

Motion and Path in the Acquisition of Japanese Intransitive Verbs

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1. Introduction

It has been observed that in Japanese, a motion event expressed in a verb can conflate manner or path, as in (1-2), respectively (Talmy 1985, Yoneyama 1986, Tsujimura 1994, 1996, Kageyama 1996, Matsumoto 1996).

- (1) motion event with conflation of manner:
Taroo-ga kooen-de aruita.
Taro-Nom park-at walked
'Taro walked at the park.'
- (2) motion event with conflation of path:
Taroo-ga nikai-e agatta.
Taro-Nom upstairs-to went up
'Taro went upstairs.'

On the other hand, conflation of both manner and path is not allowed, as in (3); instead, other grammatical mechanisms such as periphrastic expressions and compounding are invoked for simultaneous realization of these two semantic components. This is shown in (4-5).

- (3) Conflation of manner and path:
*Taroo-ga kooen-e aruita.
Taro-Nom park-to walked
'Taro walked to the park.'
- (4) Periphrastic expression with gerund:
Taroo-ga aruite kooen-e itta.
Taro-Nom walking park-towent
'Taro went to the park by walking.'
- (5) Compounding:
Taroo-ga nikai-ni kake-agatta.
Taro-Nom upstairs-to run-went up
'Taro ran up to the upstairs.'

In (3) the manner of motion verb *aruita* 'walked' cannot cooccur with a path expression, *kooen-e* 'to the park'. In order to make it possible to express manner and path together, in (4), the gerundive form of the manner verb *aruku* 'walk', *aruite*, is used with the deictic verb *itta* 'went' along with the path expression *kooen-e* 'to the park'; otherwise, as in (5), a compound that consists of a manner verb, *kakeru* 'run', and a path verb, *agatta* 'went up', is called for.

Using another kind of terminology that characterizes typological differences in incorporation patterns, Japanese falls under the class of verb-framing languages in the sense of Talmy (1991, 2000): Japanese is one of the languages including Spanish and

Turkish in which the semantic component of path is incorporated in a single verb, such as *hairu* ‘enter’, *deru* ‘exit’, and *agaru* ‘ascend’; by contrast, English, along with Russian and Chinese, has been classified as a satellite-framing language, in which path of motion is expressed by particles like *into* and *out of* as in *walk into* and *run out of* (Ozcaliskan & Slobin 1999, 2000).

This paper reports young Japanese children’s verb acquisition patterns focusing on the semantic nature of an initial group of verbs that they seem to acquire. I wish to investigate young children’s verb learning particularly in the context of “conceptual packaging” of Slobin (2001) or “packaging problem” of Tomasello (1995). By “packaging problem,” Tomasello (1995) means “the problem of how the child knows the aspect of the action to which the adult is referring” (p.138). The central question is, thus, how the child extracts the concept from a word to which it refers. One of the issues revolving around the question of conceptual packaging is its rich crosslinguistic variation and the role that linguistic principles play in conceptual development, as has been extensively discussed in Bowerman (1994, 1996a, b), Bowerman and Choi (2001), Brown (2001), Choi (1997), Choi and Bowerman (1991), de Leon (2001), and Slobin (1991), among many more (cf. see also Imai and Gentner (1997) and Yoshida and Smith (2000) for conceptualization of objects). In this paper I will demonstrate that while verbs with conflation of path and with conflation of manner both enter into Japanese children’s early vocabulary, motion verbs that conflate path account for a significant portion of it, and that in case path appears with manner, children can readily express manner periphrastically, external to a motion verb that conflates path. I will further attribute the pervasiveness of path conflation to a language-specific principle that focuses on the result, rather than the process, of an event (Slobin 1991), lending support to the claim that linguistic principles can promote conceptual development (Bowerman 1996a, b, Choi 1997). In our discussion of “path”, I will adopt Jackendoff’s (1983:165) characterization of the term, as is given in (6).

- (6) a. bounded paths: the reference object or place is an endpoint of the path
- b. directions: the reference object or place does not fall on the path, but would if the path were extended some unspecified distance
- c. routes: the reference object or place is related to some point in the interior of the path.

2. Motion Verbs and Path

I have examined two Japanese mono-lingual children’s corpora recorded by Miyata (1992, 1993, 1995) (MacWhinney 1995, Oshima-Takane & MacWhinney 1998). The children are Aki and Ryo, both males. The observation period has been divided into five developmental stages, as is described in (7).

