (44b) involving a Route in addition to a Goal is judged ungrammatical. By the same token, a measure phrase is rejected by the compound verb in (44c). Notice that the verb "arrive" itself can take neither a Route phrase nor a Distance phrase, as demonstrated by (44d). All these facts point to a single principle: Japanese compound verbs denote a single event. Although a compound verb is composed of two members, the first member is a mere modifier of the head.[2)]

Now, provided that the Japanese sentences involving lexical compound verbs like (44a) constitute a single event, the corresponding English motion constructions with locational delimiters must be considered to contain two events, contrary to Rappaport Hovav and Levin (2001). The reason is simple: English manner verbs can overtly realize a non-bounded path phrase and a goal phrase at the same time, as shown in (45).

(45) a. *Ken ran down the main street to the station.*

2) Compound verbs like *zisyo-o moti-aruku* 'walk while carrying a dictionary in hand' and *paatii-ni tabemono-o moti-yoru* 'gather at a party while bringing some food' constitute exceptions to the Right-hand Head Rule. These verbs denote two concomitant events which take place simultaneously and hence can project arguments not only from the head but also from the non-head. For the details of the morphology and semantics of Japanese compound verbs, the reader is referred to Kageyama (1989, 1993, 1999) and Matsumoto (1996).

process achievement

b. *Ken ran 500 meters to the station.*

In (45), *to the station* represents an achievement, whereas *down the main street* and *500 meters* represent a process. Put together, these two events make up an accomplishment eventuality, as has been standardly assumed since Vendler (1967). (See Alsina (1999) for other kinds of arguments in favor of the complex event structure for motion verbs.)

The primary motivation underlying Rappaport Hovav and Levin's (2001) discussion is that in the bare XP pattern like *The water froze solid,* the process denoted by the verb and the change denoted by the resultative predicate unfold simultaneously rather than sequentially. This may be so in the case of change of state verbs like *freeze,* because they inherently have an end-point (resultant state) in their lexical meaning. In the case of motion verbs, however, Ken's running 500 meters and his arriving at the station must necessarily take place sequentially in that order.

Even more importantly, exactly the same behavior of Route and Distance phrases as with intransitive motion verbs can be observed with transitive verbs of caused motion like *push* and *kick.* Compare the sets of English and Japanese sentences in (46).

(46) a. *Beckham kicked the ball 30 meters into the goal.*

a'. *Beckham-wa booru-o (*30 meetoru) gooru-ni keri-konda.*
B.-TOP ball-ACC (*30 meters) goal-at kick-put.in

b. *The batter hit the ball 120 meters into the bleachers.*

b'.*Battaa-wa booru-o (*120 meetoru) gaiyaseki-ni uti-konda.*
batter-TOP ball-o (*120 meters) bleachers-at hit-put.in

This parallelism between transitive and intransitive verbs of motion undermines Rappaport Hovav and Levin's argument that the bare XP pattern should be discriminated from the object XP pattern.

Another important claim of Rappaport Hovav and Levin (2001) is that the Direct Object Restriction (DOR: Levin and Rappaport Hovav 1995) on resultative predicates, which has been widely accepted since Simpson (1983), is empirically wrong. Their motivation for this claim derives from sentences like (47), first pointed out by Wechsler (1997).

(47) a. *The wise men followed the star out of Bethlehem.*
b. *The sailor managed to catch a breeze and ride it clear of the rocks.*
c. *He followed Lassie free of his captors.*

Wechsler, as well as Rappaport Hovav and Levin, who endorse his examples, presumes that the Source phrases in these examples refer directly to the locations of the subject. However, if we follow our proposed criterion based on the presence or absence of non-bounded paths, these examples should be diagnosed as motion constructions that happen to have bounded paths, rather than genuine resultative constructions (the adjectives *clear* and *free* do not represent "states" but "positions" meaning 'away from'). The apparently problematic examples that Wechsler adduced are actually no different from *He ran to the station* or *They danced out of the room.* This is so because in the case of true resultative constructions, resultative predicates cannot be replaced by non-bounded phrases like a Route, Distance, or Direction.