(7)	Aki	Ryo
	I 1;6-1;11	1;9-1;11
	II 2;0-2;2	2;0-2;2
	III 2;3-2;5	2;3-2;5
	IV 2;6-2;8	2;6-2;8
	V 2;9-3;0	2;9-3;0

I will demonstrate the salience of path in these children’s early vocabulary with respect to four areas: (i) morphologically marked intransitive-transitive verb pairs; (ii) morphologically unmarked intransitive verbs; (iii) path conflation and expression of manner; and (iv) verbal nouns.

2.1 Morphologically Marked Intransitive-Transitive Verb Pairs

Japanese employs a number of morphologically related intransitive-transitive verb pairs that resemble English verbs that participate in the causative alternation such as *break*, *open*, and *melt*. Unlike English, however, verb pairs in Japanese are all morphologically marked distinctively: an intransitive verb and its transitive counterparts share a root to which intransitive- and transitive-forming morphemes are suffixed. These morphemes are not unique, and there are more than dozen such morpheme pairs (Jacobsen 1992). Examples are given in (8).

(8)	<u>intransitive (inchoative)</u>	<u>transitive (causative)</u>	<u>gloss</u>
	ak-u	ak-e-ru	open
	kowa-re-ru	kowa-s-u	break
	nig-e-ru	nig-as-u	escape
	nob-i-ru	nob-as-u	extend
	ag-ar-u	ag-e-ru	rise
	ok-i-ru	ok-os-u	get up

As is reported for Aki in Tsujimura (to appear) and is further confirmed by Ryo’s production data, both children produced more intransitive verb types than their transitive counterparts. More importantly for our purposes, a great many of these morphologically intransitive verbs that the children produced are change of location/position verbs such as *deru* ‘be put out, exit’, *hairu* ‘be put in, enter’, *oriru* ‘be taken down, get off’, and *toreru* ‘come off’. This is shown in (9): the numbers indicate the type count. These intransitive verbs are precisely the ones that conflate motion and path.

(9)	change of location/position	change of state	Total

Aki	24 (63%)	14 (37%)	38
Ryo	21 (81%)	5 (19%)	26

e.g., change of location/position: *hairu* ‘be put in, enter’, *deru* ‘be taken out, exit’, *oriru* ‘be taken down, get off’, *toreru* ‘come off’, *noru* ‘be put on, get on’, *ochiru* ‘fall’
change of state: *kowareru* ‘break’, *naoru* ‘be fixed’, *kawaru* ‘change’, *wareru* ‘break’, *kieru* ‘disappear’

2.2 Morphologically Unmarked Intransitive Verbs

The prominent status of motion and a strong association of motion and path in intransitive verb production by the two Japanese children is also the pattern that is observed in morphologically unmarked intransitive verbs. What I call “morphologically unmarked intransitive verbs” are intransitive verbs that do not find their transitive

counterparts that share verbal roots with them. The proportion of motion verbs to the total number of intransitive verb types is given in (10) and (11) for each child. The numbers of path conflation verbs and manner conflation verbs in type are also given in (10-11). Although we see individual variation, especially in Aki's verb production, the dominance of motion verbs, and particularly the dominance of motion verbs with path conflation is observed.

(10) Aki

	total (type)	motion	path conflation	manner conflation	other
I	0				
II	6	5 (83%)	4	1	
III	15	10 (66%)	7	2	1
IV	25	16 (64%)	11	4	1
V	35	15 (42%)	11	3	1

e.g., Path: *iku* 'go', *kuru* 'come', *kaeru* 'return', *noboru* 'climb', *dekakeru* 'leave'
 Manner: *hashiru* 'run', *tobu* 'fly', *odoru* 'dance', *suberu* 'slide'

(11) Ryo

	total (type)	motion	path conflation	manner conflation	other
I	2	1 (50%)	1	0	
II	9	5 (56%)	4	1	
III	10	5 (50%)	4	1	
IV	21	8 (38%)	5	3	
V	23	10 (43%)	9	1	

e.g., Path: *iku* 'go', *kuru* 'come', *kaeru* 'return', *noboru* 'climb'
 Manner: *tobu* 'fly', *hashiru* 'run', *oyogu* 'swim'

2.3 Expressing Path and Manner Simultaneously

At the outset I have shown that path and manner are each conflated with motion but not together in Japanese. In order to express path and manner together, either periphrastic expressions or compounding must be utilized. We have seen this in (3-5). Interestingly, the children do dissociate path and manner, expressing manner externally to verbs with path conflation. Both children produced path verbs such as *iku* 'go' and *kuru* 'come' with a gerundive form of a manner verb *tobu* 'fly'. This is shown in (12). Notice that these follow the adult pattern of (4).