(48) a. *He drank himself {to/*toward} death.*
b. *She sang the baby {to/*toward/*as far as} sleep.*
b. **He sneezed the tissue ten inches or so off the table.*

On the other hand, the sentences predicated by *follow the star* and *ride the breeze* are entirely compatible with non-bounded path phrases.

(49) a. *They followed the star {northward / several miles}.*
b. *He rode the bike {along the river / several miles}.*

The conclusion is thus inescapable that Wechsler's putative counterexamples in (47) are nothing but motion verbs followed by bounded path phrases.

Wechsler's claim that his examples nullify the Direct Object Restriction cannot be sustained, either, because the direct objects in his examples, albeit invisible in syntax, are represented as such at the level of Conceptual Structure.

(50) a. *They followed the star out of Bethlehem*:
[They$_i$ ACT] CAUSE [[they$_i$ MOVE AFTER-the star [$_{Route}$]] BECOME [[they$_i$ BE NOT-AT-IN-Bethlehem]]

b. *The sailor rode the breeze clear of the rocks*:
[He$_i$ ACT ON-the breeze$_j$] CAUSE [[he$_i$ MOVE [$_{Route}$]] BECOME [he$_i$ and the breeze$_j$ BE AT-[clear of the rocks]]]

In either case, the subject of MOVE at Conceptual Structure, which is coreferential with the subject of ACT, corresponds to the internal argument in syntactic structure, and the Goal or Source phrase refers to the resultant location of the entity that functions as the subject of BE. There is thus no violation of the DOR, if we assume that the DOR is not a condition on syntactic structure but on Conceptual Structure.

Beside Wechsler's examples, another similar case can be made with verbs that optionally take reflexive objects, which may not be realized on the surface but are nonetheless present at Conceptual Structure. This point is illustrated by the sentences in (51) involving *strip* and *shave*.

(51) a. *He stripped (himself) naked and went to bed.*

b. *He shaved (himself) clean and went out.*

In (51), the resultatives *naked* and *clean* are predicated of the reflexive object *himself*, which may be omitted on the surface but is postulated at the level of Conceptual Structure. Thus, the reformulation of the

DOR as a condition on Conceptual Structure will invalidate Wechsler's arguments against the DOR as a syntactic condition. Under this reformulation, the DOR need not be stipulated as a special condition any longer but follows automatically from the organization of Conceptual Structure, where the resultative predication is represented as an achievement event, as shown in (52).

(52) . . . BECOME [[ ]$_x$ BE AT-[ ]$_y$]
(He stripped) *himself* *naked*
(She sang) *the baby* *to sleep*

In (52), the resultative phrases are represented as the complement of BE, i.e. "AT-[ ]", and are predicated of the subject of BE (cf. Kageyama 1996).

6. Conclusion

In the first half of this paper, I discussed the cross-linguistic variation on the conjoinability of manner-of-motion verbs and locational delimiters, and revealed that its nature resides in the expression of transition from a Route to a resultant location. English and other Germanic languages which are possessed of linguistic means to manifest the transition can freely append Goal or Source phrases to manner verbs, whereas Japanese, Korean, Spanish, and other languages which lack the transition marker do not allow the combinations of manner verbs and delimiting phrases although they are entirely susceptible to non-bounded path phrases. The knowledge of the world that Tenny (1995) referred to is reduced to a linguistic knowledge about the preposition *to*.

In the second half of the paper, by comparing English as a satellite-framing language with Japanese as a verb-framing language, I argued that the English motion+goal construction involves two events while Japanese compound verbs express a single event. This

conclusion militates against Rappaport Hovav and Levin's proposal to separate out resultative constructions into the object XP pattern and the bare XP pattern. While these scholars treat both motion constructions and resultative constructions under the same heading, I have proposed to tease them apart on the basis of the presence or absence of non-bounded path phrases.

Throughout the paper, I hope to have shown the validity of a cross-linguistic approach to English linguistics. Careful comparison of English with other languages has a potential for providing us with new insights into the nature of recalcitrant problems that would remain unsolved or misunderstood, were attention narrowly limited to English alone.

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