(12) Aki: *tondettyaatta* (=tonde *ittyatta*) (2;6)
 '(it's) flown away' (=flying has gone)

Ryo: *tonde kita* (2;5)
 flying came
 '(it) came here flying'

<i>tondettyatta</i>	(= <i>tonde</i>	<i>ittyatta</i>)	(2;9)
'(it's) flown away'	(=flying	has gone)	

In addition to periphrastic expressions and compounding, manner is often expressed by mimetic words in Japanese. For example, while various manners of walking are conflated in individual motion verbs in English, Japanese utilizes the manner verb *aruku* 'walk' with a variety of mimetics specific to each manner. This is illustrated in the examples in (13), taken from Ono (1994:xxv-xxvi) (see also Tsujimura, in press)

- (13)
- | | | |
|---------------------|--------------|-----------|
| <i>tyoko-tyoko</i> | <i>aruku</i> | 'waddle' |
| <i>teku-teku</i> | <i>aruku</i> | 'trudge' |
| <i>toko-toko-to</i> | <i>aruku</i> | 'trot' |
| <i>dosi-dosi</i> | <i>aruku</i> | 'lumber' |
| <i>tobo-tobo-to</i> | <i>aruku</i> | 'plod' |
| <i>bura-bura</i> | <i>aruku</i> | 'stroll' |
| <i>yota-yota</i> | <i>aruku</i> | 'stagger' |
| <i>yoti-yoti</i> | <i>aruku</i> | 'toddle' |

It is noteworthy that Aki used mimetic words to express manner with path verbs. Examples are given in (14).

- (14)
- | | | |
|------------------|---------------|-------|
| <i>tonton</i> | <i>noboru</i> | (2;5) |
| [tapping] | climb | |
|
 | | |
| <i>buu-tte</i> | <i>iku</i> | (2;7) |
| [sound of car?] | go | |
|
 | | |
| <i>gotsun-te</i> | <i>ochiru</i> | (2;8) |
| [heavy impact] | fall | |

Another observation can be made concerning contrasting patterns with path and manner. As (2) and (3) show, a goal phrase can appear with a path verb while it cannot with a manner verb. Although there are not many instances, both children started to use postpositions of direction during the observation period: included are *ni* 'to', *e* 'to', *made* 'to, as far as', and *kara* 'from'. Interestingly, these postpositions are always used with path verbs. Of particular relevance to our discussion is the use of *ni*, *e*, and *made*, i.e., postpositions that mark direction and goal of motion. (15) lists actual instances.

- (15)
- | | | | |
|------|------------------|-----------------|-------|
| Aki: | <i>koko-made</i> | <i>ittyatta</i> | [2;6] |
| | here-to | have gone | |
|
 | | | |
| | <i>zoo-e</i> | <i>itta</i> | [2;6] |
| | elephant-to | went | |
|
 | | | |
| | <i>koko-made</i> | <i>kityatta</i> | [2;7] |
| | here-to | have come | |

shako-ni *haittyatta* [2;7]
garage-to have entered

sen-made-ne *kite* [2;8]
line-to come

Ryo: *papa* *koko-niiku* [2;2]
father here-to go

ootobai-ni *noru* [2;10]
motor bike-to get on

There is not a single instance in which directional phrases accompanied by these postpositions cooccur with manner verbs. That is, there are no errors of the type demonstrated in (3). There are some cases where location nouns are used without postpositions, but even these instances involve path verbs, not manner verbs. Some examples are shown in (16).

(16) Aki: *doitsu* *iku* [2;7]
Germany go

ruuburu *iku* [2;7]
Louvre go

Ryo: *asobiba* *iku* [2;7]
play ground go

puuru *iku* [2;8]
pool go

Thus, the children invariably express manner externally to path verbs by using gerundive forms of manner verbs periphrastically or by mimetic words. Furthermore, errors resulting from the attempt to use a manner verb with a directional phrase are not attested in either corpus. Rather, it is always path verbs that appear with directional phrases.

2.4 Verbal Nouns of Motion

Finally, examination of verbal nouns confirms the primacy of motion with conflation of path in verbs. Verbal nouns are so termed because of their predicative property and their categorial status as nouns. They can optionally appear with the verb *suru* 'do' to give the categorial status as verbs. Some examples are given in (17).

(17) benkyoo (N) benkyoo-suru (V) 'study'
kenyuu (N) kenyuu-suru (V) 'research'
sanpo (N) sanpo-suru (V) 'take a walk'
deeto (N) deeto-suru (V) 'date'
doraibu (N) doraibu-suru (V) 'take a drive'

I will focus on Aki’s production of verbal nouns, virtually all of which appeared without the verb *suru*. Most of Aki’s verbal nouns that denote motion are the ones that conflate path. This is shown in (18).

(18)

path-incorporation	manner-incorporation

I	<i>jampu</i> ‘jump’
II	
III	<i>shinkoo</i> ‘proceed’
IV	(? <i>taisoo</i> ‘exercise’)

These verbal nouns denote events, and particularly motion events. As the list indicates, Aki produced more path-incorporated motion verbal nouns than manner-incorporated motion verbal nouns.

3. The Principle on Result-Focus Perspective

We have thus far made several observations based on the semantic nature of the predicative forms that the two Japanese children produced. Our observations point to the salience of the notions of motion and path and their incorporation into a single predicative form in the Japanese children’s early vocabulary. An important question to be asked is given that motion is perceptible and hence serves as a relatively concrete concept that the child can extract from a verb, on what bases the child individuates path-incorporated motion events. Put differently, of all possible elements surrounding a motion event that could in theory be conceptualized with motion, including path, manner, reason, source, duration, sound, means, accompanying individuals, and even scenery, what principle guides the child to the individuation of path-incorporated verbs more readily than others? I wish to claim that the dichotomy of the process and the result of an event holds a key to this question, and that emphasis of the result is one of the deep-rooted principles in Japanese that the child applies to the conceptualization of motion events. In so doing, I will make crucial reference to Slobin’s (1991) proposal of “learning to think for speaking.”

The conceptual basis of Slobin’s proposal is summarized in the quote in (19).

- (19) Here I wish to propose that the child acquires more than a system of grammatical forms and semantic/communicative functions. In acquiring the grammar of a particular language, the child comes to adopt a particular *framework for schematizing experience*. That is to say, the grammatical system also expresses meanings. These meanings are of a *general* sort, in contrast with the *specific* contents of lexical items. Grammatical meanings apply across all possible lexical contents, putting the specific content of any particular sentence into a framework

of temporal and spatial relations, modality, voice, illocutionary force, and so forth. (Slobin 1991:7-italics original)

Slobin further gives an example of rhetorical differences between English and Spanish in (20).

- (20) The languages incline towards different patterns in what is asserted and what is implied. Thus, at many points in our narratives, English-speakers assert actions, implying results, whereas Spanish-speakers assert results, implying actions. These differences come to have an effect on overall rhetorical style. English narrators devote somewhat more narrative attention to descriptions of processes, while Spanish narrators tend to provide more descriptions of states. (ibid.:19)

According to Slobin, then, when the child acquires the grammar, s/he learns these language-specific patterns encoded in the language that are relevant to discourse.

The kind of process vs. result dichotomy reflected in languages like English and Spanish to which Slobin refers is relevant to Japanese in that the result-focus perspective is mirrored in a wide range of rhetorical as well as grammatical phenomena (Hinds 1986, Ikegami 1981, Kageyama 1996, Kunihiro 1974, Morita 1994, Teramura 1976, Yoshikawa 1995). Furthermore, many instances of the phenomenon of emphasizing the result of an event often have morphological realization in Japanese. Instances of the result-focus perspective are, thus, ubiquitous in the adult language to which Japanese children are exposed. In acquiring the grammar of Japanese, then, it is the framework built upon this result-focus perspective that the child adopts, and the child faces conceptual packaging within such a framework. Motion events are concrete and form a salient concept (Mandler 1992). However, of all possible aspects surrounding a motion event, the child needs to figure out which aspects to be extracted as concepts that a given verb refers to. I conjecture that the perceptual analysis (in the sense of Mandler (1992)) by Japanese children is further guided by the principle of the result-focus perspective, which leads the child to focus more on the result of a motion (i.e., path) than the process of it (i.e., manner). In so doing, the child isolates the combination of motion and path as a natural unit more readily than other combinations such as motion and manner. This mode of conceptualization of motion events in the Japanese children's early vocabulary learning lends support to the view advanced by Bowerman (1996a, b) and Choi (1997), among many more, that language-specific linguistic principles affect conceptual development of children.

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